

Thanks Obama!



NDU Audio Visual via Wikimedia Commons

US President Barack Obama Speaking in 2015



On January 20th, a truly remarkable man is leaving the White House. An unlikely success, who went from being an unknown coloured senator in Illinois to the most powerful man in the world. The face of a generation, who inspired both hope and dread, both laughter and bawling. Perhaps at the close of this chapter of history, he will encourage nostalgia as well. As a frightening new year begins, there is something we need to say: thank you, President Barack Hussein Obama.

Thanks Obama, for showing the world that a black man could be the President of the United States of America. He was brought to office with great fanfare, many thinking he heralded a new era of acceptance in the United States. But he paid a price for his skin color. Some in the right wing simply couldn't stand having an African-American president. Still others thought that too many liberals supported him simply for being black. Racial tension was a major theme during his presidency, as the police became more militarized, hidden biases came to light, and people realized that even the President couldn't really "solve" racism. Yet for those who feel that angry, visible activism is better than silent, voiceless oppression, the Obama Presidency was something of a step forward.

Thanks Obama, for spearheading stimulus spending to support the economy of the US and the world. The American Recovery and Reinvestment Act and the bailouts for car companies kept millions of jobs operational in the darkness of economic depression. These were paid for with taxpayer dollars, and fiercely opposed at the time. Many were worried that the car companies would become a permanent drain on public funds. Luckily that did not occur and General Motors eventually returned to profitability in 2012.

Thanks Obama, for supporting the

rights of the oppressed, particularly in the LGBT+ community. During Obama's administration, the Don't Ask Don't Tell policy was repealed, allowing gays, lesbians and bisexuals to serve openly in the military. Additionally, the Matthew Shepard and James Byrd Jr. Hate Crimes Prevention Act expanded hate crime law to extend to crimes motivated by the victim's sexual orientation, gender identity, and disabilities. To be fair, most of the legal action was done in the Senate and the House of Representatives. Indeed the Matthew Shepard Act was initially proposed back in 2001 by Representative John Conyers, and reintroduced many other times over the years. The legal and public support of the President is an important factor though: the Shepard act failed in 2007 largely because of insistence from the White House that it was unnecessary, and the threat of President Bush vetoing the bill.

Thanks Obama, for making the Paris Agreement on climate change possible. During the Paris Agreement, 195 nations committed themselves to lowering greenhouse gas emissions. Of course, 195 Luxembourgs could not slow down climate change. One of the crucial factors making this worthwhile was a stringent set of climate change policies in the United States designed to cut down the use of coal-fired power plants. These policies were of course enacted by Barack Obama. It takes two to tango: Chinese President Xi Jinping was also pursuing domestic coal-cutting policies due to criticism in China over air pollution. With the world's most prolific polluters on board, global consensus on climate change entered the realm of possibility. According to the UN Secretary General of the time, Ban Ki-moon "For the first time, we have a truly universal agreement on climate change, one of the most crucial problems on earth."

Thanks Obama, for restoring US-Cuba and US-Iran diplomacy. Obviously these countries do not have the most savory regimes. But as Obama said all the way back in 2007, "The notion that somehow not talking to countries is punishment to them ... is ridiculous." Obama recognized

that diplomacy is not a sign of weakness or submission. It is unclear that the Iranian government will continue avoiding the development of nuclear weapons, or that America will avoid laying down sanctions of Iran. What is clear is that Iran's "break-out time" to construct a nuclear weapon extended from a few months to an entire year.

Thanks Obama, for improving health insurance for millions of Americans through the Patient Protection and Affordable Care Act, more commonly called Obamacare. Getting it passed required moving heaven, earth and least mobile of all the Senate. The deployment and assistance to those with existing health care insurance were also botched. A sage journalistic idiom states that "If it bleeds it leads": we have spent years upon years hearing of Obamacare's failures. Yet it is important to note the benefits it has brought as well. From 2010 to 2013, there were 1.3 million fewer patient-related incidents in hospitals and tens of thousands fewer deaths compared to the previous three years. The Affordable Care Act heavily improved the cooperation between hospitals and health-care coverage for patients that made this possible.

Thanks Obama, for eliminating one of the great threats to world peace: the head of Al-Qaeda, Osama Bin Laden. Obama's contributions to the War on Terror were some of the most controversial aspects of his foreign policy. Obama had unparalleled power to assassinate anyone on the planet with his administration's massive drone fleet and stealthy Navy SEALs. Under his command, the US Government curtailed freedoms, gathered vast amounts of personal information and broke international laws in their hunt for terrorists. Obama's (fulfilled) promise to get American troops out of Iraq had major public support in 2011, but set the stage for ISIL to capture large swathes of land, enslave local populations, and kill people in droves. That said, the chances of getting Bin Laden into a proper trial were approximately nil. Furthermore, could you imagine a world where Bin Laden and ISIL coexisted, sup-

porting each other's massacres, and commenting on each other's ideologies? There have been, and will be, many terrible downsides of this hunt for terrorists, but the death of one Osama Bin Laden is not one of them.

There is no way to really do eight years of politics justice in a single article. Much of the good and the bad been left out of this article. There are many promises unkept, many backfired policies, and many initiatives that only partially completed. Entire books have been written about each of the issues in this article. Like the Presidents before him, Obama will eventually have an entire library in his name (assuming, of course, we survive long enough to see it built). Perhaps most importantly, Obama's failure to secure bipartisan agreements threaten to wreck his legacy: with Republicans holding the House, the Senate and the Presidency large sections of Obama's legacy may be teared down in coming years.

There is one other thing to thank Obama for beyond the nitty-gritty of politics. There is the question of temperament. Obama has always been cool in the face of adversity. His critics would say he was cold in cutting down his enemies. After a campaign spreading hope for a bright future, Obama spent 8 years watching the hopes and future of his nation filibustered, blocked, corrupted, critiqued and thrown in the garbage. Obama took it all in his stride, never quitting, never falling into vulgarity and only rarely resorting to childish insults. It is something the world took for granted. Yet as we spend the next few years listening to the bellicose rhetoric of Obama's successor, we may start to miss Obama's personality as well as his policy.

He wasn't perfect. How can a mere human be, with a hostile world to attend to? Despite massive barriers he still managed to get some things done. He created a few problems, but only in service of solving the ones of his day. Thanks Obama. I hope you can at long last stretch your legs, trade your suits for T-shirts, and take a long vacation.

Letter from the Editor

My Journey and Struggles With Co-op



DONOVAN MAUDSLEY
EDITOR-IN-CHIEF

Hello again, and welcome to the Winter 2017 edition of the *Iron Warrior*. I know that the Winter term can be a little depressing; you can go a long time without seeing the Sun, everything is frozen over, and just as the weather starts getting better, Nesting Season begins. I assure you, though, that the time will fly by and soon we'll be playing softball on the V1 Green again.

I'm very excited to be the Editor-In-Chief this term, even though I've heard that 3B Mechanical is cruel and unforgiving. Even though we're only a few weeks into the term, I've had a lot of fun sitting in the editor's chair. I have excellent staff members all around me: Bryan, Hasan and Ratan all helped immensely with this issue, and I'm excited to work with the new staff writers. I also want to send a quick shout out to the B-Soc Exec team for crushing their first updates.

I want to take a second to talk about my newspaper history. Two years ago, the first issue of the Winter 2015 paper contained my first published article, a recap of the Super Bowl game between the Seattle Seahawks and the New England Patriots (that final play, my God). My first draft of this article was over 2000 words long, and had to be almost entirely re-written by more experienced writers. My articles and columns have come a long way since then. I've written about antibiotics, mass extinctions, Netflix Original Series, and elections in 3 different countries. Today I'm the one doing the editing for new writers rather than being edited. I even drew a comic once.

I'm very proud of this issue of the *Iron Warrior*. I think it's one of the better ones in recent memory. One of my priorities as the Editor-In-Chief is to devote more time and attention to Waterloo and specifically Waterloo Engineering. To that end, I've introduced a new feature by Gabrielle Klemt this issue focusing on Engineering Society events. If you're at an event in the future and you see Gabrielle, be sure to say hi! We've also got a special piece on what going on an engineering exchange is like by my close friend Tristan Kuehn. Tristan is taking his 3B term at the Braunschweig University of Technology in Germany, and is (SPOILER ALERT) enjoying it.

On top of our new features, many of the columns you know and love are back! Elizabeth is back to analyse the Raptors in the *Benchmark Report*. Bryan takes up the torch from Cameron in his cooking column *Half-Baked*. Tiffany tells us all about Andrew Lloyd Weber in *Discover Broadway*. Caitlin once again entrances us with *5 Things You Don't Want To Know* about mad science. Ratan also tells us all about the strange and fantastical podcast Hello From the Magic Tavern in *Ra(Tan) Lines*. Somewhat funny

story, Ratan was sitting on the fence last term about writing a column until we came up with that name. Last but definitely not least, crossword lovers can rejoice because Cameron has returned with his Social Medias themed *Iron Crossword*!

