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# THE IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY

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## YouTube Red: YouTube's Premium Subscription Service



Youtube Red offers a premium subscription service, including original content from creators only available to users of the service.



**RATAN VARGHESE**  
1A ELECTRICAL

YouTube Red is a new video streaming service offered by YouTube, which was announced on October 21 and launched in the US on October 28. Red users are able to watch YouTube videos ad-free, save them offline, and play them in the background when multitasking on smartphones. Additionally, there will be original content available only for Red users, inaccessible to ordinary YouTube watchers. There is supposed to be a monthly fee of \$9.99 (raised to \$12.99 for those who, for some reason, decide to purchase it on an iOS device), but at the moment there is a 30-day free trial. Furthermore, the cost is bundled with the Google Play Music All Access music streaming service: this means that Google Play Music subscribers automatically gain access to YouTube Red, and YouTube Red users automatically gain Google Play Music All Access. The "old", advertisement-supported YouTube service will continue to function as normal.

This is not YouTube's first foray into paid subscription. In 2013, YouTube added paid channels, which are paid for by users rather than advertising. They also launched Fan Funding, whereby certain YouTube channels could receive donations from users. These efforts went more or less unnoticed, except by fans of channels that joined these schemes. A more significant turning point was last year, when YouTube launched the

Music Key beta. For \$9.99 a month, users were able to play music videos in the background, without advertisements. In an interview with the Verge, Robert Kyncl, YouTube's chief business officer, said that "the most common and most frequent point of confusion was why this set of features didn't work across YouTube".

So YouTube's strategy shifted: instead of offering narrow, a-la carte payment options, they would offer all of YouTube's videos, with more than Music Key's features, for a single monthly fee.

Obviously YouTube and its users are not the only stakeholders here. Will advertisers turn away from YouTube, now that the most affluent segment of their target audience will not be seeing any adverts? Kyncl is not worried at all. "Ninety-nine point nine percent of the content on YouTube will be free, as it always has been," he said. Furthermore, even if YouTube Red gained 100 million users (as much as the entire US paid television market), that would be less than a tenth of YouTube's total viewership.

The other major stakeholders are the content creators, the uploaders, the people who put their rants, cat videos, and five minute animations on YouTube. There are millions of YouTubers, and it was difficult to convince all of them to offer their videos without adverts. In this context, "convince" actually means "bully": so-called "partners" who would earn advertising revenue but did not agree to the YouTube Red revenue-sharing scheme would no longer be able to share their videos with the public. In fact, their already-uploaded videos would be hidden as well. Threats were not YouTube's

only negotiation tactic: apparently they "remain committed to working closely with these partners with the goal to bring them on board". While some creators are rather annoyed by all this, others manage to earn large portions of their revenue from product placement, merchandising and offline events. YouTube's position is that creators would earn as much or more revenue from Red views than from ad-supported views. They'll even be paid during the free trial, but less significantly.

Some new content will be available exclusively for YouTube Red users. An illustrative example is Scare PewDiePie, where the YouTube celebrity PewDiePie "encounters terrifying situations inspired by his favorite video games". This series is, believe it or not, backed by the creator and executive producers of The Walking Dead, and two smaller studio companies. This the heart of YouTube's original content strategy: coupling celebrities that made it big on YouTube with professional Hollywood-level production talent.

Speaking of Hollywood, the large media conglomerates had to be roped in with another round of deals. They wanted to receive a larger cut of revenue than regular YouTubers, on the grounds that content from the old guard would be the main source of viewership for YouTube Red. YouTube did not oblige, but almost all the major studios (barring Disney: they couldn't let it go) agreed to work with YouTube anyways. This is a reflection of the change in the media landscape, and YouTube's position of power within it. While movie and TV studios are watching their viewership decline, YouTube's total viewing time jumps by 60% percent each year.

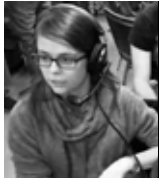
While YouTube is a giant in the media industry, it does not stand alone. In the living room, YouTube will need to compete with the likes of Hulu, HBO and Netflix. These services do not stream children biting each other: they offer professionally-produced shows, with juggernaut celebrities and massive fan bases. While YouTubers operate on shoestring budgets, these services pay millions merely to license possible hit shows. YouTube does not really plan on following in their footsteps. According to Kyncl, "To us what is important is we are not doing what everyone else is doing, competing for the same sources of material, the same creative elements. We are looking for people who are proven to work really well on our platform."

However, among smartphone junkies and distracted office workers, YouTube has another competitor to consider: Facebook. Last year Facebook users watched a billion videos per day, and this year the number has jumped to 4 billion. Last year only 30% of videos watched on Facebook originated on Facebook, but this year the proportion of "native" videos is 70%. Some of the difference was caused by quiet improvements to Facebook's video uploader. The rest was caused by allowing videos to automatically play in the Facebook news feed (a feature inspired by The Daily Prophet magic newspaper in Harry Potter). Facebook is one of few firms that can compete with YouTube's reach and Google's user data, making them attractive to advertisers and content creators seeking a large audience. Of course, not every auto-played video is

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# Letter from the Editor

## The Midterms Aftermath



**MEAGAN CARDNO**  
EDITOR-IN-CHIEF

The third issue of term has come out a lot more quickly than the second, eh? By one entire week, actually, so hopefully the wait hasn't been as bad for you, dear readers. Once again we are in a new month, though—the somber month of November.

In this issue, we have a wonderful assortment of goodies waiting for you, including Raeesa's thought-provoking piece "What Happened to the Horse and Buggy?", which speaks about the technology of today and how much of an impact it has on our culture and growth as humans. Leah and Gabrielle have been kind enough to share stories of their own family members in a special Remembrance Day article, while Donovan speaks about how engineering students can benefit from having a creative hobby or two outside of their studies.

As for columns, this week Tina covers several acoustic treats in *On Replay*, while Donovan laments the wonder that was Ultimate Comics in *Between the Pages*. In *Leafy Thoughts* Nina covers the devastation of Hurricanes, while a special Halloween edition of Caitlin's *Things You Don't Want to Know* treats us to a variety of folklore that are horrifying in more than one way. Be sure to check them all out, as well as our other returning columns (no bias but *ChemHistory* also has an interesting subject this week, wink wink).

Actually, come to think of it, *sombre* is one of the only words that describe November, is it not? Some of the darkness from Halloween seems to drag across the midnight hour between October 31 and November 1. Most of the vibrant leaves have already fallen from the trees by this point, now they are caked with mud on the ground, and leaving empty branches painting the skyline like bony fingers. There's also a more serious tone that comes with Remembrance Day—the only significant occasion of the month for us dear Canadians.

Well, I still stand by it that I far prefer our October Thanksgiving to the November one the Americans celebrate, as it feels like too many turkey meals in a short span of time.

But I digress, do not let the somber tone of November press on you—after all, both hell weeks have finally ended! Or... mmmmaybe that's not something that I should mention if I wish to raise your spirits. After all, for many of us (first year or upper year), midterms are somewhat of a wake-up call for our status

in a given class, or of our performance in the term as a whole. And it most certainly is not always a welcome one.

Actually, who ever welcomes a wake up call? Most of us would much rather stay in our blissful sleep, unaware of the reality of the world to which we have closed our eyes.

Sadly, in that regard, we can't simply turn a blind eye to the troubles that await us. We have to accept the reality and face the music of the situation we are in.

So. Maybe you're in a pickle. What next?

I had half a mind to write out an "x steps to identifying and solving your problems", simply because solving most issues follows the same "analyse, identify, isolate, and act" skeleton. But most people are aware of the methodology of solving issues, so repeating the same tired advice probably isn't really all that helpful to you.

Trying to motivate you with words might not be helpful either, because I'm certain that everyone has thrown the same phrases at you time and time again. Even further over-saturation in that department doesn't help your situation at all.

So, what advice can I offer?

I suppose just the knowledge that many, many others have been in your position before you, and were able to succeed. Some might even have been in worse positions than you, as hard as it might be to imagine. Historic evidence shows that the goal you have in mind is entirely possible to achieve, so act under the knowledge that you too can follow the trend of success.

Next advice I can offer is to recommend perspective on your issues. How many of your stresses are only temporary? Often, stresses are high-intensity, but short term. Remind yourself that the difficulties you are going through right now will, in fact, come to pass eventually. If things don't seem fine now, keep your head high with the knowledge that things do, usually, get better with time.

Of course, that's not without it's own warnings—you will still need to make adjustments if you want to see any major improvements in your problems. Be it in your academic grades, your job status, or your social life, there are always at least small improvements that you can make to help facilitate growth in the areas you most wish to improve.

For example—if you find your grades somewhat lacking, and have identified that your study habits need work, maybe you simply need to allocate more time for studying, or need to discover a studying routine that better suits your own style of learning.

Maybe you have a habit of procrastinating on assignments regularly

(I know I certainly do...) and need to schedule dedicated 'distraction' breaks in order to successfully complete your work on time. I can't tell you exactly what you need to do, only that you likely need to do it.

And no, I'm going to avoid referencing the Shia Laboeuf meme.

Be sure to not forget that there are a multitude of services available on campus if you find yourself having difficulty in any aspect of your life, academic or not. Between counselling, CECA services, and events run by EngSoc and other societies, there is always something going on that may just be the thing you need to improve your current situation. Be sure to take advantage of these events and services while they are available to you as an undergraduate!

But when it comes down to it, remember that any of the frustration that you may be feeling right now is not just wasted energy, and not intended to weigh you down. Frustration is fuel—fuel to improve yourself, to learn from your past, and to motivate you to not repeat the same mistakes.

At the same time, don't let your frustration get you down too much though. No matter what you might think, you still need to give yourself a break, and even treat yourself once in a while. Be it going out for a meal (I'd recommend sushi myself, makes for a nice treat), having a movie/video game night with some friends, or just listening to music for a while, make sure to take the time to truly enjoy yourself and take a break. Especially after the long, grueling time of midterms, you deserve something nice.

Yes, even if you did absolutely horribly. Actually, *especially* if you did horribly. Don't be too hard on yourself; everyone falters and stumbles from time to time.

View the second half of term as the opportunity for new beginnings, and to right any mistakes that you have noticed in yourself, and improvement should certainly come your way. It may not come quickly, but don't let that discourage you. Patience and commitment are often met with great reward.

With regards to midterms, you can use this time to set goals for yourself, now that you have an idea of where you sit in terms of your academic standing. Remember to keep yourself in perspective of those goals, rather than the expectations or standards of others. While it can be tempting to compare ourselves to those around us, remember the old idiom: comparison is the thief of joy. Your goals should be dictated by you, not those around you.

The future is yours to decide. Take this opportunity to change it for the better.

THE IRON WARRIOR

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

# Engineering Students Need a Creative Hobby



**DONOVAN MAUDSLEY**  
2B MECHANICAL

Let's face it, as engineering students we all get really stressed. There are many different ways to relieve stress. You can go to the gym or you can hang out with friends all the time, but I think that as engineering students we need creative hobbies. Creative hobbies force people to think differently and to meet new and different people. Being creative also changes how you tackle problems.

Having a creative hobby will change the way that you think about everything. Many studies have been done in recent years researching this. Musicians use both hemispheres of their brain more frequently; meaning that creative right brain functions can be more easily meshed with logical left brain functions. Artists also generally have more developed structures in regions of the brain relating to fine motor skills and procedural memory. The brain is definitely still a mysterious place, but creative people definitely use it differently.

Having a hobby will also force you to meet new people in different social

circles. As students our lives revolve around campus and around class. The majority of our interactions are with other students. Having a hobby can help you meet new people, whether they're the store clerk who sells you painting supplies or another student of your guitar teacher. These seemingly chance encounters can add up though. One day you might get asked to play in a band, or lend a piece of art to a gallery, creating more of a chance to meet new friends with similar interests to yours.

Creativity is an under-emphasized quality for engineers. Engineering is very systematic and logical, but

without creative minds nothing would ever evolve. Creativity led to personal computers for everyone, to phones the size of a pack of cards and many more things we take for granted every day. Creative parts of the brain work like anything else, the more you use them the better they work. Practicing creative thinking through a hobby will make you a more creative thinker. Creating something is a very emotional experience, and showing someone else a creation for the first time can be a stressful moment, but learning how to deal with this experience can prepare you for similar times in the workplace.