I wanted to take the time in my editorial to talk to the 1Bs who are going out on co-op for the first time. The biggest piece of advice I can give you is not to panic about finding a placement. It's January. The Spring term doesn't start until May, so you've got plenty of time. I went out for my first co-op term after 1A (Fall '13 seems so long ago), and I was just as stressed as you are about finding a placement. I worried and stressed and worried some more, but really that didn't help me. During Hell Week I spent way more time Jobmining than I spent sleeping. I think I must have put together at least 60 individualized cover letters. I didn't even get an interview until two weeks into the continuous round, and I bombed it. At this point my roommate Tristan had already had a job lined up for a while. He was focusing on finding an apartment in Ottawa and I was still scrambling. I think I had two more interviews, and as I finished them I became more and more confident. Exams were right around the corner and I was beginning to come to grips with the possibility of going home for the co-op term when I got one more interview. It was scheduled late in the day on the last day of interviews. I prepared as well I could, then went in and told them exactly why I was a great fit for the job. I realized as I left that I was the last student being interviewed in the building that year. I got the job and spent the Winter 2014 term in Richmond Hill.

I realized after a few interviews that really they're just conversations. They can be nerve wracking, but I just come back to my high school biology teacher's motto: "Why be stressed when you can be not stressed". The first time I heard him say it I thought it was just gibberish, but a few years later I've made sense of it. Why should you let yourself worry for nothing? If you're calm and collected you're going to have a better conversation, and a better interview. They want to hire you, or else they wouldn't have scheduled an interview with you. If you take a few breaths and collect your thoughts you'll do terrific. Even if you don't do great though, don't worry.

I missed a co-op term back in Spring 2015, and had an absolute blast. I was interviewing for my third co-op placement when I hit a roadblock. I did my first two in manufacturing-heavy environments. While I enjoyed the terms as a whole, I didn't find the work very enjoyable. I had resolved to try and find a position in design, but I just wasn't getting interviews. Over that term I had three interviews and none of them worked out. I ended up officially taking the term off. I worked three part time jobs: teaching guitar, working as a security guard, and doing organizational work at my stepfather's jewelry store. In addition to those jobs I read

a few books and articles on design practices and general engineering, and played a whole lot of Xbox. I spent a lot of time with my family, and friends from high school that I hadn't seen much in years. I also got paid to go to a few concerts that I would have paid to see. On the whole I had a really great term.

A lot of people in my class were in the same place that I was that term. A lot of the upper-year positions went to more experienced students, while the entry-level positions went to first years. I have a friend that worked at a lumber yard that term, and another who went out to British Columbia to mountain bike with his brother. My class's employment rate that term was laughably low, but none of us really worried about it. We just burned the term and moved forward as best we could.

When I got back in the Fall term that year, I doubled down on looking for a design job, only applying to jobs which explicitly stated they had design work to be done. I applied a fresh attitude to my job search, and before long I had one of the most ridiculous days in the history of the University of Waterloo. It was only fitting that it also happened during Hell Week.

I kicked off the morning with back-to-back half-hour long interviews, followed by a ten minute break. During this "break" though I had to book it from the Tatham Center to E5 for my Thermodynamics I midterm (which I bombed, but that's another story). I stayed for the whole exam, and then had ten minutes to book it right back to the Tatham Center for my third half-hour long interview of the day. I made it with a minute to spare and went to splash some cold water in my half glazed-over eyes before my interview. I told the two interviewers, one a Waterloo Mechatronics alumni and the other an engineer from Carleton, about my day thus far and they both laughed. We traded stories about undergrad before getting into my qualifications at all. I ended up getting the offer for that job, and found myself doing machine design work for a die making company in Kitchener. I learned about engineering design and ping pong at that placement.

I guess what I'm trying to say with my overly-long summary of my co-op experience is that you have to try and take it all in stride. You might not hear anything for two months and then end up with four interviews in a week. Sometimes that's just how it goes. Also you don't have to worry about the horror that was Jobmine. That website crashed more often than an amateur demolition derby-ist. On my most recent co-op term my boss told me about his co-op experience. He was a member of the first class to use Jobmine. Only time will tell how much better Waterloo Works is, but I hope for your sakes it is terrific.

Well, that does it for my first editorial. If you have a co-op hunting experience you want to share, disagree with anything we publish, or just want to rant at me for whatever reason, I cordially invite you to email me at iwarrior@uwaterloo.ca. Please remember to tip the carrier owl.

THE IRON WARRIOR

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Donald Trump's Cabinet Picks

Controversy Never Sleeps



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With Trump's inauguration only days away, all eyes are focusing on the President-elect and his incoming staff. During his campaign, Trump argued that his lack of political experience was outweighed by his business and managerial skills; he might not be an expert, but he would hire the right people.

At this point, most of his choices have been announced, and several of them are highly controversial. Here's a brief guide to the most high-profile cabinet picks, and why many of them are regarded with suspicion by many people. Note that the different sides of these controversies are held by different people and groups.

Rex Tillerson

Soon to be: Secretary of State

Who is he? CEO of ExxonMobil, a multinational oil and gas company.

The controversy: Tillerson has no experience in diplomacy, and much like Trump, his vast business dealings pose a strong risk of conflict of interest while he occupies such a high-level government position. Tillerson is also friendly with Russian President Vladimir Putin, having done a great deal of business in Russia over the years, and has in fact been awarded the Order of Friendship by the Russian government. This makes many suspicious that he will use his new position to remove sanctions against Russia that were put in place over Russia's 2014 annexation of Crimea. In fact, there are reports of ExxonMobil using subsidiary companies to circumvent various sanctions against Russia, Iran, Syria, and the Sudan during Tillerson's time as CEO. Given this behaviour, it is feared that Tillerson will put business interests before national ones during his time in office.

Steve Bannon

Soon to be: Chief Strategist and Senior Adviser

Who is he? Former chairman of Breitbart News, and also former Goldman Sachs employee, Bannon was CEO of the Trump campaign towards the end of the election.

The controversy: Bannon is arguably the most controversial figure in Trump's cabinet. Breitbart News is a famously far-right media outlet that Bannon himself has called "a platform for the alt-right;" alt-right is infamously a euphemism for white supremacy. Breitbart News is also notorious for sexism, running headlines that claim that birth control makes women "unattractive and crazy" or that women "suck at interviews". Bannon is also famous for making flamboyant and controversial statements, such as claiming that he wants to destroy the "establishment", or saying that Silicon Valley has too many Asian CEOs. Bannon was also accused by his ex-wife of domestic abuse and anti-Semitism. All of these colourful controversies almost overshadow the fact that he formerly worked for Goldman Sachs, an institution that Trump demonized during his presidential campaign.

Steve Mnuchin

Soon to be: Secretary of the Treasury

Who is he? Financier, and former Goldman Sachs partner.

The controversy: Not only does his choice of a former Goldman Sachs partner contrast with Trump's anti-bank and particularly anti-Goldman Sachs campaign

rhetoric, but Mnuchin's company has been accused of aggressively and inappropriately foreclosing on numerous homeowners. Also, Mnuchin has no experience in government, a recurring theme in Trump's cabinet.

Jeff Sessions

Soon to be: Attorney General

Who is he? Alabama Republican Senator

The controversy: Sessions has been accused of holding racist views and making bigoted comments against African-Americans. In fact, he was rejected from a federal district court judge appointment in 1980 when colleagues testified that he had made several racist comments, and alleged that he had called the NAACP "Communist-inspired" and "un-American". Sessions denies these charges, claiming that they are the result of stereotypes about white Southerners. Sessions also takes a hard stance against immigration, and supports Trump's controversial proposal for a southern border wall.

Rick Perry

Soon to be: Secretary of Energy

Who is he? Former governor of Texas, previously agricultural commissioner. Perry was an early presidential candidate, but dropped out in the primaries.

The controversy: Not only does he have little experience or expertise in the energy sector, but he has stated on the record - during a presidential debate no less - that he would like to eliminate the Department of Energy, which he is now slated to head. (In fact, during that debate, he infamously forgot the name of the department; whether he is qualified to have any role in it whatsoever is seriously questionable.) Interestingly, he was formerly an outspoken critic of President-elect Trump.

James Mattis

Soon to be: Secretary of Defense

Who is he? Retired United States Marine Corps general.

The controversy: While an accomplished and respected military leader, Mattis is famous for his aggressive stance on Islam. He has stated that "political Islam" is a threat to the United States, and has called Iran "the single most enduring threat to stability and peace in the Middle East." He has also made flippant statements about it being "a hell of a lot of fun" to shoot militants, leading many to see him as a warhawk. As Trump stated in his campaign that he opposed America's involvement in wars in the Middle East, it is unclear what will come of his appointing a hardliner like Mattis. On the other hand, Mattis does not oppose the recent Iran nuclear deal, although Trump has strongly criticized it, calling it a "terrible deal" and vowing to get rid of it as soon as possible. Thus, Mattis has his critics both among Trump supporters and opponents.

Mattis' appointment will also require special legislation to be passed by Congress, as he has been on active duty in the last several years, which currently violates federal laws for Secretary of Defense appointees.

Elaine Chao

Soon to be: Secretary of Transportation

Who is she? Former Secretary of Labor, director of the Peace Corps, and deputy transportation secretary, Chao is married to Senate Majority Leader Mitch McConnell.

The controversy: There isn't much of one; Chao definitely has the requisite experience for Secretary of Transportation. Chao is also a woman, and an immigrant, both groups that Trump has been accused

of bigotry against.

Betsy DeVos

Soon to be: Secretary of Education

Who is she? Businesswoman and chair of the Windquest Group, a clean-energy corporation.

The controversy: DeVos is a longtime advocate of charter schools and supports funding them over public schools. Many public-school officials and teachers' unionists fear that her appointment will cause harm to the public education system. Furthermore, DeVos and her husband are billionaires and Republican fundraisers and donors, which causes some to suspect that her appointment is more a reward for her financial support than a deserved one.

David Shulkin

Soon to be: Secretary of Veterans Affairs

Who is he? The current Under Secretary for Health in the Veterans Affairs office

The controversy: While the Secretary of Veterans Affairs is normally a veteran, Shulkin is not. However, Shulkin is one of the least controversial and most traditionally qualified appointees in Trump's cabinet.

Tom Price

Soon to be: Secretary of Health and Human Services

Who is he? Republican congressman from Georgia, and also a former orthopedic surgeon.

The controversy: Price supports repealing the Affordable Care Act (commonly known as Obamacare), which is in line with Trump's and the Republican Party's stance, though a large national controversy. Price is also a member of the conservative Tea Party caucus, supports defunding Planned Parenthood, and is very publicly opposed to same-sex marriage.

Andrew Puzder

Soon to be: Secretary of Labour

Who is he? CEO of CKE Restaurants Holdings, a large parent company that owns several fast-food chains.

The controversy: Puzder is against raising the federal minimum wage, which is a highly polarized issue. Democrats want to raise the minimum wage from \$7.25 to \$15. This is not a controversy exclusive to Puzder, but a larger national debate mainly split on partisan lines.

John Kelly

Soon to be: Secretary of Homeland Security

Who is he? A retired United States Marine Corps general, and former commander of the United States Southern Command.

The controversy: Gen. Kelly is one of the less controversial figures in Trump's cabinet. His comments regarding Mexico have been more moderate than Trump's, and he certainly has the relevant experience for the job.

Ben Carson

Soon to be: Secretary of Housing and Urban Development

Who is he? Famed neurosurgeon, writer, and politician

The controversy: Carson has no background in the public sector and even expressed reluctance to accept a cabinet position based on his lack of experience (notwithstanding the fact that he ran for President last year).

Ryan Zinke

Soon to be: Secretary of the Interior

Who is he? Republican House of Representatives member, and former Navy SEAL.

The controversy: Zinke supports mining and oil drilling on public land, making him unpopular with environmental groups. Even more worryingly, he has expressed doubts about climate change.

Wilbur Ross

Soon to be: Commerce Secretary

Who is he? Businessman and investor.

The controversy: Ross has no government experience, and the fact that he is a billionaire concerns many on the left who worry that the many wealthy cabinet appointees will make decisions that benefit the rich at the expense of the underprivileged. However, Ross is not particularly controversial personally.

Reince Priebus

Soon to be: White House Chief of Staff

Who is he? Chairman of the Republican National Committee.

The controversy: Priebus, as a senior Republican, is the most "normal" appointment and not particularly controversial compared to other cabinet members. However, given Trump's calls to "drain the swamp" and rhetoric against Washington insiders, Priebus is not what Trump's strongest supporters called for.

Jared Kushner

Soon to be: Senior Adviser to the President.

Who is he? CEO of Kushner Companies, a real-estate firm, and Trump's son-in-law as the husband of Ivanka Trump.

The controversy: Kushner has no political experience and is hardly "senior" at 35. Furthermore, if he is appointed to an official position, some argue that it would be a violation of nepotism laws

Scott Pruitt

Soon to be: Head of the Environmental Protection Agency

Who is he? Attorney General of Oklahoma

The controversy: Not only is Pruitt a climate change denier, but he is currently involved in a lawsuit suing the EPA in a bid to force them to remove various regulations. It is not even the first time he has sued the agency he will now lead.

Gary Cohn

Soon to be: National Economic Council Director

Who is he? President and COO of finance giant Goldman Sachs.

The controversy: Trump has repeatedly criticized both Goldman Sachs for exerting undue influence over politicians through donations, and politicians, most notably Ted Cruz and Hillary Clinton, for being influenced by Goldman Sachs. This was a significant piece of campaign rhetoric, and Trump's choice of multiple former or current Goldman Sachs high-ups as members of his cabinet has disappointed and angered many of his voters.

Linda McMahon

Soon to be: Head of the Small Business Administration

Who is she? Co-founder and CEO of World Wrestling Entertainment, Inc.

The controversy: Like several of his other cabinet picks, McMahon has donated millions of dollars to Trump's campaign and his foundation, bringing accusations that he is giving cabinet positions as a reward for donations and not on the basis of merit.

Carrie Fisher and Debbie Reynolds

World Mourns Loss of Superstar Family



TAHREEM FAROOQI
1B PLANNING

December 27, 2016 marks the death of iconic Star Wars actress Carrie Fisher, and only 24 hours proceeding that date, marks the death of her mother and actress Debbie Reynolds. The death of the two stars marks an unfortunate end to an unfortunate year. In their stead, they leave incredible legacies, an ending to iconic roles and characters, and an upcoming documentary based on their lives' tales.

Carrie Fisher leaves behind the iconic role of Princess, and then General, Leia of the Star Wars series. This character being strong in attribute, matches that of the actress itself. The actress throughout her life had gone through a series of challenges. Dealing with the major issue of bipolar disorder, the actress led a difficult life of low self-confidence and substance abuse. Although, while overcoming these challenges, Carrie Fisher proved to be as strong, if not stronger, than the description of her role entails. Eventually overcoming the difficulty of substance abuse, she became an overwhelmingly huge influence in the issue of feminism and bipolar disorder. Her personal life is as impressive and expansive as her professional life. Other than her iconic Star Wars role, Fisher has had other major impressions in the entertainment business. Being the writer of the play *Wishful Drinking*, as well as trying her hand at script-writing. Her other talent includes novel writing being the au-

thor of the famous novel, and then film adaptation, *Postcards from the Edge*. In the years leading up to her death, Carrie Fisher reprised the role of Princess/General Leia in the Star Wars movies franchise *Star Wars: A Force Awakens* alongside her on and off screen lover Harrison Ford. Along with the movie came a recently known scandal between the two stars, them having had a three month affair during the filming of *Star Wars*.

Speaking on her death, the Star Wars actor stated "Carrie was one-of-a-kind... brilliant, original. Funny and emotionally fearless... he lived her life, bravely... My thoughts are with her daughter

Billie, her mother Debbie, her brother Todd, and her many friends. We will all miss her."

Despite the ending romance, Harrison Ford also mourns with millions of others over the loss of a dear and talented friend.

As shocking as the reveal of the affair was, the immediate death of mother Debbie Reynolds, proved to be a bigger, more devastating, surprise. The equally talented Debbie Reynolds passed away December 28, 2016. This actress leaves behind a legacy of roles in the movie space, as well as on Broadway. On the movie scene, Debby Reynolds was nominated for an Oscar in 1965 for her

leading role in the movie "The Unsinkable Molly Brown". On Broadway, the actress starred in the musical *Irene* in 1973, and was eventually nominated for a Tony award.

The success of the two is once again being celebrated in the form of a documentary called "Bright Lights: Starring Carrie Fisher and Debbie Reynolds". The documentary follows the two and their close relationship with one another. The documentary has already reached a great amount of success reaching a score of 100% on Rotten Tomatoes, mainly due to the insight of the incredible relationship between the legendary actresses, both of whom will be dearly missed.