# Carbon Nanotubes Found in Parisian Children's Lungs



**DEVIKA KHOSLA**  
2A NANOTECHNOLOGY

For the first time, carbon nanotubes have been found in the lungs of children living in Paris.

The discovery comes from a study in which researchers examined fluid and/or cells from the lungs of 69 asthmatic children living in Paris. The study, published in *Ebiomedicine* (which is open source), focused on the fine particles from air pollution which are able to penetrate lower airways. According to the researchers, much of the inhaled particle matter in the

children's lungs consisted of man-made carbon nanotubes (CNTs).

As it turns out, man-made CNTs are not restricted to high-tech nanotechnology labs. They have also been detected in car exhaust, dust, Indian spider webs, and ice cores. According to a chemist at Rice university, the catalytic converters in cars somewhat resemble Rice's high pressure carbon monoxide process to make CNTs, so it is not surprising that they can be found outside of labs.

According to the researchers, the CNTs found in the children's lungs were similar to those found in Parisian car exhaust and dust, which combined with the fact that CNTs were found in all of the samples led them to conclude that humans in general

are regularly exposed to CNTs.

As any nano student who's been through one of Deakin's toxicology courses would know, this could potentially be really bad...or it could be okay, depending on the type of nanotubes. There are some studies that have found CNTs can create an immune response similar to asbestos. Others have found them to have little adverse effect on health. Not all CNTs are the same, and different types of tubes have different health effects. In this paper the researchers found many different kinds of tubes – short and long, single and multi-walled – in the children's lungs. For example, the nanotubes found in the dust and the car exhaust were similar, but not the same; the dust had more multi-walled CNTs.

For the time being, (neither I nor) the researchers can conclude that the CNTs from pollution cause a decline in lung function, at least not without more research. At the moment I wouldn't worry about it too much. For one, the researchers only studied asthmatic children, who are already more vulnerable to pollutants. Also, if CNTs are a product of burning fossil fuels like gasoline, then we have likely been breathing them for a long time (much longer than asbestos). Finally, it isn't practical to wear a respirator all the time anyway. However it is fairly common knowledge that air pollution is bad for your lungs. Perhaps the better thing to do is simply to put some thought into technologies that could reduce air pollution, CNTs or not.

# The Iron Warrior Remembers

**John Galetin by Gabrielle Klempt**

My Opa was an extremely personable man, but very mysterious about his war exploits, which were numerous and intriguing. Born in Yugoslavia to a prosperous family in the import-export business, he became fluent in more than five languages at a very young age, and was able to receive a university education (in civil engineering!). Soon after the war broke out, my grandfather, made a soldier despite his aversion to violence, landed in the first of a series of war camps. There, he always made himself useful by writing love letters for illiterate inmates and acting as a translator. Somehow, my grandfather always managed to escape these camps and return home to his family – before being recaptured and taken to a new camp. His final, most adventurous capture happened after the single-engine plane he was flying to safety was shot down over Italy, where he remained in a camp until liberation. After the war, Yugoslavia was made a communist state, and my grandfather came to Canada not knowing he would never see his homeland again.

One of the languages he did not know well was English and he had to learn quickly; his language skills were soon in demand once again as he worked at numerous jobs with people from all over Europe who had come to Canada after the war. My grandfather received a lucky break when he was hired by a Montreal company looking for welders. As a young man, my grandpa learned welding from his uncle, a metal-work artist, and was able to get a job building those staircases you see on the outsides of houses in Montreal. Eventually, he ended up as a welder on the Trans-Canada Pipeline, a job which took him to places in Canada you've probably never heard of.

Many of the details about my grandfather's life during and following the war won't ever be known, a fact I think is unfortunate because it is obviously a story

worthy of fiction. I do think it's important to remember that the people affected by wars are the young and the hopeful; the university students. Perhaps the next time you're in Montreal and you see an ornate staircase, you will think about my awesome grandpa who is part of the living history of that awesome city.

**Max Sheppard and Ed Kirstufek**

**by Leah Kristufek**

Whenever there is war, there is a degree of chaos. For some, their lives change suddenly, while for others their lives remain fairly stable while they hear about the events unfolding elsewhere. For my family, this was most evident for my grandparents during the Second World War.

For my paternal grandfather, the conflict meant a youth interrupted by the instability of the war and an early adulthood spent displaced by it. For my maternal grandfather, war meant being recruited to fight overseas and returning to a country where it had be life as usual in his absence.

As a civilian in a war zone you are very much the victim; what happens to you is often beyond your control. In that, inevitably there is a degree of peace of mind not shared by the fighters. Your priority – survival – may put you in many troubling situations, but when it comes to 'fight or flight', flight is a valid option. As a child talking to my grandparents, it was always my paternal grandfather who felt comfortable recounting his experiences during the war.

His stories were vibrant. One time he recounted the moment when Nazi forces entered his town and forced the soldiers there to pile their weapons in the town square. Then, after WW2 when he was stuck behind the Iron Curtain, he recounted the fear when requesting a job near the border with West Germany - particularly after the official shuffled his papers and gave them a long stare before telling him to

return the next day.

Despite food shortages and living for years with barely the clothes on his back, life was an adventure for my paternal grandfather. Luckily, he made it to the West with his identity papers and school transcripts, so it was possible for him to eventually make it to Toronto where he finished his Mechanical Engineering degree from U of T in 1952.

Being a combatant is more challenging to recover from. My maternal grandfather was older. He had just finished up a degree from Western University when war broke out, and he was put in charge of a group of soldiers when he was sent overseas. He never spoke much about his time in the war. All of the close friends he went over with died in combat as the western forces pushed across Europe.

His time in combat was cut short when a convoy he was in charge of was attacked after Nazi forces downed trees on the road. He came out with a deep gash from his ankle to his knee. The man who replaced him died the next day. Returning to Canada was surreal, and in retrospect he likely suffered from PTSD.

Between my two grandfathers, I have learned a lot about the effects of conflict. That moment when you leave, knowing you may never see your family again. The shock of coming home from the chaos of war to a home that has not changed. If there is one thing they both agreed on, it is that war is something to be avoided at all costs.

Now, more than ever, these stories resonate with me. Currently, refugees are risking everything to reach Europe and hopes of a better life.

It is important on November 11th to remember those who have died in conflicts over the years, but it is also important to recognize the ones who are living through it right now. Their struggles and suffering can be better understood by remembering the struggles of our forebears, but they can only be eased by our actions now.

# YouTube's Premium Services

Continued from YOUTUBE on page 1

noticed: perhaps this is why these days YouTube touts total viewership time when pitching to advertisers.

YouTube's biggest competitor might be itself. Red isn't just meant for "superfans": the aim is for even casual users to join. Perhaps not many people are really willing to pay for a better YouTube experience, especially those who tune in only a few minutes a day. People uninterested in downloads and original content could just as well use an adblocker on YouTube instead of paying \$9.99 a month. Speaking of original content, will PewDiePie really earn enough from original shows to justify acting in them (and to justify being spooked)? Some content creators fear elitism could ruin YouTube, if (despite Kyncl's assurances) some high-demand content became Red-exclusive. Up until now, when a high-profile YouTuber wanted to be paid for their work, they would make paid content available on their own site. It is unclear if they would be willing to cede even more control of their business to YouTube.

Attention is a precious resource, and YouTube Red will need to fight for it. The free trials and bundles can only be helpful to a point: eventually YouTube Red will need to make a profit, and Google Play All Access has its own share of attention deficit. Miscommunication is pretty much guaranteed, given the number of disparate features bundled in YouTube Red. Of course if users misremember the "Tube" and the "Red", Google will have a heated, heavy struggle to seduce them back.

# What happened to the Horse and Buggy?



**RAEESA  
ASHIQUE**  
1T ELECTRICAL

Two salesmen from a lighting control company did a presentation at my work a couple of weeks ago, regarding their new light dimming technology. Intensity increase and decrease buttons replace the traditional sliding dimmer, with multiple other buttons to program specific zone lighting and a remote control to change the setting. I don't know about you, but I can hardly remember which light switch is for the living room and which is for the stairs in my own house, which makes ten switches on the wall seem like overkill. "What happened to the on/off light switch?" The marketer mentioned that he always counters this common question with, "Well, whatever happened to your horse and buggy?" Touché.

Let us get into a discussion of new technology on the market, which brings me to my first question: just because we can do something, does that mean we should?

Today we are farther than ever in the development of horseless carriages because, ready or not, we are well on our way to a self-driving car! Two weeks ago, Tesla released its new autopilot system for their Model S vehicles as part of a software update, which means the theoretically "self-driving" car is officially on the roads. Autopilot combines hands-free lane control and lane change, automatic parking, and 360-degree collision warning. After setting the top speed and preferred following distance from the car ahead, the Traffic-Aware Cruise Control (TACC) feature will adjust according to traffic.

Autopilot is activated by pulling twice on the lever to the left of the steering wheel, and deactivated by pushing it once. It operates using sensors, radar, cameras and GPS to collect data on lane markings and surrounding cars or obstacles.

Lane control requires either clear lane markings or a car ahead to follow, and will keep to the centre of the lane when rounding a curve with the system constantly updating. When the driver signals a lane change, the car will sense if the coast is clear before smoothly transitioning over. Automatic parking requires two other parked cars and a curb as reference, and is only available with the driver inside the car. It will also brake automatically in the chance of a collision.

These features are not entirely unique. Mercedes-Benz has had active cruise control for about ten years now; Mercedes, Acura, Jeep, and Volvo models have lane change correction systems; and self-parking is available in Chrysler, Ford, and Volkswagen models. However, Tesla's combination of hands-free driving features makes it new and exciting, as the closest thing to autonomous driving right now.

As with any product, there is a right and

wrong way to use it. For example, you must actually be inside the car. Drivers are advised to keep their hands on the wheel, and be prepared to take over control if necessary. If they do not respond to the periodic prompts to touch the wheel, the car will come to a complete, controlled stop. Autopilot is not meant to act as a valet or chauffeur: the driver should always be present and aware. And no, it is not cool to read the paper, fix your makeup, or check your phone in the car. Your newsfeed will still be there once you reach your destination.

These days, cars are not the only product on the market with artificial intelligence. Barbie dolls can now boast this same attribute, with the ability to converse with her playmate. Whatever happened to Cabbage Patch Kids?

U.S. toy company Mattel revealed "Hello Barbie" earlier in 2015, which is now available for pre-order online, and is expected to hit American stores next month and Canadian stores sometimes next year. Hello Barbie has an embedded microphone to record children's voices and other voices nearby. The WiFi connected doll transmits these conversations to a server, where they are processed using voice recognition software to produce a tailored response, resulting in a unique interaction with each child. This software was developed by a company called ToyTalk, and it is similar to Apple's Siri.

The "smart" doll is part of an attempt to boost revenue after Mattel's profit dipped 15% in the first ten months of 2015 compared to the same period last year, as children's entertainment moves farther away from traditional toys. However, Hello Barbie was greeted with negative responses from parents, branding the toy as creepy and possibly a spy.

The Campaign for a Commercial-Free Childhood (CCFC) is an advocacy group which launched a "Hell No Barbie" campaign, warning parents to keep this doll away from their kids. It "has taken off like no campaign [they've] ever done", with their petition to pull the doll off the market boasting 5000 signatures in less than a week. CCFC argues that the doll is an invasion of privacy, and that Mattel will use this "trove of valuable information" from the child's conversations for marketing purposes.

Josh Golin, the group's executive director, worries that "Mattel may be cutting deals for what products the doll is talking about," which would expose the child to advertisements or other unwanted influence.

However, both Mattel and ToyTalk were clear that this was not the intent with Hello Barbie. "All parties involved are prohibited from using the data to advertise to the child," said Tom Sarris, ToyTalk's head of communications. He also stressed the effort to protect children's privacy, saying they "have integrated a variety of privacy and security measures into Hello Barbie's hardware and software". In

addition, Barbie does not have a GPS built in, and the microphone only records when activated.