Gage Skidmore via Wikimedia Commons

Carrie Fisher at the 2015 San Diego Comic Con

ION LRT Update Construction 90% Complete



GABRIELLE KLEMT
2A GEOLOGICAL

As we all are painfully aware, ION has now been under construction for some time. Whether it's ancient roads of archeological significance or delays in car production, here we are in a new

year still without the ION light rail line. Way back in May 2016, Bombardier pinky-promised that we'd get the trains by 2018 and that Waterloo's rail service would be up-and-running by early 2018. So, now with just a year left on the clock, what's happening?

Let's start off with the closing of closures. If you've spent much time in Waterloo over the last year, you'll be aware that Uptown has been quite

seriously "rewired" and much of the street around the downtown area was totally torn up, rerouting buses, cars, bikes, and foot traffic. I am glad to say that this is now at an end and construction has moved on to the LAST 10%.

What have they been doing since construction started at (what feels like) the beginning of time? Well, according to ION's update, they've laid down 56

km of piping, 34 km of LRT track, and have put in about 68% of the poles, which will provide electric power to the trains. Apparently, all of this was part of Stage 1, and as we entered 2017, we also entered Stage 2, which I think makes the whole thing sound a lot less muddy and dull and a lot more like an adventure game!

What's Stage 2? According to ION, Stage 2 will involve converting the rapid transit bus service between Kitchener and Cambridge to LRT. This is good news all around, unless you commute from Cambridge every day, which I hope you are not doing as a student! It also means easier access to those reclusive Architecture students—who knows, maybe they'll actually come to some of our events now! Ahaha, who am I kidding, they don't come to our events because they don't come to any events, we can't change that! (Please don't come for me, Architecture students. My dad was an architect, so I understand you.)

What else is new from ION? WINTER CARE PACKAGES—that's what's new!! Now I don't know about you, but as a student, I am all about free stuff, and ION just made my new year so much better by offering ION/GRT-themed hats, mitts, and mugs to random strangers waiting for the bus! If anyone is not about free stuff and happens to get this, I'll accept your free mug—no questions asked!

There is also a fun before/after of the Conestoga ION stop online, so get ready to start making your commute by Light Rail, people—the change is coming!

WIN CASH EVERY WEDNESDAY

LE SHIN SWAH TABLE TENNIS LEAGUE

Join our Le Shin Swah Table Tennis and Foosball League.
Register at www.leshinswah.com

Point Vs. Counterpoint

Was The Force Awakens Better Than Rogue One: A Star Wars Story?

POINT 

ALEX PEZZUTTO
1B NANOTECHNOLOGY

2016 was a polarizing time. Now, I'm not naming any names, but it's safe to say a particularly orange-faced man and his numerous shenanigans pretty much owned the year. But amidst the political hysteria, one can find solace in the resurgence of Star Wars (unless if you're a Trekkie, in which case, go away. We don't want your kind here). With two new films meeting tremendous success in the box office, Disney has thankfully resuscitated a series many have missed dearly. The first of the two, the Force Awakens, takes place after the events of the original trilogy, where the Empire rules the galaxy with an iron fist, and it's up to the Rebel Alliance to stop them. On the other hand, the Rouge One takes place in the events before the original trilogy, where the Empire rules the galaxy with an iron fist, and it's up to the Rebel Alliance to stop them. With such completely different movies, one has to wonder which of the two is better. The metrics I will use to compare the two will be character development, plot development, antagonists, and of course, lightsaber badassery! Warning, there will be spoilers.

The Force Awakens introduces us to Rey and Finn; one a solitary young woman who spends her life scrapping by scavenging ship wreckages from the previous era, and another is a rogue stormtrooper trying to help the Rebels defeat the evil Empire. The two protagonists play off each other very well, holding their own with the charismatic icons Han Solo and Chewbacca. Together the quartet added an enjoyable mix of humour and excitement. On the other hand, Rogue One failed to make me remember any of its characters' names. I had to Google their names to write this analysis, because, well, referring to the main characters as "the robot", "the main girl", "the main guy", "the asian dude", and "the asian dude's friend" wouldn't be too appropriate. I get it was a hard time for people when the Empire was ruling the galaxy, but watching a bunch of stoic people grit their teeth while shooting their blasters while giving the occasional speech on hope isn't conducive for creating a memorable cast, and as soon as they all died at the end of the movie, I pretty much shrugged and left my seat. The Force Awakens brings this category home. Now onto the story!

The Force Awakens' plot-line was a very familiar one. There's a difference between nostalgia and plagiarism, and The Force Awakens walked a very fine line between the two throughout its duration. A poverty-stricken, Force-endowed protagonist living in a desert abandoned by their parents? Check. An evil Empire terrorizing the galaxy headed by a cryptic old man in a hologram and his apprentice with a cool mask? Check. A massive planet-killing weapon the bad guys use to keep the galaxy subdued? Check. A cute, lovable droid that holds the key to stopping said super-weapon? Check. In fact, a more appropriate name for the movie could've been Star Wars: A New Hope with Better CGI and a Fancy Lightsaber. However, the dynamics between Rey, Finn, Han, and Chewy gave a refreshing experience to the relived adventure, and there were events in the movie that few could expect, such as the death of a certain

gunslinging smuggler. Unfortunately, Rogue One does suffer from prequelitis. Viewing the movie felt like going through a mental checklist of events you should've predicted from start to finish if you've watched the original movies. Our reluctant hero Jyn joins the Rebels, helps them obtain the plans of the Death Star, and sacrifices her life for the cause in the process. It didn't have me hang off my seat as much as The Force Awakens did, so the Force Awakens wins this category.

The antagonists are also a quintessential aspect of any Star Wars film. If they're not interesting or imposing, the challenges and tension in the story becomes drastically less gripping. Rogue One's main villain is Krennic, who fails to meet the previous two criteria in every sense. He's a cliched power-hungry, arrogant and ill-tempered general who would be better off being featured as a bad guy in Kim Possible than Star Wars itself. As awesome as Vader's cameos were in the movie, they weren't enough to clean my palate of watching that bimbo go on about the Death Star or destroying the Rebels. By contrast, Kylo stole the stage the moment he appeared, killing a man with his freakishly large lightsaber, while being able to freeze a laser bolt in mid-air—now that's the kind of power you'd expect from an actual villain. Given, it was irritating and disappointing when he took off his mask and started throwing tantrums, but overall, he was far better to stomach than Krennic.

Last but not least, we need to discuss the presence of lightsabers, because what's a Star Wars movie without lightsabers? The ending of The Force Awakens, features a lightsaber battle between Finn, Ren, and Kylo, and it was very annoying to watch. For one, the fights were very amateur, consisting mainly of slashing and stabbing, instead of the fast-paced flurries and acrobatics you'd expect an actual Jedi to fight with. The Force-users in our galaxy far far away continue to suffer from an unfortunate disease of not using the Force against non-Force sensitive opponents (e.g. every duel with Greivous in the prequels). During the fight, Kylo could've just waved his hand and sent Finn flying, but no, he had to engage in a minute-long lightsaber battle that resulted in a singed shoulder. The fight then ends with Rey, the girl who just learned what the Force was 10 minutes ago actual beating a Sith who's trained under Luke Skywalker for years! I don't care how injured Kylo was, that should've been an easy sweep for him! This is an aspect that Rogue One completely nails at the end of the movie, where us viewers bore witness to some classic Vader carnage. There were Force-chokes, slams, and Vader's lightsaber must have gone through 20 different people in like 10 seconds. It was wonderful! Rogue One wins this one hands down.

Final verdict: The Force Awakens takes the crown. Sure, lightsaber battles are cool, but like the Phantom Menace proves, you can't depend on them to carry the movie. That's not to say that Rogue One was a bad movie—I'd say it was okay, and I don't regret spending my parents' money to watch it. But it failed to make me invested in its characters and story as much as The Force Awakens did, which is why it falls short of its predecessor.

BRYAN MAILLOUX
3A MECHATRONICS

It's been just over a year since Star Wars Episode VII: The Force Awakens premiered in theatres, and you can bet that, being the hardcore Star Wars fan that I am, I was there to watch it, along with thralls of others excited to see the next chapter of the Star Wars story revealed. And yet, I left that theatre feeling disappointed about the movie. Not that it was a bad movie at all; it just didn't live up at all to the expectations I had of it.

Contrast that with Star Wars: Rogue One: as excited as I was to go see a new Star Wars movie, I knew virtually nothing about it as I sat down and the movie began, and considering how disappointing TFA was, I didn't expect much from this movie either. And when Rogue One didn't have the typical Star Wars opening crawl, that's when I started thinking to myself, "I have a baaaad feeling about this...". So, after expecting this movie to be the biggest let-down since The Phantom Menace, I was really surprised when Rogue One turned out to be a pretty sweet movie. And by pretty sweet, I mean really damn awesome.

So, what made The Force Awakens disappointing? My biggest problem with it was that it copy-pasted the plot from A New Hope, and plenty of things from the rest of the original Trilogy as well. It's almost as if George Lucas handed J. J. Abrams the job of retconning the original Star Wars movies, and he took it so far that he accidentally made another movie out of it. What are you saying is the same, you may ask? Well, here goes: orphan kid from a desert planet who grows up getting the short end of the stick and ends up becoming the hero? Check. Bleeping cute droid? Check. An evil Empire with a Death Star, a right-hand man who converted to the Dark Side, and a creepy old guy running it? Check. A Rebellion who is hopelessly outclassed in manpower, training and weapons? Check. Mos Eisley Cantina? Check (I don't even remember what that bar where Rey finds Anakin's lightsaber is called, it's still the Cantina to me). Daddy issues? Check. Falling from high places? Check. Stormtroopers who can't hit the broad side of a barn? Check. Death Star trench run? Check. Only one surviving Jedi Master, located on a hidden planet, and who is waiting to teach the one who will bring balance to the Force? Check. In fact, the only characters who I couldn't directly compare to characters in the Original Trilogy were Poe Dameron and Finn. Having the whole story of Episode IV repeat itself may have increased the nostalgic value of TFA, but I thought it only made the movie lose all possible suspense by repeating a story that has already been told.

The other issue I had with The Force Awakens was not being able to feel the struggle of the protagonists and of the Resistance. Poe Dameron practically dances around Imperial fighters

COUNTERPOINT 

in his X-Wing and takes out Starkiller Base with apparent ease. And if Rey can Jedi Mind Trick a Stormtrooper after getting exactly zero minutes of Jedi training, you really don't feel like she's in any danger at all. Rey may be a bad-ass, but where's the excitement when there's no one worthy to fight? I have mixed feelings about Kylo Ren's powers and competence as well: though he stops a blaster bolt in mid-air, which was really damn cool, his portrait as an "emotional teenager" really didn't do him any favours in this movie – he doesn't come close to the pit of evil that is Darth Vader. (Though I'm looking forward to seeing him in action again, now that he has buried his past – or rather thrown it down a really tall shaft – and is fully committed to the Dark Side.) And finally, leaving Captain Phasma in the trash compactor? It might have been funny and nostalgically ironic, but also pretty much wrote the First Order off as total pushovers.

On the flip side, Rogue One did exactly the opposite of The Force Awakens, which made it a movie I would without a doubt watch over and over again. It has a completely different plot from the other movies, and felt about 0% copy-pasted from the plot of A New Hope, despite the fact that director Gareth Edwards used extra footage from ANH directly in Rogue One (if you rewatch the Battle of Scarif sequence, pay attention to Rebel pilots Red Leader and Gold Leader – they're the same as they were in ANH). Having a story arc that doesn't follow the Skywalker bloodline has the nice effect of reminding the audience that yes, there are other people in the galaxy, and yes, they were just as interesting.

And of course, not only did Rogue One feature a new plotline, but it happened to feature a great one. Being a movie that focused on the Rebellion as an organization, I think it did a great job of presenting just how ragtag of a group the Rebellion actually was, their problems in getting anything done as a coherent team, and the sacrifices they made to give Luke a chance of destroying the Death Star. That's not really something you see in the other movies: of all the people who died for the Rebellion in the original trilogy, you don't get to know them long enough to feel like their sacrifice meant something. In Rogue One, on the other hand, you truly feel the wrath and cruelty of the Empire as they not only annihilate all of Rogue One and their reinforcements with a single shot from the Death Star, but also all the Imperial troops who were stationed on Scarif as well. And that final scene with Darth Vader cutting down Rebel troopers as they escape with the Death Star Plans brings to light just how desperate the whole Rebel plan was.

So yeah, I'd take Rogue One over The Force Awakens any day – sounds like we need more standalone Star Wars movies like this one. Though when Episode VIII comes out you can bet I'll be there to watch that too!

Editor's Note:

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

New Year, New Prez

Let's Inspire Change



RACHEL MALEVICH
PRESIDENT

Introductions first! My name is Rachel Malevich, I'm in 3A Chemical Engineering, and I'm the new B-Society President! For the entirety of my first year, I knew nothing about the Engineering Society. You wouldn't expect to hear that from a President, but it's true. I didn't want to get involved in first year because school was (still is) hard. In 2A, I decided I wanted to at least do something, so I ran EngSoc's Resume Critiques, Interview Skills, and the Cover Letter Writing Workshop, not

because I was passionate about EngSoc, but because I saw a need for change. I reflected on my first year, and the times I attended the Resume Critiques, and thought to myself, "yea, I CAN make that better". This passion for change, and my falling in love with the Engineering Society this past year resulted in my Presidency, and I'm the happiest I've ever been. I hope that this reaches those of you who wonder what the benefits are regarding getting involved with the Engineering Society, and that you'll make the effort to attend Council Meetings this term, or to shadow a directorship. It's never too late to get involved and inspire change.

This term is bringing a lot of exciting changes to the Engineering Society.

I've got two large initiatives coming out of my portfolio that I'm really pumped about. The first is EngSoc's partnership with UW MATES (Mentor Assistance through Education and Support), a peer mentorship program for trained engineering students to talk to their peers about mental health related issues and getting adjusted to Waterloo/engineering life. The pilot program is operating with 6 volunteers from engineering and we're hoping to expand in the future. A page for MATES in Engineering under Resources>Mental Health on the EngSoc website is coming soon, so stay tuned! My second big initiative this term is the development of the Professional Skills portfolio offered by EngSoc. This includes technical workshops

with Google, in addition to online resume and cover letter resources. I have two fantastic teams working to put these two initiatives into action!

I will also be addressing some smaller internal items this term, like keeping our Governing Documents updated, developing a new Communications Guidelines for Executive, creating a Document of Stances for the Society, and improving the election voting method in time for the 2017 elections! If you have any questions, I encourage you to email me at president.b@engsoc.uwaterloo.ca, or to stop by the Orifice (CPH 1327) and Society hosted events to chat! Thanks for electing me B-Soc, and I'm excited to create change with all of you!

VPE? VPA? What's the Difference?

AB100: Introduction to Andrew



ANDREW MCBURNEY
VP ACADEMIC

Hey, Engineering faculty (and other people who may be reading this)! My name is Andrew McBurney. I'm a 3A Software Engineering student, and I also happen to be your Vice President Academic (VPA) for the next 12 months. I'm ecstatic to be 'B'-Society's new VPA, and I hope that I can live up to your expectations as an EngSoc executive.

'B'-Society's structure has changed a bit since the last on-stream term, including changes to the Vice President Education (VPE) position. To accommodate for the changes to the position, EngSoc thought it fit to change the name from

'Vice President Education' to 'Vice President Academic' to reflect the edited structure. The VPA portfolio has all the original responsibilities of the VPE. This includes representing and advocating for all undergraduate Engineering students at various faculty, university-wide and co-op related councils. Additionally, the VPA position continues to provide academic resources, such as our online exam bank; services such as Course Critiques and Career Fair are all still under the VPE/VPA portfolio.

What has changed in the structure is that the VPA now has the Student Services Commissioner under its portfolio. This means services, such as Résumé Critiques, Interview Skills Workshop, Jobmine-athon (now Waterloo Works-athon), and technical workshops, such as AutoCAD, Soldering, and LaTeX, are all under the VPA portfolio.

Speaking of services, we have a few upcoming this week! This Tuesday (January 17th) from 5:30 PM to 7:30 PM in RCH 307, we have a Technical Interview Workshop in conjunction with Google. Additionally, we have a Command-Line Editing workshop taking place this Thursday (January 19th) from 7:00 PM to 9:00 PM in MML (CPH 1327). Furthermore, this Friday (January 20th), we will be having the first ever 'Waterloo Works-athon' event from 4:30 PM to 7:30 PM in MML. This event is a continuation of the Jobmine-athon event. We will have a brief 30 minute presentation by a CECA representative at the start of the session, which will highlight some of the differences between Jobmine and Waterloo Works, and some of the key new functionality.

In summary, I'm excited to represent and advocate for you on behalf of the

Engineering Society, and I hope I am able to live up to your expectations. We have some exciting services that will be offered in the near future—so be sure to check them out! If you have any comments, questions, concerns or feedback, please don't hesitate to contact me at vpacademic.b@engsoc.uwaterloo.ca.

Also if you just want to chat about life, school, or The Smashing Pumpkins (seriously), you can probably find me in the Orifice (CPH 1327). Cheers!