However, the invasion of privacy is not the only concern with Barbie. Mattel says that, "The number one thing girls have been asking for is to have a conversation with Barbie", and their goal is to have the child "become like the best of friends" with her. CCFC Board member Dipesh Navsaria, assistant professor at the University of Wisconsin, says that "children's well-being and healthy development demand relationships and conversations with real people and real friends. Children do not need commercially manufactured messages."

Final concern? Hello Barbie comes with a price tag of \$74.99 US, which is almost \$100 Canadian.

There are definitely valid concerns with both of these innovative new products, but as with anything, may I add. Regardless, the artificial intelligence available in these two products is amazing. Just think about what else is available these days: smart watches, 3D printing of human tissue, Google glass, self-driving cars, and the list goes on.

According to Moore's Law, a well-known observation in the electronics world, the number of transistors on an electronic chip doubles every twelve to eighteen months, which means that our computing capabilities are growing exponentially. We are a lucky generation: in our short lifetime so far we have witnessed this explosion of knowledge.

Let's first take an example from the film industry (and I hope everyone watches enough Disney to relate). The other day when I realized that Snow White came out in 1938, Jungle Book came out in 1967, and Lion King came out in 1994, I was very thrown off. When I think of the movies that came out in my lifetime, there is a world of difference in the quality of animation. I wondered how animation barely improved in sixty years, until I realized that, of course, the industry's drastic change was because of computers. And when you compare these older movies to Frozen, for example, the shift is very evident.

Let's take another example: cell phones. In 2001, they were basically good for calling and texting. In 2010, smartphones had 5 megapixel cameras, 1 GHz processors, and 3G data connections, and now in 2015 they have 20 megapixel cameras, 2.2 GHz processors, and 4G data connections. I found it ironic when my dad exceeded his data last month and asked me if he would still be able to text with his data off. I explained that calling and texting are the two most basic functions of a cell phone, and yes, as long as it is through his provider and not an app, these functionalities are still available. He told me I couldn't make fun of him, because in his day the cordless phone was advanced technology. We have definitely come very far.

In the next ten years, the computer chip

will reach maximum transistor capacity, with quantum computing expected to replace regular chips by the year 2020. This advancement will be huge. We are talking next level advanced here: the cure for cancer, harnessing the sun's power as an unlimited energy source, artificial intelligence which will make robots smarter than people, mind uploading, computers installed in the bloodstream, memories stored on a hard drive, and finally "functional" immortality with the merging of humans with machines. Of course, these are just projections, but in short we can expect to witness the unimaginable in our lifetime.

So here is the million dollar question: what is too much technology? I mentioned earlier that just because we can do something this does mean we should, whether for ethical, practical, or any other reason. Here is the thing, though: technology is rapidly doubling and is not planning on stopping. Ever. Developers are not interested in whether or not they should be producing some new product or system, just in money, fame and advancement. So we have to use our own discretion on an individual level.

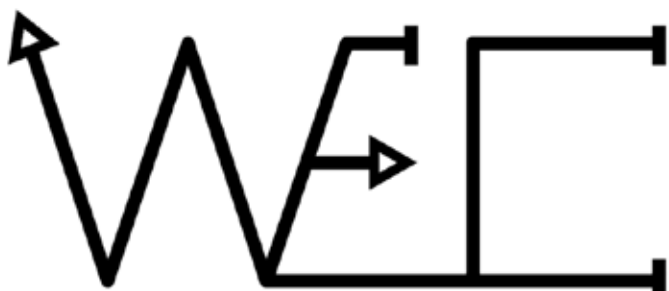
Now don't get me wrong: I love my devices as much as the next person, and I'm all for newer, better and faster. If I didn't support technological advancement I would be following a much different lifestyle by choice, and I would definitely not be in ECE.

However, I do not think there is any doubt that technology is making us lazy. At a very basic level, we cannot even do mental math anymore. Calculators are the simplest kind of computers, and as computing systems become more advanced we become proportionally lazier. I also think it is eliminating original thought. One can argue that there is no such thing as original thought, but that is a discussion for another time. When some random topic comes up in conversation, especially a controversial one, it is hard to resist Googling it to see what others are saying. Can we not think for ourselves anymore? While the internet seems to have all the answers, we are all intelligent and capable of forming our own opinions.

At the risk of sounding like a parent, I do not think it is healthy to be constantly plugged in. However, we live in a world surrounded by technology. There is no escaping it, and to be honest, who would want to? I'm also guilty of marathoning Netflix instead of sleeping, and sitting on my phone instead of studying. However, I do think we need to be conscious of what we are buying and how we are using it. For example, parents are freaking out about Hello Barbie, but no one is forcing them to purchase it just because it is on the market. The same goes for any technology. After all, we still have free will, or at least we will until machines' intellects surpass our own and they take over the world.

Whatever happened to the horse and buggy, indeed.

## The Waterloo Engineering Competition wants YOU!



Junior Design, Senior Design, Consulting, and Programming competitions are looking for undergraduate students like you to compete! Design a solution to a given problem, impress the judges, and move on to the Ontario Engineering Competition, hosted right here at the University of Waterloo!

The competition happens the evening of Friday, Nov. 20, and Sunday, Nov. 22.

Register at [bit.ly/WECfall15](http://bit.ly/WECfall15) before Sunday, November 15!

# Deadly Rivals: The Rising Prevalence of Tuberculosis



**GABRIELLE KLEMT**  
1A GEOLOGICAL

It is an illness long forgotten in the minds of many, but one which continues to impact thousands of people world-wide today. Consumption, the White Plague, tuberculosis: it has been around in some form for thousands of years. The tell-tale signs were incessant coughing, coughing up blood, and rapid loss of weight and colour followed by a slow, painful death.

However, the early 20th century brought about the advent of antibacterial drugs and vaccines and it was thought that tuberculosis was gone for good... at

least in the West where these new anti-tubercular medications were available.

Today, the illness is by no means gone, and strangely the number of infected persons has been increasing over the past few years, as well as the prevalence of a new strain of "superbug" TB which is more antibiotic resistant. In 2014, a recorded 1.1 million people around the world died of tuberculosis, compared to 1.2 million people killed by HIV/AIDS world-wide. For the first time since the mid-90s, tuberculosis is coming close to surpassing HIV's death toll.

Once so common it was responsible for 900 in every 100 000 deaths, TB has become a kind of "romantic" illness of the past. Now, here in Canada, stats say that TB affects only about 5 in 100 000 people every year. Sadly, as may be expected,

the majority of people affected with it are Aboriginal people in poorer, remote northern communities with limited access to the resources our country possesses to deal with this illness – something very much in common with world statistics right now.

The majority of recent deaths from TB have been in countries like India and China, a fact which may seem shocking at first glance because these countries are by no means "poor". These are countries which are considered able to address domestic health issues like TB outbreaks. Although these countries are large players on the world market, however, there are still areas where people live in conditions of extreme poverty with limited access to resources, and, like the communities in northern Canada, it is these areas which

are most affected.

For a disease that is completely treatable, it is simply irresponsible that there should be so many deaths due to TB in the 21st century. Unfortunately, it is due in part to a lack of funding for TB that there is such an upsurge of deaths from this infection; it received only a tenth of the funding which HIV/AIDS received in 2014.

In some ways, the World Health Organization's new report on the TB crisis is a good thing. It is, for the first time in a while, making people aware of the real threat posed by TB today, even in more developed countries. It can be hoped that the WHO's report will bring about a shift in public attention, and a greater amount of funding to help people in need recover from this curable disease.

# Hurricane Patricia: Strongest Hurricane in History



**NINA FENG**  
4A ENVIRONMENTAL

LEAFY THOUGHTS

Hurricane Patricia, the strongest hurricane ever recorded in history, made landfall in Western Mexico on October 23. The most powerful globally in terms of maximum wind speed and the most intense tropical storm in the Western hemisphere with respect to barometric pressure, it developed from tropical storm to Category 5 hurricane in less than 24 hours, a remarkably short period of time.

At its peak, wind speeds had reached 325 kilometres per hour and an extremely low central pressure of 0.879 kPa had

developed, rousing again the debate for whether or not a Category 6 should be introduced in the hurricane classification system. For context, Typhoon Haiyan, which struck the Philippines in 2013, killing more than 6,300 people and doing \$2.86 billion USD worth of damage, reached speeds of 315 km/h. A particularly windy day here in Ontario - in which walking against the wind is a bit of a struggle - might show winds of about 70 km/h; 300+ winds are therefore insanely powerful.

By the time it reached South America, it had weakened substantially with winds of 270 km/h. Despite this, it became the first hurricane since 1959 to make landfall on Mexico's Pacific Coast whilst still being considered a Category 5. While it caused massive flooding and building

damage for a total cost greater than \$283.2 million USD, its general impact was less catastrophic than it had the potential to be. It managed to avoid more densely populated areas, including many tourist destinations, although rural areas, agricultural activities, and small towns sustained major damage.

Very few deaths were reported as a result of the storm, with 8 direct fatalities and 5 indirect. The Government of Mexico, who has been facing criticism under President Pena Nieto, has since been praised for their effective communication of the situation, and organizing the evacuation on citizens and tourists into shelters. Two aircraft and 600 buses were employed, ultimately evacuating roughly 8,500 people, with 25,000 members of the Mexican armed forces and police overseeing activities.

Initially hitting the state of Jalisco, it lost much strength over the course of the day on October 24, before moving into the mountains. Overall, the hurricane lasted from its formation on October 20 to its dissipation on October 24. It continued on as a storm, where it reached Southern Ontario on October 28, bringing in rainfall of up to 50 mm in some areas.

Environmental conditions in the Pacific greatly contributed to the force of this particular hurricane, the 24th named storm of the 2015 season. The overall increase in hurricane intensities of the past few years continues to fuel discussions around the human influence on climate change, and whether or not countries need to upgrade their disaster response plans in anticipation of future record-breaking storm events.

# Course Evaluations: Have Your Say!

**JESSICA IP & GORDON STUBLEY**

COURSE CRITIQUES DIRECTOR & ASSOCIATE DEAN OF TEACHING

It's course evaluation time, and change is in the air!

This term, alongside the paper-based Course Critiques, the Faculty of Engineering is running a trial of a campus-built online course evaluation platform. Ten undergraduate courses have been selected for the trial; that's about 4% of fall 2015 undergraduate evaluations. This may seem small, but we're hoping the small size will limit the impact that any unforeseen issues might have.

As part of this trial, students in these select classes will be asked to complete their Course Critiques electronically, during class, using their web-enabled mobile devices. We're hoping this trial will demonstrate that this new platform will work smoothly in the Engineering context. One of the big benefits we see with the online platform is that any student who isn't in class on evaluation day will still be able to complete the evaluation, as it will be open for the entire two-week evaluation period.

Other than the obvious difference, the paper and electronic evaluations are pretty much the same: they are both anonymous, they are both completed during class, they both ask the same questions and they are both administered during the same two-week period: November 16 to 27, 2015.

Students in classes included in the trial will receive instructions during class about how to complete the online evaluation. For the remaining 96% of undergraduate evaluations, the paper-based questionnaires

will be sent out as usual to professors and instructors, and they will bring them to class sometime during the two-week evaluation period. Student volunteers will distribute the blank questionnaires, collect the completed questionnaires and deliver them to the EngSoc office. At the Screening Meeting, your Course Critiques Director ([coursecritiques@engsoc.uwaterloo.ca](mailto:coursecritiques@engsoc.uwaterloo.ca)) will work with student volunteers to screen the written comments and prepare the packages for scanning and processing. Comments submitted as part of the online trial will also be available for review at the Screening Meeting.

In the first week of the winter term, course instructors will receive a summary of the numerical data and the original completed questionnaires so that they can review the comments; instructors of courses included in the online trial will be able to review their data and comments online. Summaries of course data will be posted online for you and future students to review (see links at [uwaterloo.ca/engineering/teaching-learning/course-evaluations](http://uwaterloo.ca/engineering/teaching-learning/course-evaluations)). We're counting on you to provide meaningful, relevant feedback; instructors rely on your input to help improve their teaching. Think of this as your chance to influence the way

that courses are taught and support change for the better!

The last thing we'll add is that one of the best ways to drive teaching improvement is to make sure that our exceptional instructors receive recognition. We've created a teaching award nomination form that you can complete to let us know which instructors you would like to see nominated for a teaching award. Visit [uwaterloo.ca/engineering/teaching-award-nomination](http://uwaterloo.ca/engineering/teaching-award-nomination) to complete the form.