Upcoming Events Calendar

Wednesday Jan 18	Thursday Jan 19	Friday Jan 20	Saturday Jan 21	Sunday Jan 22	Monday Jan 23	Tuesday Jan 24	Check out up-to-the-day event postings on the EngSoc website at engsoc.uwaterloo.ca/event-calendar/
EngSoc Council Meeting 5:30PM - 7:30PM	Life Skills Workshop 1 4:30 PM - 6:30PM Command-Line Editing Workshop 7:00PM - 9:00PM	Waterloo Works-athon 4:30PM - 7:00PM		FEDS event: Trip to Blue Mountain 8:00 AM - 8:00PM	EngiQueers 6:00 PM - 9:00PM	Good Fortune Winter 2017 11:30 AM - 2:30PM Personality Dimensions Workshop 4:15PM - 6:45PM De-Stress Events 4:30PM - 7:30PM Board Games 5:30PM - 7:30PM	
Wednesday Jan 25	Thursday Jan 26	Friday Jan 27	Saturday Jan 28	Sunday Jan 29	Monday Jan 30	Tuesday Jan 31	
WiE - Beginner Python Workshop 5:30PM - 7:30PM Coffeeshouse 7:30PM - 10:30PM	P&P Presentations 7:00PM - 10:00PM Information Security Workshop 7:00PM - 9:00PM	Arts - Perler Beads 11:30AM - 2:30PM SCUNT 8:00PM-12:00AM	Hockey Sponsorship 9:30AM - 12:30PM Education Outreach - THEMUSEUM 10:00AM - 4:00PM DnD 12:00PM - 2:00PM	Change for Charity All week until Feb 4th FEDS Event: Trip to Arrowhead Park 8:00AM - 8:00PM	EngiQueers 6:00PM - 9:00PM	De-Stress Events 4:30PM - 7:30PM Board Games 5:30PM - 7:30PM	

What is a VP Communications?

And Other Questions



MELISSA BUCKLEY
VP COMMUNICATIONS

Hi there, reader! I'm Melissa Buckley, the current Vice President Communications for the Waterloo Engineering Society 'B' (which is your Society, if you are on term while you're reading this!). I'm in my 3A term of Chemical Engineering, and I've recently invested in my leather jacket, so you could say I am pretty serious about this Engineering thing now.

The Vice President Communications position came about after the Council restructure last year, and includes much of the former Vice President External

Portfolio. The bulk of my position breaks down into 2 simple categories: Internal Communication and External Representation.

Internal Communication: I oversee all the communications that you receive from EngSoc and try to keep you as updated as possible on events and services from us and our affiliates, as well as the Council low-down. At the end of the day, I want you to receive the EngSoc communications that matter to you in a timely and consistent manner. To do this, I want to go right to the source (that's you!) to know what you like and don't like, and how you want to receive our updates. Please stay tuned for a survey to come out later this term asking just that, and help me to help you to help EngSoc to help you.

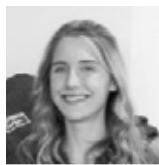
External Representation: This is bringing a delegation to represent the Waterloo Engineering Society 'B' at engineering conferences and exercising Waterloo B's vote at Plenary (fancy council meetings). Did you know, that our Engineering Society is a member of 2 larger engineering student society organizations? They are the Engineering Student Societies' Council of Ontario (ESSCO) and the Canadian Federation of Engineering Students (CFES), and they facilitate the sharing of best practices for engineering schools across the province (ESSCO) and country (CFES)! I promise it's exciting stuff. Conferences are a great way for you to develop professional and leadership skills, network with other students and employers, and bring back ideas to our

Engineering Society!

Ultimately, our executive team and Engineering Society exists to serve you the students, and we want you to hold us accountable. This term, you will be able to see our goals and progress on the board outside the Engineering Society Office (The 'Orifice' - CPH 1307) and hear our Executive updates at Engineering Society meetings, through blog posts and here (thanks, Iron Warrior!). If you have questions for our team, you should be able to find one of us in the Orifice time. If you're looking for me, I'll be there Tuesdays from 12:30pm - 4:30pm and I spend the rest of my time in DWE as Chems do. You can also send me an email any time at vpcomm.b@engsoc.uwaterloo.ca. Looks like that's my word count. Thanks for reading!

VP Student Life Writes an Article

VP Student Life Update Numero Uno



CHELSEA VANDERMEER
VP STUDENT LIFE

Man, I've always wanted to write an article for the Iron Warrior. Nice. *high fives*

People call me Chelsea VanderMeer, and I am a student, and I am alive*, which makes me more or less qualified to be your VP Student Life. That means that I picked a whole bunch of days for events last term in a calendar, and have been helping to plan fun events for YOU (yes, you) throughout the term! I have a lovely, very attractive group of directors who smell nice and will be running the events.

Events and socializing are what have made my experience in engineering go from scary, boring, and lonely... (bleh) to FUN, and exciting! Who knew that there are actually a whole bunch of engineers, and we're all very weird and interesting? Also, it's been scientifically proven that going to events and spicing up your hard engineering life with socials will actually make you more motivated to work on assignments and do better in school!**

Life is good this term because we have events and workshops every week, and they're pretty diverse. Every Tuesday we'll have De-Stress Events

starting at 4:30pm in POETS which includes open discussion, sometimes arts & crafts, and chillin; following that will be open board games from 5:30pm-7:30pm! Bring your friends, bring your acquaintances, bring that random guy you met on the street!*** This week we have our first EngSoc Council meeting (Wednesday Jan 18) at 5:30pm in CPH3607, and there is a 99.1392% chance there will be free food (...the good kind). Come to meet people, vote on motions, and eat food. Engiqueers, coffeehouse, SCUNT, arts... these will also be happening soon, so please check the calendar online (search "Engsoc Calendar") or the big calendar outside the Orifice!

I know that it's winter, but I want to take a moment of your day to discuss crickets, because it is very possible that they are regrettably underrated. There are over 900 different species of crickets, and they can be black, brown, white, and green. Crickets breathe through holes in the sides of their body, which are called spiracles (which rhymes with miracles- coincidence? Nope). Crickets are better at chirping than you are, by the way. They rub their legs together and Beethoven swoons. But wait- the best part about crickets is that they are omnivorous and will feast upon their own kind, such as the weak, dying, and the young, all who are unable to fight for their rights to live. Savage yo. Also,

one time I ate crickets on a taco, and it was pretty decent.

If you want information about upcoming events, how to get involved, more cricket facts, or if you just want to be friends and stuff, email me at vpstudentlife.b@engsoc.uwaterloo.ca, visit me in the Orifice, or find me wherever I may be in life! I'm a rogue in two D&D groups, but despite that, I hope I'm not too hard to find.

*I'm in 3A chem eng, so "alive" is a loose term.

**This fact was made up by yours truly, but it seems pretty legit, anyways.

***At your own risk. Use discretion when inviting random people on streets to things.



Your Engineering Society B Executives

What's In a Name?

How Ten Letters Have Changed Nothing



KATIE ARNOLD
VP OPERATIONS AND FINANCE

Hello! I'm Katie Arnold, the University of Waterloo's first Vice President of Operations and Finance! I am in 2A Mechanical Engineering, and spent last term's co-op in the WEEF TA office as an ME100 TA. I like chocolate milk, grilled cheese and taking long walks to POETS.

The portfolio has changed insignificantly between the VP Finance and the VP Operations and Finance in the transition between executive structure. The new title simply acknowledges the behind-the-scenes work and operations

handled by the VPOF on a regular basis. We do more than just balance the budget.

As VPOF, I manage the daily operations of Novelties and Ridgidware through my teams of directors. I have been blessed with two wonderful groups of people, and with them I will bring in new stock to Novelties in the next four months, as well as develop Ridgidware as we prepare to move it into its new home in E7. Keep an eye out this term for Katie Chin's patch design competition - you could see your design in Novelties!

Teresa Lumini, our POETS Coordinator, and her keyholders are responsible for the movie themes we'll see in our POETS student lounge this term. They will also be playing hosts to exciting

events and OTs; it's never a dull moment in POETS.

It has come to our attention that the Student Deals offered to engineering students through your EngSoc membership are neither well advertised nor have they been verified recently. I have a wonderful set of motivated directors through whom we will develop the advertising for the Student Deals, verify our current deals list is up-to-date, and bring in new deals that our students are interested in.

The Engineering Society offers two main avenues of funding for interested engineering students. The Engineering Capital Improvement Fund is used to fund lasting improvements to student space and services and support the facilities and services of affiliates. We also

have a sponsorship fund which is allocated each term by a sponsorship committee to student teams and groups. The VPOF is responsible for the oversight and management of both these initiatives, and I plan to develop the application process for both of these to improve clarity and communication between the Engineering Society and our students.

I'm excited to work with my team on behalf of Waterloo Engineering students. If you have any suggestions for movies in POETS, an idea for engineering swag or a new Student Deal, or need more information on any of our services, please feel free to email me at vpfinance.b@engsoc.uwaterloo.ca.



Waterloo Works Is Finally Here

The Old King Is Dead, Long Live the King!



ALEXA GRITTANI
3B MECHANICAL

After many delays, WaterlooWorks is here. I have been at this school for almost four years now and I remember hearing conversations about WaterlooWorks replacing JobMine when I was in 1A. Like many other students I had started to think I would never see the new site before I graduated.

It is here just in time for my last round of co-op job hunting. So I went and searched to see the stages that WaterlooWorks has gone through. What I learned was, not only was there a two year delay in 2015, but WaterlooWorks was originally scrapped in early 2011.

So why did it take so long, and what can be expected of the much needed update to JobMine?

It's a good thing the decision to cancel WaterlooWorks did not last. JobMine was not able to handle the volume of users at peak times. This meant long loading times for each new page you opened, and hoping for deadline extensions when you could not get your application in. However, restarting the project may have been just what WaterlooWorks needed. It is better to wait for a functioning system than be given something worse than JobMine.

The University of Waterloo's architecture students have been using WaterlooWorks since spring 2014. Although they have been able to use it successfully, it has taken this long to have it ready for the large number of co-op students at the whole university (maybe they should have just given the task to a few

eager co-op students).

All that testing was not for nothing. There are some desirable new features coming with WaterlooWorks.

For those out of the loop, with the switch to WaterlooWorks, comes the addition of one free 'no rank' per term. Other features coming with WaterlooWorks include specific job locations shown on Google Maps, personalized feedback during rankings, and an option to flag job postings as 'not interested'.

The new 'no rank' feature is the most anticipated. Previously, if you got an offer or were ranked for a job that you had decided you did not want, you could still get matched with it. Even if you ranked that job a nine, (which is the worst you can rank it) there is still a possibility of getting that job. This still applies, except, once a term, you can select the option 'no rank' without going through the sign-off process.

The sign-off process must be done within 24 hours of an interview and is only done in extenuating circumstances. It is a different and much stricter process.

The new 'no rank' feature will be available this term. A reason must be selected from a dropdown list and this reason can be shared with the employer. If one employer gets multiple students submit a 'no rank', hopefully they will take the hint, and improve the position.

However, it may be hard for this to occur as each student only gets one 'no rank' that, therefore, must be used carefully. Which begs the question, is one 'no rank' enough?

During the first round of interviews, all of your rankings are available at once. That way you have the ability to consider and compare the jobs, assum-

ing that you get multiple 'offers' or 'ranks'. For those students who manage to be employed during that first round of interviews, one 'no rank' is probably enough, because students can rank all of the jobs at the same time.

However, during the continuous round, the turnover time between job postings, applications, interviews, and rankings is greatly increased. Meaning that if you are still searching for a job in that time, you are likely to only be ranking one job at a time. Because of this it could be very hard to know when to use that single 'no rank'.

In the continuous round, if you receive an offer for a job you know you don't want, do you use your 'no rank'? Or do you save it? What if the employer didn't rank anyone other than the person they offer the job to?

There should be a limit on the number of 'no rank's a student can use so that it does not get abused. But, it should be more than one. That way students who actually want a job have a better chance of getting it, and employers are not stuck with a student who does not want to be there.

CECA has received a lot of positive feedback about this new system. Being able to say no to a job offer is more realistic to what happens outside of school.

So, there are some new features to look forward to, but there are also some signs that point to WaterlooWorks not being ready yet. The important dates for this term are much later than they usually are. The first rankings do not happen until March. Are they already experiencing difficulties changing over? Or are they allotting extra time for future unexpected technical difficulties?

In a message sent out on Friday the



Waterloo Works Has Finally Been Released

13th, it is explained that there is a new application limit of 75. However, CECA states they don't actually want students to apply to more than 50 job postings. The reason for this discrepancy is that if you want to adjust an application, you have to cancel it and reapply. Cancelling an application does not adjust your limit count, so instead of fixing this they changed the application limit to allow students to cancel applications and still apply to 50.

However, they can't stop someone from applying to 75 jobs if they so desired. So, apply away, but remember there is only one 'no rank'.

Overall, WaterlooWorks appears to be an improvement, but it has yet to be put through the test of its first full university recruiting term.

Still, the co-op process has come a long way from having to print each individual resume and put it physically in a drop-box to apply. Having to pay for nice paper and printing was something that could make students think twice about applying to as many jobs as they possibly could.

Nanotechnology Engineering Student Society

HIRA RAHMAN AND SUMAITA KARIM
1B NANOTECHNOLOGY

If you're a Nano student, you've probably heard something about the up and coming Nanotechnology Engineering Student Society (NESS). However for those of you who have not, Waterloo's own Nanotechnology Engineering undergraduates have initiated a society to give a voice to one of the most unique engineering programs in Canada. Designing and innovating at the molecular and atomic level is no easy task, yet it is one that these students take on with a fresh mindset and positive attitude each and every day. The NESS will serve and represent these nanotechnology engineering students on a larger scale within our diverse community of engineers here at the University of Waterloo. The initiative is supported by the Nanotechnology Engineering Administration, including the Program Director (Dr. Shirley Tang) and Associate Director (Dr. Ariel Chan). The plan for the establishment of NESS was initially presented at the Meet the Profs Pizza Party in the previous term, and the time has now come for the founders (Alicia Veilleux, Austin Boucinha, Jatin Patil and Mayuran Saravanapavanantham) to bring their ideas to life and share their passion for nano by what looks to us like a promising step towards the development of an emerging society.

The purpose of the organization is to foster an alumni network, create an official forum for program-specific con-

cerns and to organize and host outreach events for the students and faculty (including WIN - Waterloo Institute for Nanotechnology) - all things nanotechnology students can really benefit from. By establishing NESS, the founders hope to help the VP Academic of EngSoc to fulfill their duties more easily and to ultimately create a social bridge between the cohorts/graduating classes.

So how is NESS different from EngSoc? NESS will be affiliated with Eng-

Soc as a sub society, structured similarly in terms of governance. The society roles however, will be more program-oriented as NESS is specifically fitted to cater more towards nano students. Additionally, NESS will be able to address pressing, cohort-wide concerns in a more cohesive manner than the current class-rep system.

NESS governance documents will be reviewed and confirmed in late June at the the EngSoc Joint Annual General Meeting (JAGM) but there are a cou-

ple of ways to get involved. For those interested in joining NESS and their mission, plenty of volunteers are needed to help build the society. NESS is also looking for a logo and submissions are due on January 30, 2017 for anyone who is interested. As for executive positions, there will be a formal application process constituting an election in the near future. In the meantime, for anyone with further questions, NESS can be contacted through Jatin Patil via email: jjpatil@uwaterloo.ca

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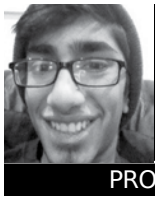
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Prof Personalities

Andrew Milne



HASAN AHMED
1B NANOTECHNOLOGY

PROF PERSONALITIES

Although it's common for undergraduate students to become a professor in their future careers, it's liberating to actually meet one and speak with them, as you're able to connect on a more personal level, especially when they took the same program as you. Professor Andrew Milne of the Mechanical/Mechatronics Engineering department is a University of Waterloo graduate from the Mechanical Engineering program. He recently became a professor at the University after completing his post-doc. This is a professor who really cares about his students, as he has sat in the back of his own class just to ensure that students were able to hear and read his material.

Fortunately, I had a chance to sit down with this lively professor and ask him some questions for this issue of the Iron Warrior.

What courses do you teach?

I teach Heat Transfer (ME353), Fluid Mechanics (ME351), and I will be teaching Intro to Mechanical Engineering (ME100) in the near future.

Favourite course to teach?

Well, I've only taught ME351, and I'm currently teaching 353. I think that's my favourite just because I like heat transfer and how it works.

Why do you want to teach ME100 in the future?

I loved the course when I took it. I also TA'd it, and it's a really awesome course

for first years, so I want to make it great for them. ME100 is the student's first connection with mechanical engineering, and that's why it's really important for it to be the best course for the first years.

How'd you end up as prof?

I had a good idea through my undergrad that I would be a professor. I enjoyed research, and I enjoyed teaching as well. I received my undergraduate degree from Waterloo in Mechanical Engineering in 2005, and went on to do a Masters and PhD at University of Alberta, as well as a post-doc at MIT.

My master's degree was related to how engineered surfaces are wetted by things other than water. Similar to superhydrophobic surfaces, but what if another liquid, like oil, was put onto the material?

My PhD was similar in that respect. I studied how drops behaved on engineered surfaces depending on airflow. So let's examine the hood of your car. When water drops on it, what happens? Will it blow off? Stick? Are you able to tune that? Do you really need a windshield wiper? Also think of jet engines that accumulate water droplets. Can you tune the coating of the jet engine so the water drops off before it freezes and damages the engine?