Thank you for your time, your feedback and, most importantly, for your continued support of the course evaluation process.



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# The Up Kind of Dates!



**HANNAH GAUTREAU**  
PRESIDENT

Hello Everyone! I hope midterms weren't too bad. Congrats on getting through them! Unfortunately, school has been incredibly hectic with midterms and projects, so this will be a pretty short update.

### Third Council Meeting Summary

We had our third EngSoc council meeting on Wednesday, October 28th. Chris Lolas, the FedS president, spoke about a new student building that is being proposed between the SLC and PAC. Kristine Meier, one of the counsellors in Engineering Counselling, spoke about the services that are available on campus, as well as the various initiatives that are being worked on within Counselling Services.

Council voted to show their support for the new societies agreement, had a discussion about the possibility of having a platform for engineering students to contact students about their past co-op jobs, and mid-term actuals were presented.

For more information about council meetings, make sure to check the EngSoc website, and subscribe to the mailing list! If you have any questions about our council meetings please contact executive.b@engsoc.uwaterloo.ca and we would be more than happy to answer your questions. The next meeting will be held on Wednesday, November 11th at 5:30 in CPH 3607.

### Study Skills Workshop Round 2

We will be running another workshop with the Student Success Office to help you recover from midterms and get through your finals! Come talk to upper years and learn skills that will help you succeed for the rest of the term. The

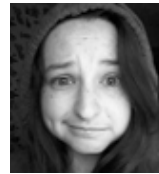
workshop will be held on Wednesday, November 18th from 6-8pm.

### Mental Health Awareness Week

I wanted to say thanks to everyone who participated in Mental Health Awareness Week. It was amazing to read all of the blogs and all of the secrets that were submitted. A huge thanks goes out to our directors Deon Hua and Fiona Wong for putting the week together. We ran an event called Let's Talk Mental Health, and it was a huge success! There was a lot of great conversations, and so many people showed so much courage by speaking about their experiences.

If you ever have any questions or just want to chat don't hesitate to send me an email at president.b@engsoc.uwaterloo.ca.

# What's Happened and What's Coming Up



**TERESA LUMINI**  
VP INTERNAL

Hello, people of the Engineering Society!

Hell week is over! You might be in a bit of a rough shape (I know I am), but you survived, so congratulations! Now you can finally move on with the rest of the term, and look forward to some more of the even more awesome events that are coming up this month!

### Mental Health Awareness Week

During Upper Year Hell Week, we ran Mental Health Awareness Week, to try to promote mental health as well as to offer advice on services available to help. We also shared other people's past experiences and how they got through them.

We had Post-Secret Week, and got so many submissions! It was great to see everyone sharing their struggles and encouraging others who shared with supportive posts, such as "you're not alone".

We also hosted Let's Talk Mental Health, which was a discussion group for sharing tips on how to stay healthy and where to go if you needed help, as well as personal experiences.

Last but not least, the National Service Dogs made a second visit to POETS, which everyone seemed to enjoy!

### Upcoming Events

Now that Hell Week is over, there are plenty of exciting events for you to participate in, including TalEng, Semi-Formal, Career Fair, Waterloo Engineering Competition (WEC), and EngHack, along with many other smaller events. These are all coming up this month, and we would love to see you there!

Show off your talents at TalEng.

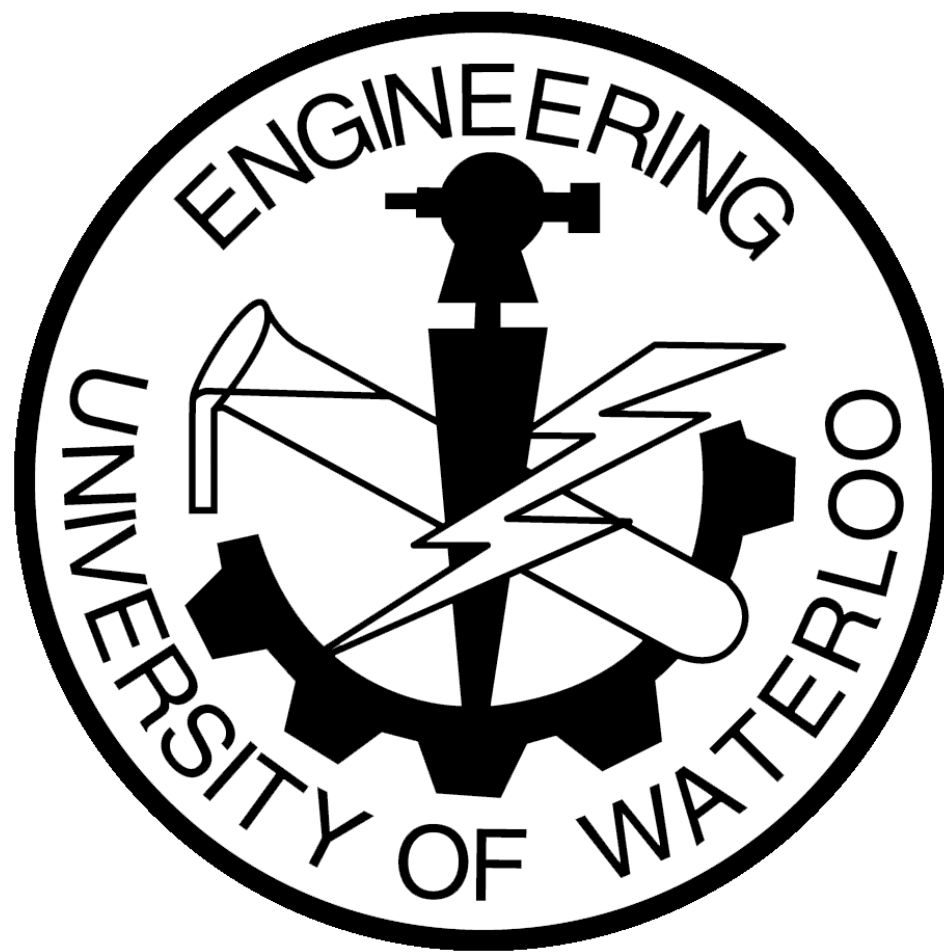
Get fancy for Semi Formal.

Network at Career Fair.



Design things and win prizes at WEC and participate in the EngSoc hackathon, EngHack.

### P\*\*5

Be sure to sign the P\*\*5 sheets at each EngSoc event to earn P\*\*5 points so you can help win money for your class! So far Mechanical 2017 is in the lead! Be sure to come on out and earn those points!



## Upcoming Events Calendar

Wednesday November 4	Thursday November 5	Friday November 6	Saturday November 7	Sunday November 8	Monday November 9	Tuesday November 10	<b>Check out up-to-the-day event postings on the EngSoc website at <a href="http://engsoc.uwaterloo.ca/event-calendar">engsoc.uwaterloo.ca/event-calendar</a></b>  <b>NEW FEATURE: CCA events being offered by CECA. See <a href="http://uwaterloo.ca/career-action/">uwaterloo.ca/career-action/</a> for details and to register</b>
Friendship Bench Unveiling Ceremony 12:00 - 1:00PM	Career Fair 11:00AM - 3:00PM, Seadra Student Design Centre  Enginuity 12:30 - 1:30PM  Excel Workshop 12:00 - 1:00PM, Multimedia Lab, CPH  Spirit 2018 Board Game Night 7:00 - 10:00PM, POETS	First Year Fridays  Finger Painting 11:30AM - 1:30PM, POETS  Movie Night 6:00PM - 12:00AM, POETS	D&D 3:00 - 6:00PM		Resume Critiques 6:00 - 9:00PM, RCH  CCA  Interviews: Proving Your Skills 1:30 - 3:30PM, TC1208	Charity Grilled Cheese 12 - 1PM, Outside POETS  Perler Bead Workshop 12:30 - 2:30 PM, POETS  Arduino Workshop 6:00 - 8:00 PM  Genius Bowl 6:00 - 9:00PM	
Wednesday November 11	Thursday November 12	Friday November 13	Saturday November 14	Sunday November 15	Monday November 16	Tuesday November 17	  
EngSoc Meeting 4 5:30 - 7:30 PM, CPH 3607  Trip to the Movies 6:00 - 8:00 PM  CCA  Are You LinkedIn? Learning the Basics 2:30 - 4:00PM, TC1208	MATLAB Workshop 5:30 - 6:30PM, CPH 1346  EngProv 6:00 - 7:30PM  Spirit 2018 Bomber Trivia Night 7:00 - 11:00PM  CCA  Ontario Rehabilitation Science Programs Applications 3:00 - 4:30PM, TC1208	Conference on Diversity in Engineering  First Year Fridays	Conference on Diversity in Engineering  EngHack  Rock Climbing 12:00 - 4:00PM  D&D 3:00 - 6:00PM	Conference on Diversity in Engineering  EngHack	Change For Chagne Week  Recipe Exchange 6:00 - 7:30PM, POETS  CCA  Exporing Your Personality Type (MBTI) 10:30AM - 12:30PM, TC1214	Charity Grilled Cheese 12 - 1PM, Outside POETS  Charity Movie Night + PJ Party 6:00 - 10:00 PM  CCA  Management Consulting as a Career Option 1:30 - 3:00PM, TC2218	

# We Are Not Alone



**KIERAN BROEKHOVEN**  
VP EXTERNAL

Hey everyone!

Hope your midterms went/are going well. I personally just finished off mine. In this update I'll be talking a bit about why engineers go to conferences. As a society we attend seven conferences per year, each with the Engineering Student Societies' Council of Ontario (ESSCO) or the Canadian Federation of Engineering Students (CFES). Unfortunately, it's easy to see these conferences as just a chance for a bunch of us to hang out with engineers from other schools and not

really get anything done. Alas, there is method to our madness.

Each conference serves a different purpose, but all have some underlying features. Some of the most important points are exchanging best practices and networking. Every time we attend a conference we meet people who run entirely different engineering societies in entirely different ways. Seeing so many different methods gives us some great ideas that we always bring back to our school. Often policies that govern the society are based on policies that other schools or ESSCO and CFES have implemented. Networking is also important because maintaining communication between schools is key; having a strong network of connected people between schools allows us to run

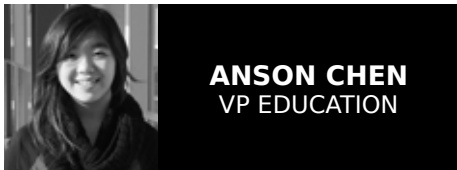
events together, easily discuss issues arising in ESSCO and CFES and get quick advice on best practices.

Now don't get me wrong, conferences are a crazy amount of fun. We spend all day being productive but there are plenty of great night events. Past events have included banquets, laser tag, karaoke, etc. We meet lots of great people and make some great connections. If you've been reading this and going "damn, I would get a lot out of one of these", it sounds like you should apply for a conference. We have applications open for CFES's congress until November 6th at 11:59pm, so if you'd like to join us in Calgary, I highly recommend applying.

Thanks for reading! I love talking about conferences so drop by the EngSoc office if you have any questions.

## Get PumpED For November!

### Career Fair, PD, and Teaching Excellence



**ANSON CHEN**  
VP EDUCATION

Hey everyone! It's Anson, hope you all had a great Halloween and are enjoying the colours of the fall!

November is a pretty great month for co-op and academic-related news. Matches from the main Jobmine round should have come out by the time this is published; if you are happily matched, congratulations!

If not, fear not: the Engineering Society is hosting a Career Fair on November 5 in the E5 Student Design Center. Employers such as MMM Group, Clearpath Robotics, Armtec, and

more will be here to recruit students for both co-op and full-time opportunities. Raffles for some neat electronics will be held throughout the day, and in general it will be a fun and network-ful time. We hope to see you there!

Look out as well for some prize draws for those who have submitted recently to the Exam Bank. If you haven't yet uploaded an exam, you still have time to do so, before we give away two Cineplex movie tickets on November 15th! Each exam sent to [exambank@engsoc.uwaterloo.ca](mailto:exambank@engsoc.uwaterloo.ca) will count for a raffle entry, and each solution set will count for another.

I will be meeting with the directors of the WatPD program in the upcoming weeks, to discuss improvements to PD and bring forward the student

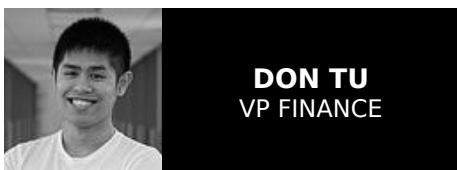
perspective. If you have any insight on how you would like PD to change, send me a message before November 10, and I will bring it to people who can effectively use the feedback.

Lastly, nominations for the EngSoc Teaching Excellence Award are open until November 18! If you are interested in recognizing a professor, teaching assistant or lab instructor for outstanding teaching, look in your uWaterloo email for a message from Robin Jardin with links and information regarding the award and nominations.

Told you November was a busy month. As always, look out for blurbs in the weekly EngSoc emails and website regarding more details on academic goings-on.

Thank you, and see you next time!

## Lots Tu Look Forward Tu



**DON TU**  
VP FINANCE

The days are growing shorter, the air is getting brisker, and autumn leaves are scattering across the campus grounds. What does it all mean? That it's midterm season, of course! Incidentally, it is also time for another biweekly update from your friendly neighbourhood VP Finance!

Not a lot seems to have happened on the surface of the Engineering Society since I last wrote to you. Sure, the Executive had a great time dressing up as Pac-Man and the ghosts (Inky, Blinky, Pinky, and Clyde are their names, if you

didn't know) and handing out candy, but what's really going on? What are they planning beneath their insidious, retro-gaming Halloween costumes? Will Don stop writing rhetorical questions and let us know what's going on? Sure, since you asked so nicely.

On the topic of sweet engineering merchandise, I'm very excited to say that Novelties is now having a patch sale! A whole bunch of patches are now selling for \$2.50 a piece, including the Ringed patch, Waterloo patch, departmental patches, and more! Swing by Novelties to take advantage of these prices while they last!

There's also a ton of events coming up. If you've taken a look on the Engineering Society calendar (or simply just extrapolated from how busy your

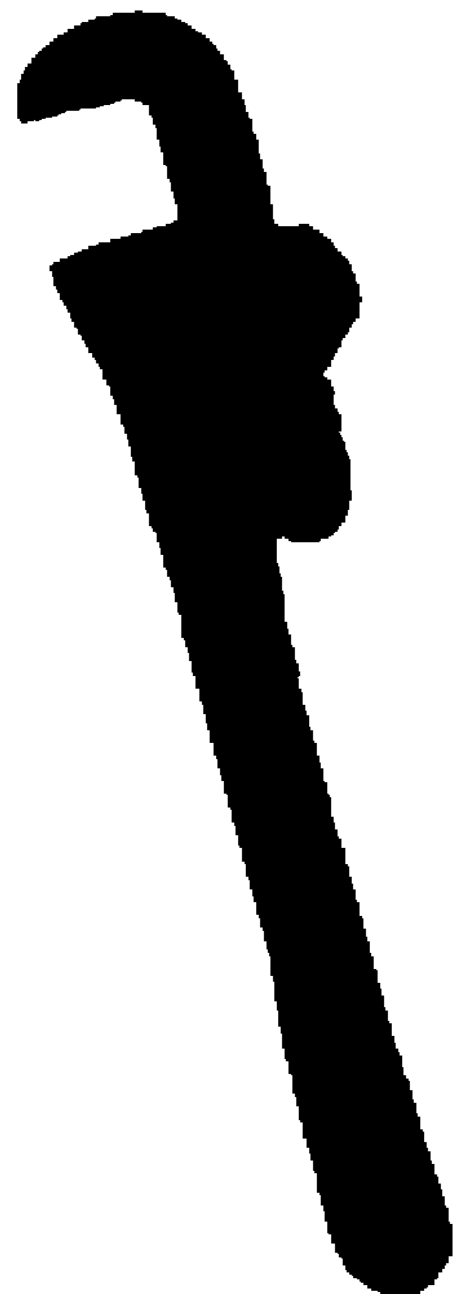
life seemed in October), November is also going to be a super busy month, with TalEng and Semi-Formal but two of the many, many events coming up. Quite a few of these will require financial support from the Society, which means a helping hand from yours truly.

We've also got the Sponsorship Committee meeting coming up. We will be hearing from all sorts of student teams and groups as to how they will be able to benefit our student community as a whole!

That's all I got for now, folks. As always, feel free to reach out to me at [vpfinance.b@engsoc.uwaterloo.ca](mailto:vpfinance.b@engsoc.uwaterloo.ca). Now, if you'll pardon me, I am going to go back to my cave and keep studying for my remaining midterms.

Take care, everyone!

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Rene Johnston for The Toronto Star

**Alex Anthopoulos, affectionately called “A.A”, has chosen to leave the Toronto Blue Jays Organization**

## Master Architect Leaves Jays After Storm of Success



**ELIZABETH SALSBERG**  
3B NANOTECHNOLOGY

THE BENCHWARMER REPORT: BIRDWATCH!

Last Wednesday, Jays fans were disappointed to find out that Alex Anthopoulos, the man behind the excitement these past three months, has left the Blue Jays organization. Team owner Rogers Communications, Inc. pulled every trick in the book in an attempt to convince the King to return, but was without success after hiring incoming President Mark Shapiro on August 31st of this year.

Speculation as to why Alex chose not to come back has been rampant. To cut to the chase, it is most likely that this goes back to the mishandling of the Paul Beeston affair back in 2013. Edward Rogers, the man in charge of overseeing the Blue Jays at Rogers, let rumour get out that he was going to fire outgoing Jays President Paul Beeston. Beeston would of course find out, and subsequently announced his retirement following the end of the 2015 season.

Under Beeston, Anthopoulos had final say on all things baseball. Every deal, from those that went swimmingly well (i.e. this year’s trade deadline) from those that did not turn out quite as we might have thought (the Marlins trade, 2013), was engineered and finalized by A.A. himself. Beeston cited A.A. as being ‘his horse’ and trusted him with all the baseball decisions.

Though incoming President Mark Shapiro is yet to be tested in Toronto, back in Cleveland he was known to weigh in on baseball decisions, particularly where prospects are concerned. Some say that Shapiro over-values prospects, and that he was critical of A.A.’s big moves at the deadline this year. Again, this is only speculation, and even so, Shapiro deserves a clean slate when he gets started here.

Given that A.A. can now go to any team he wants, it is reasonable to assume that he will go somewhere where he feels that he is guaranteed to have the final say. Bet on him having a new home by the winter meetings.

Wherever you go A.A., best of luck, and thank you from all Toronto Blue Jays fans—you did a fantastic job!

## Netanyahu Clarifies Earlier Comments about Holocaust: Not Actually Caused by Palestinians



**CAITLIN MCLAREN**  
3B CHEMICAL

Israeli Prime Minister Benjamin Netanyahu has clarified some highly controversial remarks he made earlier this month, where he placed blame for the Holocaust on the late Palestinian leader Grand Mufti Haj Amin al-Husseini.

At a meeting of the 37th Zionist Congress on October 20, Netanyahu stated in his speech that Hitler had not originally intended to exterminate the Jewish people, but after meeting with al-Husseini had changed his mind. Netanyahu quoted al-Husseini telling Hitler to, instead of merely expelling the

Jews, “burn them.”

Many Holocaust historians publicly expressed disagreement. Hitler and al-Husseini actually did meet in 1941, but there is no record of what they actually discussed. Al-Husseini was a noted anti-semitic who referred to Jews as a scourge in the world, and was accused of war crimes relating to the Holocaust and also in the Serbian genocide during World War II. However, regardless of his stances, there is no evidence that he had any significant influence on Hitler or the Nazi establishment.

Netanyahu’s comments, which many viewed as denial of Nazi Germany’s role in the killing of around six million Jewish people, were immediately controversial both in and outside of Israel. Isaac Herzog, the leader of the Zionist Union

party, accused Netanyahu of distorting history and trivializing both the Nazis and the Holocaust. Meanwhile, Angela Merkel, the Chancellor of Germany, said that “We abide by our responsibility,” placing the blame for the Holocaust solely on Germany. Furthermore, historians say that Hitler’s anti-semitism began long before he gained power, and that the Holocaust had begun before the 1941 meeting between Hitler and the Palestinian leader.

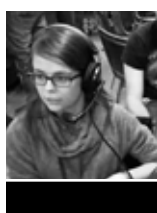
After the speech, Netanyahu was widely ridiculed, but he is accustomed to controversy. His comment came at a time of increased tension between Palestinians and Israelis, and many criticize the timing as well as the veracity of the statement. During this time, Netanyahu was urged by UN Secretary-General Ban Ki-moon

to lower the tone of his rhetoric in order to avoid causing further trouble – a piece of advice which, it seems, he did not follow.

Now, Netanyahu has clarified his comment. While he insists that al-Husseini had encouraged and supported Hitler and the Nazis, he declared that “his intention was not to absolve Hitler” and that he had merely meant to show evidence that Palestinians have long harboured hatred towards the Jewish people. In a post on Facebook, he called the interpretation that he did not blame the Nazis for the Holocaust “absurd.”

This clarification is in line with the “orthodox” view of the Holocaust, but Netanyahu’s original controversial statement cannot be unsaid. Some fear that whatever damage it caused is not undone by clarifications.

## Livestock and Letters: All About Anthrax



**MEAGAN CARDNO**  
3B NANOTECHNOLOGY

CHEMHISTORY

If you’ve ever been paranoid of opening a mysterious letter which arrived in the mail, perhaps it is because you were worried about *Bacillus anthracis*—the bacterial cause of the disease we know as Anthrax.

Anthrax is perhaps most infamous for the 2001 attacks following 9/11, in which several letters containing military grade anthrax bacteria spores were mailed to both media offices and U.S. Senators. Responsible for the death of five people and injury of seventeen more, the disease far predates any thought of biological warfare.

Typically, the majority of human exposure comes from those working with dead animals and animal products (i.e. meat, hide, wool, hair...). For this reason, the most historically dangerous form of anthrax contracted via inhalation

was aptly dubbed “Woolsorters’ Disease”. In the present day, almost no accidental exposures of this nature occur, as animals raised for their products are not at risk for exposure to anthrax.

The etymology of the word comes from the Greek word for coal, which is likely due to the characteristic coal-black, boil-like skin lesions that form after cutaneous exposure to the bacteria. In French, it is known as *maladie du charbon*, or carbon sickness, for similar reasons.

The *Bacillus anthracis* spreads solely through airborne spores, meaning it is not possible to “catch” anthrax from an infected individual. However, their clothing and body may still possess spores, which is why appropriate decontamination of affected areas is paramount in limiting the harm of an outbreak.

Even more dangerous in the spreading of spores is the corpse of a deceased, infected individual, as the body and fluids will still contain a high concentration of bacteria which can likely be exuded into the environment.

Infection can occur through inhalation, ingestion or cutaneous exposure.

Cutaneous exposure is, of the three, the least deadly due to very apparent symptoms and readily available antibiotics, while inhalation is the most common route and results in the most deaths as symptoms sometimes appear too late for treatment to prevent death.

Once infected, the bacteria multiply rapidly and produce three specific proteins, which are the actual cause of death. These three proteins are called the lethal factor, edema factor and protective antigen. Individually, none of them are capable of causing death: it is their combination that proves fatal.

The protective antigen reacts with both factors to produce two different deadly toxins (appropriately named edema toxin and lethal toxin), which, in turn, cause tissue swelling (edema), tissue destruction and the eventual death of the exposed organism.

It is for this reason that antibiotics must be taken promptly after exposure to the bacteria; if administered too late, lethal levels of the toxins produced by the anthrax can still remain in the host eventually causing death, despite removal



Creative Commons

**Louis Pasteur vaccinating a sheep against anthrax bacteria**

of the anthrax bacteria itself.

If left untreated, anthrax disease can cause death between a few days to a few weeks after initial exposure to spores.

Luckily for us, monsieur Louis Pasteur developed the first vaccine for treating anthrax in 1881. He publicly demonstrated his concept of vaccination by preparing two groups of livestock, one of which was injected with his vaccine, and exposing them both to a strain of anthrax bacteria. All members of the control group died, while all the vaccinated animals survived.

# Perspective Vs. Counter-Perspective

**PERSPECTIVE**

**TIFFANY CHANG**  
1A CHEMICAL

Being in engineering is a crucible. Before I ever arrived on campus, I expected that it would be difficult, but I must say, the rigour and intensity has surpassed even my anticipation.

Recently, though, I think I've begun to understand why engineering has been a male-dominated field for so long.

I don't know if I speak on behalf of the average female, but when I mess up, – be it on an assignment, quiz, test, or whatever – I berate myself. I logically know that I shouldn't because it does nothing to change things for the better and, honestly, all it does is make me feel even worse. However, it's my natural inclination to condemn myself. From that moment on, it's a feedback loop of negativity: I think, "I must be stupid."

"I'm not good enough."

"I'm a failure."

As a woman, do I just care too much?

Do I try too hard to control things that are inherently out of my control even though I have done my absolute best to prepare for the worst?

I hope I'm not the only woman – or person, for that matter – whose biggest problems stem from everything that goes on in my mind.

Ironically, I think that's what motivated me to pursue this education in engineering.

Our field boils down to serving people, whether it's through providing them with infrastructure, products, services, ideas, or pretty much anything and everything in between. Caring is essential to being human, and despite the jokes we crack, engineering students are, indeed, human. Mortal though we may be, we are

**Editor's Note:**

This week's *Point Vs. Counterpoint* has been modified to showcase two different perspectives on the effects of gender in engineering studies.

The views and opinions expressed here do not necessarily reflect those of the authors, *The Iron Warrior*, or the Engineering Society.

**COUNTERPERSPECTIVE**

**RATAN VARGHESE**  
1A ELECTRICAL

Being an engineering student is pretty difficult. It's like sailing through a hurricane full of labs, assignments, exams, note-taking, arcane concepts, and cryptic Greek letters. Something or other has to give: generally that means skipping almost every tutorial and talking with, at most, a small clique who shares every class section with you.

Classes move fairly quickly, and trigonometric identities won't explain themselves. I have to learn every concept correctly the first time, which means if there is even the slightest ambiguity my arm shoots towards the ceiling. Sometimes I ask a pertinent question, sometimes I don't, and on one recent occasion I simply asked "But...?" to the amusement of the rest of the class. Not everyone shares my attitude. Most students never get a word in edgewise. There's this one genius who manages to answer at least half the questions the profs toss to the class, and never seems to misunderstand anything. Among the tiny pool of remaining class conversationalists, there are almost no women.

This is one of the few occasions I actually notice gender balance in class. I sit near the front and only look back for a few seconds per lecture. In 2015 I attended psychology lectures, ECE lectures, reduced-load chem lectures, and the chemical engineering section of a circuits class. I got the vague impression that some classes had different gender balances than others but it was never something that bothered or excited me. I suppose I'd notice if a lecture had less than ten women or more than a hundred. I'd notice, but I cannot see myself changing my

behaviour at all. The only things that matter are being able to understand what's going on, and having something to say.

I suppose, in theory, I could end up among a group of women who discuss things I know nothing about. But this already happens to me in most large groups of any gender composition.

Things are different in smaller, goal-oriented groups. There was a group project last term, where my group had two women, and two men (including me). Nobody spoke or contributed significantly less than anyone else. However, in the weekly group tutorials I have this term, the one woman in my group is quieter than any of the three men. In both groups I spoke pretty freely: everyone was pretty work-focused.

I have only ever had male lab partners, and pretty much everyone I talk to outside of class is male. Most of my female friends from past terms are off-stream. What does it matter though? As far as I know I treat them pretty similarly.

When I meet someone for the first time they don't ask me about anything more personal than my Jobmine. I tend to reciprocate: I don't have a very proactive social strategy. I don't have a social strategy at all. When I talk, I talk to whomever is nearby. Maybe if we meet again, we'll talk again. When I hear the word "networking" I think of routers, and when I hear the word "dating" I think of how much that would wreck an already precarious work-life balance.

As far as I know, I cause all my own problems. Any issue I've faced in university would've turned out better if not for my own ineptitude. I am my only significant obstacle, my own worst nemesis.

Are these effects being human? Being male? Being "brown"? Being an engineer? Being a reduced loader? Being me?

## Broskies on Brewskies

Harbinger, Eureka, and Lone Pine

**DONOVAN MAUDSLEY  
& TRISTAN KEUHN**  
3B CHEMICAL & 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. For this issue we wanted to review three

Waterloo-made craft beers, but we were only able to find two at the LCBO so we went with the three craft beers with the coolest logos.

First up this time is Harbinger, an American Pale Ale from the Descendants Beer and Beverage Company in Kitchener, Ontario. The logo is a simple red and white with the harbinger figure on the front. On the first taste test this beer closely resembles an IPA, and has a nice, hoppy taste. It is also quite smooth. A pleasant aftertaste and general tastiness

make this a pretty good everyday beer. While not a showstopper, we give the Harbinger four out of five - would drink again.

Next up is Eureka Cream Ale from Bell City Brewing Company in Brantford, Ontario. Chosen for its old-timey logo featuring a bearded man flying using a steam-powered helicopter harness, it's a very different beer from Harbinger: sweeter and maltier. A smooth, flavourful beer that is easy to drink, it is a solid cream ale that a wide audience would find

enjoyable. We also give Eureka a four out five; it is well worth checking out.

Finally, we drank Lone Pine IPA, from Sawdust City Brewing Company in Gravenhurst, Ontario. It sure is an IPA. Heavy on the hops and light on subtlety, it does the job if IPAs are your thing, but does not really distinguish itself. We find this beer fine but not particularly interesting; it gets a two and a half out of five. We strongly recommend the Harbinger and the Eureka, but not the Lone Pine.

## Elizabeth May for Environment Minister?



**BRYAN MAILLOUX**  
2A MECHATRONICS

While the Green Party didn't quite get the Parliamentary representation they were hoping for in the October 19 election, winning only a single seat in the House of Commons, they could have the opportunity to implement their policies in another way. Not one, but three different online petitions have asked Prime Minister Justin Trudeau to appoint Green Party leader Elizabeth May as Minister of the Environment. The authors of the petitions each had a similar idea: Trudeau should show his willingness to introduce change in the government

by appointing May to his cabinet. Furthermore, this precedes the 2015 United Nations Climate Change Conference in Paris, which Canadian delegates will attend at the end of November, and "[w]e need a strong voice in Paris", according to Gillian Turner, an author of one of the petitions.

May says it is unlikely that Trudeau would appoint her to the role, but was encouraged by the support. In addition, as Environment Minister she would essentially be working for the Liberals, which she said was not what "voters of Saanich-Gulf Islands [her riding] asked for".

Turner said the whole thing was "a bit idealistic" anyway. But she declared victory for the petition on October 27, after Trudeau invited May to be a part of

the Canadian delegation that goes to Paris later this month. He also intends to ask Tom Mulcair, leader of the NDP, and the Conservative Party leader (either Stephen Harper, or a new leader) to come along. This presents a stark contrast to Harper's approach, which entirely excluded opposition party members as delegates at international conferences. In fact, to go to the UN Climate Change Conference in 2013, May was forced to attend as part of the Afghan delegation.

As of October 31, the petitions had a combined total of just over 110,000 signatures. Hopefully this show of support for opposition parties will be an incentive for Trudeau, who will choose his new cabinet on November 4, to further honour his promise of an "inclusive" government.



Geoff Robins for AFP

**The proposal of Elizabeth May as Environment Minister has even prompted petitions.**

# Ghosties, Ghoulies, and Things That Go Bump In the Night



**CAITLIN MCLAREN**  
3B CHEMICAL

## 5 THINGS YOU DON'T WANT TO KNOW

Happy Halloween, everyone! I hope you didn't get too scared – that would leave nothing for me to do. In the spirit of Halloween, here are some horrible monsters, demons, and other nasty creatures that you didn't want to know about.

### Cannibalistic Arctic Spirits

The Wendigo is a cannibal spirit that lives in Northern Canada and also the Great Lakes Region, i.e. here. It originates from starvation in the cold winter months. If a person is so hungry that they turn to cannibalism, they will slowly transform into a Wendigo.

Wendigo spirits are extremely tall and thin – so emaciated that some say that if they are turned sideways, you cannot see them. They are starving all the time – sometimes they eat their own lips and fingers in their crazy hunger. As a person transforms, they become more and more violent, killing and eating even their own family. The more people they eat, the larger they grow – thus, their hunger can never be fully satisfied.

If the transformation cannot be stopped, these people must be killed before they fully transform.

### The Flying Head with Dangling Intestines

The Penanggal is precisely what the title says. There are various origin stories – some say the Penanggal is a woman who made a pact with the Devil and broke it; others say that it is a witch practicing black magic. The most plausible story is that there was once a woman who was taking a bath. When a man walked in; she was so startled that her head jerked up so hard that it came off, dragging her intestines with it. This made her so angry that her floating head chased down the sucker who forgot to knock.

The Penanggal smells of vinegar, because she soaks her loose intestines with vinegar, in order to get them to fit back into her body more easily. The intestines drip poison everywhere, and if they touch you, you develop huge open sores. She also has a long, invisible prehensile tongue that she uses to lick up the blood of mothers giving birth. She may also drink

the blood of newborns. There is no escaping – she can move through walls and ooze up through cracks in the floor.

To get rid of one, you should find her headless body and put broken glass in the cavity, so that it shreds her intestines when she tries to re-enter it in the daytime.

There is a similar monster called the Manananggal, which detaches her entire upper torso. This one is capable of sticking her tongue into a pregnant mother in order to eat the heart of the unborn baby.

Both of these look like ordinary women in the daytime.

### The Rape Bat

The Popobawa is a creature that appeared in Tanzania in the 1960s. It looks like a bat most of the time, but it is a shapeshifter and can change its appearance. However, you can recognize it by the sulphurous smell it often emits, and also by the fact that it sneaks into your house at night and rapes you in the butt. Specifically the butt, for some reason. It also inverts the stereotypical rapist warning – if you do not tell everyone else, it will come back and do even worse things to you.

It can also possess people. (This is not considered to be an excuse for inappropriate behaviour). If you deny that it exists, this makes it even more angry. However, it can be warded off by the Koran.

Apparently, it attacks more frequently around election time, though it has not yet endorsed any major political party.

### The Monster that Licks Poop

Regardless of how clean you keep it, and the wonders of indoor plumbing, bathrooms are still pretty gross. It's what they're for. And the dirtier the bathroom, the more the Akaname likes it.

The Akaname has a long tongue, and sneaks into the bathroom late at night to lick up the filth, and by "filth" I mean crusty old poop and pee spatters. It is also red in colour, because in Japanese "red" and "filth" are homonyms, and everyone knows that poop monsters always love a good pun.

Fortunately, the Akaname is not particularly dangerous – it just wants to eat your old poop. Thus, if you go to the bathroom late at night and see a red monster licking up the suspicious dirt with a long prehensile tongue, don't worry! There is nothing to be afraid of.

### The Boraro

The Boraro is a monster found in South America in the Amazonian jungle. It looks like a man, except that it is covered in thick black fur (so like a gorilla, then). It also has big pointed ears, and tusks. However, its most potent weapon is its genitalia – it can pee a huge stream of strong acid.

There are a few things it doesn't have – for example, a belly button and knee joints. Also, its feet point backwards in order to confuse people. Thus, if you knock it down, it will have trouble getting back up.

It has a soft spot for animals, so if you hunt them, it will get you. If it captures you, it follows a rather curious procedure. First, it squeezes you with its strong

arms until your body is just a pulpy mass. However, it does not break the bones or puncture the skin while doing so. Then, it makes a small hole in the head, and sucks out all the liquefied insides until just a dry bag of bones is left. Afterwards, it blows up the skin like a balloon until the person looks normal on the outside, which requires some serious taxidermy skills.

When it is finished with you, you are inexplicably still alive and are able to walk home, dazed and confused. However, you obviously don't live for very long afterwards.

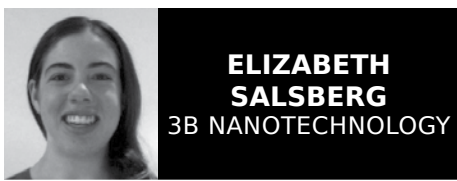
To escape the boraro, you can do any of the following:

- Knock it down, as above.
- Run away backwards, while facing it.
- Offer it a cigarette.



According to legend, humans who turn to cannibalism will transform into wendigos

## Raptors Tip Things Off In Style



**ELIZABETH SALSBERG**  
3B NANOTECHNOLOGY

### THE BENCHWARMER REPORT

Well, well, well, here we are again. It's the beginning of November, and you all know what that means. It's a new NBA season. There also happens to be a new Raptors team on the block—one that's going to improve on its 26th-in-the-league defensive rating last year (while sporting new and stylin' Drake-inspired uniforms).

This offseason, Raptors President and General Manager Masai Ujiri went nose to the grindstone. To summarize: Kyle Lowry, Demar DeRozan and Jonas Valančiūnas are the returning starters. Defensive stud, Demarre 'the Pain' Carroll (Atlanta Hawks) is now at small forward, and Luis Scola (Indiana Pacers) is starting

at power forward. Patrick Patterson and Terrence Ross are coming off the bench, along with newbies Corey Joseph (guard, San Antonio Spurs), and rebounding master Bismack Biyombo (centre, Charlotte Bobcats).

More of a byline, but still worth a mention: Ujiri signed former first round pick and Canadian Anthony Bennett to a cheap, 1-year contract. Bennett was a disappointment in Cleveland and Minnesota, but now has a chance to remake himself with the Raps. We'll see, but I remain skeptical as to how much playing time he will get on this roster if we stay out of injury trouble.

After evaporating out of the playoffs after a 4-game sweep by the Washington Wizards, Ujiri gave Casey the tools he needed to implement his stingy defensive game in the form of Carroll and Biyombo.

Carroll is a quiet workhorse who can not only frustrate the best in the game,

but also score a few buckets. Twenty one points in game 2 against the Celtics, 10 of them in the third quarter alone. Carroll was instrumental in leading the Hawks to a first-in-the-conference finish last season. He fits like a glove with Casey's D-first philosophy. Look for him to lead this team over the course of the season: Game 1 - forty-one minutes on the court. Say no more.

Meanwhile, Biyombo is among the best in the NBA on the glass (though he is admittedly a bit ham-handed when it comes to even simply shooting free throws). Nevertheless rebounding was a serious point of improvement for the Raps coming into this season, and man oh man does this guy bring it: eleven rebounds in a combined thirty-two minutes over the first 2 games. Plus, he brings some serious dunk down low on the post.

All this, and the Raptors have started things off 2-0. So far, so good. Though

they have struggled a bit offensively, particularly in the first quarter, their defense helped them hang around long enough for the offense to come to life.

The addition of Canadian-born Corey Joseph has also been a serious upgrade from Greivus Vasquez. A hard-nosed defender, he can eat up thirty minutes a game keeping opponents in check and pitching in some points too. Casey's go-to small formation: Lowry and Joseph in the backcourt, Carroll, DeRozan and JV up front. These guys will literally run anyone off the court, should a scoring push ever be needed, as in the fourth quarter of game one.

All in all, it will be sure to be an interesting season in a wide-open Eastern Conference. The Raptors should be able to win their third consecutive division title if they stay the course. The key issue will be developing a defensive system that works, so that come playoff time, they'll be ready.

## Autumn Unplugged: Acoustic Gems



**TINA YAO**  
2T CHEMICAL

ON REPLAY

Unwind to a collection of mellow acoustics, a great complement to the crisp autumn scene (pumpkin spice latte optional).

### Andrew Bird - "Pulaski at Night"

Referencing the street in Chicago, the centerpiece of Bird's newest EP is a prime example of the violinist's gift in creating atmosphere with his music. The song plucks and strums along rhythmically, building momentum until the sweeping violin takes over. Bird adds the final touches to the scenery with his sparse message, "I paint you a picture/Of Pulaski at night/Come back to Chicago/City of, city of light".

### Of Monsters and Men - "Lakehouse"

Similar to the other hits on the Icelandic folk band's debut album, "Lakehouse" is crafted with soulful harmony and lyrics. The song begins with soothing acoustics, then erupts into an euphoric warmth when the drums start and Nanna Hilmarsson leads for the chorus.

### Iron and Wine - "Such Great Heights"

A stunning acoustic rendition of the electropop single from Postal Service (side

project of Death Cab for Cutie's front man). The melody has a delicate quality fitting for the lyrics, "They will see us waving from such great heights/'Come down now' they'll say". The song remains blissful until the very end, with an instrumental finale akin to settling into a twinkling dusk.

### Chappo - "Come Home"

iPod commercials have always been known for catchy songs slightly below the mainstream radar, which is just enough to provide a sense of novelty. "Come Home" is no exception. It has even gone above and beyond to actually reference the gadget in their hook. The infectious chanting and uplifting melody also makes for a definite mood booster.

### First Aid Kit - "Emmylou"

The two Swedish sisters name drop the most famous couples of country music (both on stage and off) in a pleasing harmony, "I'll be your Emmylou and I'll be your June/If you'll be my Gram and my Johnny too". Meanwhile the wistful violin dances like an autumn breeze in the background.

### Ingrid Michaelson - "The Way I Am"

The song has long been a favourite in bookstores and coffee shops. It is classic Ingrid; she knows how to sweeten without being cloying. A waltzing drum beat underlines the cascading layers of her silvery voice, "Cause I love the way you say good morning/And you take me the way I am". Ingrid shows what a great love song should sound like: simple, yet full of conviction.



**CAITLIN MCLAREN**  
3B CHEMICAL

In early October, a Médecins Sans Frontières-run hospital was bombed by a US plane during a clash with the Taliban. More than twenty people were killed and many more went missing; the US said that the bombing was a mistake.

Now, another MSF hospital has been bombed in Yemen. On October 26, MSF reported that a hospital in the Haydan district was hit by missiles. Fortunately, staff and patients were able to evacuate in time and there were no

deaths. However, the hospital was almost entirely destroyed. Furthermore, what is left of the hospital cannot be entered, as there remains some ordnance that has not been exploded.

MSF blames the Saudi-led coalition for the attack; the Saudis, who are intervening in the fight against Houthi rebels with a great deal of US assistance, initially denied this.

However, there are now reports that the Saudis admit it was their plane that bombed the hospital, but that it was a mistake caused because the hospital provided them with incorrect coordinates of their location.

The war in Yemen has led to more than 2,000 civilian casualties thus far, with the majority resulting from airstrikes.

## A Love Letter to Ultimate Comics



**DONOVAN MAUDSLEY**  
2A MECHANICAL

FROM PAGE TO PAGE

The 1990s were kind of a mess for the comics industry, and Marvel in particular. They sold the movie rights to some major characters just to stay afloat. New readers were hard to come by because they had to face the ever-daunting task of the back catalogue. Characters within the comics would commonly reference events that happened years, if not decades ago, and readers couldn't fully understand the characters' decisions without this knowledge. The style of the comic was also still very boxy, with dialogue sounding like it was from the golden age of comics. It was fairly obvious to Marvel, after losing a fair share of its stake in the comics market to DC, that they needed to revitalize. Reboots had been attempted before, using parallel universes or having all your heroes returned to their youth by magic, but Marvel chose a different route. They didn't explain it at all. Marvel created Ultimate Comics, starting in 2000 with Ultimate Spider-Man, in a completely different canon, and it was glorious.

In the main Marvel Universe (Marvel-616), Peter Parker was a middle aged crime fighter with a serious reputation and a handle on who he was and how to use his powers. In the Ultimate Comics Universe (Marvel-1610), Peter Parker was a high school student who had just gained his powers and was still struggling to master them and figure out who he was meant to be. Which do you think new readers would have an easier time relating to? After a few months of steadily gaining sales momentum through aggressive marketing (Ultimate Comics boss Bill Jemas shipped Ultimate Spider-Man #1 to wherever kids would be with their parents: outlet stores, Wal-Mart, even Payless Shoes), Ultimate hit it big when Ultimate X-Men #1 topped the sales charts.

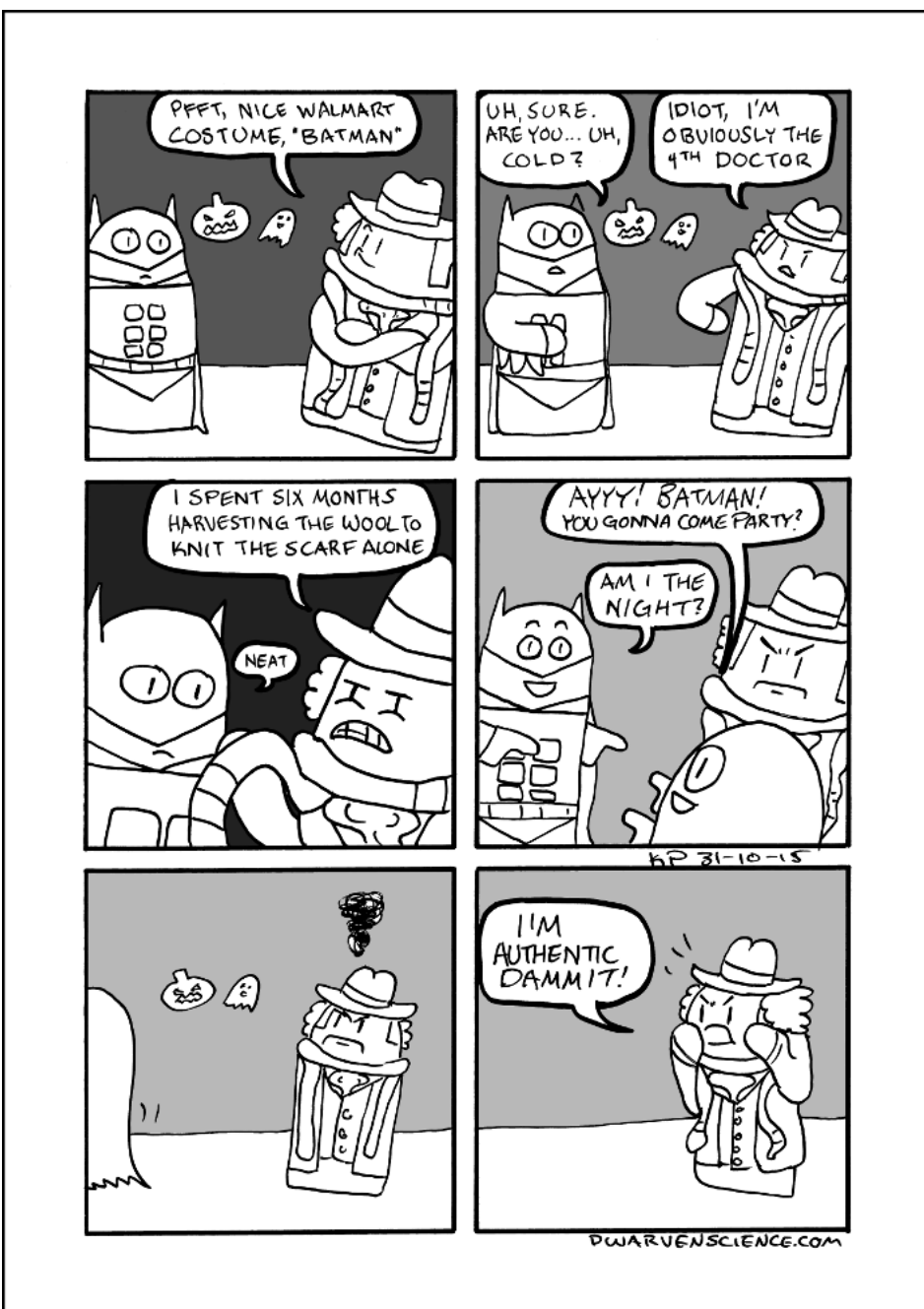
People were excited about Ultimate Comics. It was new and very different. Marvel Editor-in-Chief Joe Quesada had recruited indie comics artist/writer Brian Michael Bendis. Bendis wrote comics more like TV scripts than typical comics of the day and his art style was much sleeker. Gone were the days of

boxy, nine cell style artwork, in were the abstract, all over the page style art we're familiar with today. Then, after two years Ultimate Comics hit its biggest and best series: The Ultimates. The Ultimates were an alternate version of the Avengers, and their first 12 issues limited series is regarded by many as one of the best mainstream comic series of the 2000s; a gritty story by author Mark Millar that read like Avengers: The Movie, way back before the Cinematic Universe was even a daydream. Ultimate Comics kept gaining steam, releasing even more monthly and limited series. However, nothing lasts forever.

One of the things that made the Ultimate Universe great was that it was different and new, but after seeing the success that the updated style could have, main universe artists and writers began to follow suit. The Ultimate style became the norm across all Marvel comics and soon there was nothing different about the Ultimate line. The stories became more involved, and the back catalogue became an issue again. Kids getting into the Ultimate Fantastic Four for the first time wouldn't know why Mr. Fantastic was all of a sudden evil, or what happened to Iron Man back in Ultimates series 1. Eventually the series' started seeing a decline in sales and a decline in quality.

In around 2011 it became clear that the Ultimate line couldn't sustain itself anymore, so the end began to form. Series' reached their ends and characters streamlined to fewer issues. One of the best Ultimate ideas came around this time though: the introduction of Miles Morales. Miles is known as the Ultimate Spider-Man, taking up the mantel after the death of Peter Parker, and is an Afro-Latino teenager from Queens. Miles was an instant hit and a ratings spike, but he couldn't save Ultimate. An event began to form, involving main universe events as well as Ultimate events, culminating in this year's Secret Wars crossover event. After a massive restructuring the lines are being combined into the All-New, All-Different Marvel re-brand. Many characters are being left behind, but a few fan favorites, including Miles Morales, will join the main universe.

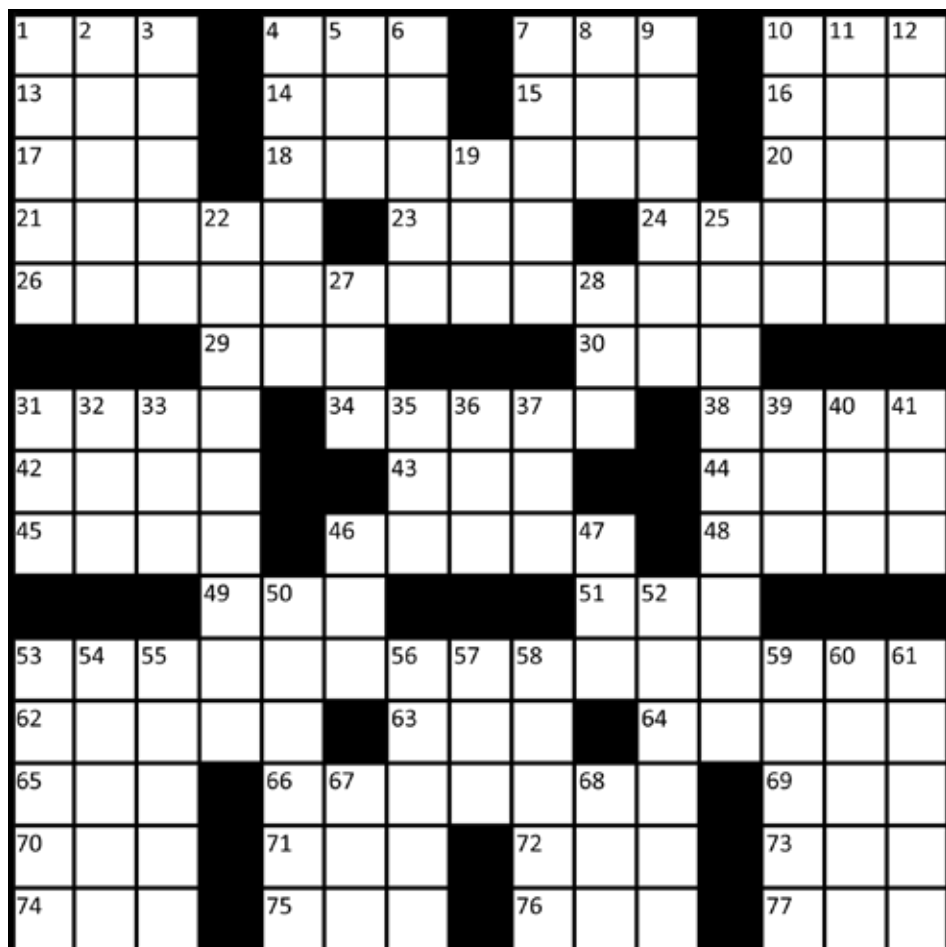
Ultimate Spider-Man #1, which I bought for a toonie at Wal-Mart at age five, led to a huge love of comics. It was simple and enjoyable. I loved the Ultimate Universe, but its ship has sailed. Goodnight sweet prince, and sleep ever so sweetly.



# The Iron Crossword

The Bottom Row of Giants

**CAMERON SOLTYS**  
2T MECHANICAL



**ACROSS**

- 1: A straight shaft
- 4: Used to get maple sap, for instance
- 7: Used to support and connect related electrical components (abbr)
- 10: Used to create light in a "tube TV" (abbr)
- 13: America agency for protection of human health, environment
- 14: Indicates that English is not one's mother tongue (abbr)
- 15: \_\_\_ Region, an astronomical body of partially-ionized gas
- 16: "Hi, \_\_\_ There, Hello" (The Mowgil)
- 17: Visual style of "Legend of Zelda: Wind Waker"
- 18: Roman Emperor Titus who reigned when Mount Vesuvius destroyed Pompeii
- 20: French word for here
- 21: "Add \_\_\_ dash of \_\_\_" said the chemist
- 23: Precedes "the season", perhaps
- 24: Prop used by paleontologist Dr Grant to scare children
- 26: Leader of civilization proposed by 6 Down

29: Opposite of beginning

- 30: Catchphrase of a Nuclear Safety Inspector
- 31: Roman Emperor who commissioned the statue later known as "Colossus"
- 34: "It \_\_\_! I though you were dead!" (2 wd)
- 38: Until recently, known as the largest dwarf planet in the solar system
- 42: "We're movin' \_\_\_" (The Jeffersons)
- 43: Hypothesized 4-D intersection (abbr)
- 44: Leavened oven-baked flatbread
- 45: Aground cargo ship (New Zealand, 2011)
- 46: Preferred delicacy of James Coven, Riley Biers, and Bree Tanner
- 48: Being away from one's post without leave
- 49: "Oh the thinks you can think up if only you \_\_\_!" Dr. Seuss line
- 51: Tit-for-\_\_\_
- 53: He is \_\_\_ a top hat, large beard, and impressive height. (2 wd)
- 62: Famously hit on the head by falling fruit
- 63: Rob Feinstein's wrestling promotion
- 64: Fastener used when bolting into composites to create a flush surface

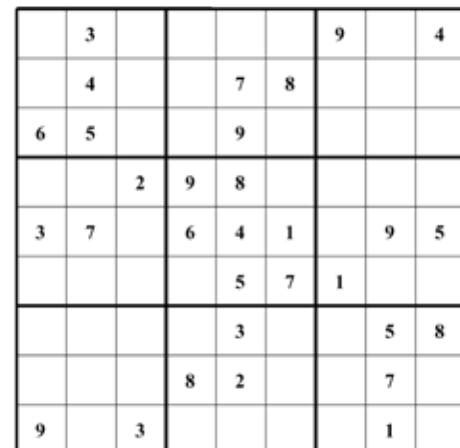
- 65: 2016 host of international sporting event
  - 66: Greek architect, designed Hagia Sophia and compiled Archimedes work
  - 69: Soup and princess and snap
  - 70: First 24-hour news channel in the world
  - 71: Simple dog trick
  - 72: What's up, \_\_\_?
  - 73: On a couch, perhaps
  - 74: Stone or bronze, perhaps
  - 75: Department, resides on 3rd floor E5 (abbr)
  - 76: Edmonton transit system (abbr)
  - 77: Open-source data standard for the storage of biology microscopy data (abbr)
- DOWN**
- 1: Refresher
  - 2: Open source implementation of H.323 VoIP protocol
  - 3: The spiritual head of Tibetan Buddhism
  - 4: Slippery material sometimes found on pans
  - 5: Silent communication language (abbr)
  - 6: Person who proposed the civilization in 26 Across
  - 7: To obtain information from internet users, generally with a fake bait
  - 8: Game series of historic empires (abbr)
  - 9: Janet Lynn's, The Belmont, and Thai, for example
  - 10: Inappropriately-named hot stew dish
  - 11: The purpose of the US Blackbird aircraft
  - 12: Of string, perhaps
  - 19: Extra special individual
  - 22: Famous Egyptian ruler shortly before the takeover by the Roman Empire
  - 25: Egyptian ruler who emphasized worship on the Aten over traditional polytheistic beliefs
  - 27: The type of cables used to carry uncompressed digital video within television facilities (abbr)
  - 28: Top level domain of universities, colleges
  - 31: Neither here \_\_\_ there
  - 32: Double-bonded carbon atoms (suffix)
  - 33: "\_\_\_ Forrest! \_\_\_" (1 wd, used twice)
  - 35: With eyeglasses, perhaps
  - 36: Educational institution in Edmonton run by First Nation groups
  - 37: \_\_\_ Island alleged treasure-hiding island in Nova Scotia
  - 39: Before cooking
  - 40: International Science Olympiad (abbr)
  - 41: American sketch show by Lorne Michaels
  - 46: The big apple (abbr)
  - 47: Carnal-activity vectored disease
  - 50: Prejudice based on ones race

# Sudoku

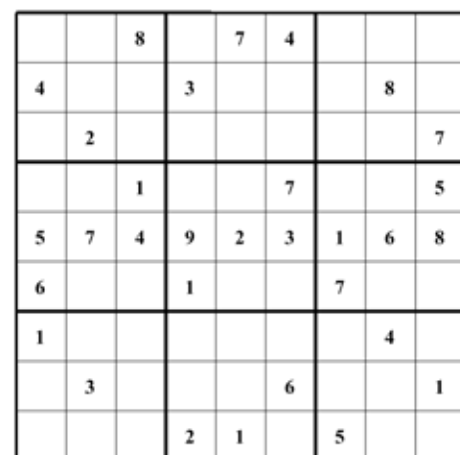
#2015-13

**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](http://iwarrior.uwaterloo.ca/distractions).

- 52: Central-American pyramid builders
- 53: Around, temporally
- 54: 15 y.o. US table tennis champion Ariel
- 55: United (2 wds)
- 56: Overused and unoriginal
- 57: Task performed by a bomb squad (abbr)
- 58: State with capital Providence
- 59: Large LEGO
- 60: "Say Just Enough to make me not go!" Mariana's Trench song
- 61: Belgian violinist "The King of the Violin"
- 67: Intergrated circuit chip that stores security information for phones
- 68: Decay

**THE IRON INQUISITION**  
Leah Kristufek, 4A Chemical

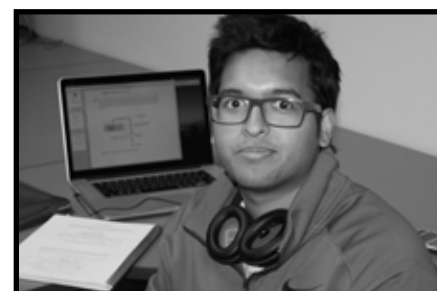
## "Who would be a better President than Donald Trump?"



*"Eddie Dupont. That guy is magical."*  
Don Tu, 2B Chemical



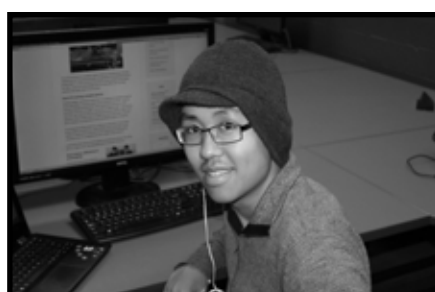
*"Kevin Hart."*  
Muhammad Bajwa, 3B Chemical



*"Kanye West."*  
Ashwin Alinkil, 4A Mechanical



*"Ashwin Alinkil."*  
Omar Khan, 2A Mechanical



*"Al Gore."*  
Albie Chan, 1A Nanotechnology



*"Kanye West."*  
Baber Siddiqui, 2A Mechanical