After my post-doc, I still enjoyed teaching and research, so I took an electorship here in Waterloo, and here I am.

Favourite part of being a professor?

Helping students learn. You can't force it, but you can help. When the light goes on for the student, that's when they know it, and understand it well.

Hardest part?

Helping students to understand. It's not an easy job. We teach a lot of hard con-

cepts, ask students to take a lot of courses, and do things outside of courses. They're hard to understand them in the first place, but even harder when you're extremely busy. Helping them understand and build it in their head when they've got the rest of that going on is very difficult.

Teaching philosophy?

Everything comes from the concepts; from the core basics. I'm a pretty dull lecturer. I lecture, give examples, give problem sets, and then hope that students engage in that and put it together in their heads. Because that's where it ultimately needs to happen.

If you weren't a professor, what would you be doing?

My two main areas would be fluid consulting or energy consulting. If it weren't those, then I'd be doing basic research. If I had to choose a non-engineering related job, I'd run away and join the Cirque du Soleil. My wife and I both do circus art.

So interviews are upcoming. Do you have any tips for 1B students?

Prepare as much as you can. Dress for the job, which is not always a suit. Be prepared for common questions. Strengths, weaknesses, tell me about yourself, why do you want this job, etc. If you don't have an answer for that, it's not going to reflect well. Always have some questions prepared for them, shows that you have actually prepared for it.

3 tips for undergrads?

Find time to study, keep on top of it. Do stuff other than studying as well. Find something you're interested in, student team, unrelated work, whatever you want.

Think about what you want and how you want to get there, but don't be a slave to

it. Because things change. You'll change, your plans will change, life around you will change.

It's okay to not know what you want to do, especially what you want to be. Make use of your co-ops. Find what you enjoy/don't. I certainly found things I did/didn't. wish I had been more varied in types of coops.

Fav memory of undergrad?

This is a long story. We wrapped a friends car in wrapping paper on his birthday. We had to leave the lab early to do it. Did it in c-lot, campus police drove by, stopped, backed up, drove down the aisle. They spoke to us and asked, "is it his birthday?" To which we responded, "yes." "Alright" and they drive away.

Chronicle of the beret?

laughs heartily

Last year of high school, the summer before it, my Scottish uncle had a beret, and I tried it on, though I looked good in it. Never had a hat that I looked good in. I told my uncle about this, and got my own for Christmas.

I wore it during frosh, wore it during first week of class, kept wearing it. Known as guy in beret. I could've taken it off, and people wouldn't recognize me.

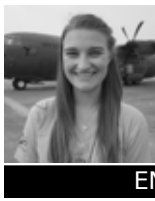
I wore it until the hat started to disintegrate, and by the time it was finishing undergrad, it was worn out.

During my masters, I had opportunity to go to France for an exchange. In my broken French, I would ask "ou est le chapelier?" I bought a new hat, and I still wear it today. It's at the dry cleaner right now.

Can I see the first hat?

My first hat is somewhere in a box misshapen. I learned my lesson. I needed to have taken better care of it, if I wanted it to last longer.

Engineering Events Are Pretty Cool!



GABRIELLE KLEMT
2A GEOLOGICAL

ENGSOE EVENTS

Hey all, welcome to your bi-weekly update on the events going on at your university. I travel around to as many events as I can get my butt to and hope to interview some of the people taking part in them. Each week I'll be going to events, taking photos and talking to some enthusiastic participants. Want to see your name or face on this page? Better come out to some Engineering Events taking place every day!

Résumé Critiques

Tron (Raveena, Adriana, Oswald, Tracy)

Why did you come to Resume Critiques? "We want a better resume to get a software or mechanical job." "Or any job really, should I say that?"

Tron (Steven)

How did you hear about the event, and why did you come? "I just saw the event on Facebook. Really I just want my resume to get wrecked."

What jobs are you looking to get? "Software jobs, 100%, even though I hadn't coded before coming to university."

Civil (Adrian)

How did you hear about Resume critiques? "We heard about it from friends, everyone was talking about it. I'm hoping to get another perspective, someone else's

point of view."

What would be your best and worst case job scenario? "Best would be a job in construction, or building science maybe. Worst case would be something far away, working for the government." Sorry kid, but a government job is definitely in your future somewhere if you stick with civil!

Civil (Abdullah, Samir, Ambri, Sina)

"We heard about the event through Facebook mostly."

What are you hoping to get out of your session? "Looking for a nice, neat resume. I want them to tell me what to fix, what to remove and add. Someone to tell me to get rid of all the B.S.! It would be good to get some upper year tips for interviews and experience job searching."

"Best job would be in an office doing AutoCAD. Or on a construction site or doing surveying. I would hate to have the job where you stand around counting cars all day at the stop light."

Civil (Allison)

How did you find your session? "It was helpful because the person I talked to was also in civil. They told me what people look for in the industry and gave me specific criteria. I liked it."

Mechanical (Azalea)

"I found the session helpful. The person I was with understood that in order to make it better you need to give harsh but constructive criticism. They really tore up my resume but it was very useful and in depth."

What kind of job are you hoping to get? "Something where I can develop my technical skills I hope!"



First Year Students at the Resume Critique Event

BOT

Some honest quotes from some honest folks.

Some 2A Enviros

"The cake was not a lie."

Non-committal shrug There's lots of mingling."

"I'm excited. I love engineering events, they confirm my engineering spirit, I'm just so excited." "Please quote me further: It was the best of times, it was the worst of times> But actually only the best of times #BOT2012"

2A Geo, 1B ECE

"I'm impressed it turned out so nicely. It's a really great way to start the term!"

"It's good but I feel like I'm the only first year here. I can't go on the pub-crawl which is too bad..."

People, including 2A Tron, 3B ECE, a 3A Chem and I lost track of the others

(It was a party, people move)

"I'm loving the Twix bites!"

"There's a lot of people, it's a good surprise."

"A grrrrreat success. Please write that with a Scottish accent."

"We need beer."

4B Tron

"The cake was very mushy but also very tasty."

Coming up in the next two weeks we have some super exciting events! We've got workshops on everything from Robert's Rules to technical interview prep to life skills to in-line editing! Additional events include de-stress activities, WaterlooWorks-a-thon and Coffee House!

Stay up-to-date yourself by checking out the EngSoc Facebook page and signing up for their email list!

My Experience Abroad: Waterloo to Germany

TRISTAN KUEHN
3B SYSTEMS DESIGN

I am currently a little more than half-way through an academic exchange term in Germany. It has been an interesting, rewarding experience, and I would like to share a little bit about what it has been like. While I will try to keep it as general as possible, some of the things I discuss will be unique to Germany's system, so keep that in mind.

When I arrived in town, my first goal was to find a place to live. I wasn't particularly proactive about looking for a place before I left, so all I had to start was a room for a week. This posed a bit

of a problem, because it's hard to get anything administrative, like opening a bank account or registering for school, without an address. While my German isn't perfect, I didn't find it too hard to pick up the vocabulary to look through ads. Eventually, I found out that one of the recently renovated student residences had a few free rooms, so that was that!

The rest of the stuff I needed to do to get settled in was pretty easy. There's an organization here dedicated to welcoming and helping international students, and I met someone there who was very friendly and helped me get through everything properly.

When it came to register for school, the

stark differences between the educational systems in Canada and Germany became pretty clear. To my surprise, it's a lot less organized in Germany. You don't sign up for lectures, you just show up to the ones you're interested in then sign up for exams toward the end of the term. Another key difference is that my entire mark for the courses I take here will come from the final exam. This led to a pretty stress-free experience for the first half, but now the pressure is on.

The lectures themselves are pretty much the same as what I would expect at Waterloo, just in German. You have lectures where the professors go through the course material, and tutorials where

someone goes through example problems.

Socially, it's easy to find other international people who are new in town and are looking for friends. Brunswick is a fairly small town, so I see a lot of friendly faces around town now. There are a lot of interesting things to see and do in the region, too. A lot of towns have old castles that you can see, and the transit is really good, so it's easy to travel the region and take in the sights. There are also a lot of places to sit down and grab a drink, which also tends to be a little cheaper than in Canada.

Stay tuned for next month, when I'll talk a little more about my experiences!

Engineering Exchanges?? But I'm only in 1B!!

RICK CULLEN
ASSOCIATE DEAN INTERNATIONAL

Yes, it IS too early in your academic career to go on an international exchange, but it's NOT too early to start planning for it!

It's a great opportunity and privilege but you must prepare, organize and plan. You could be among the 15% of your class who go on this once-in-a-lifetime experience. Most students go on exchange in either 3A or 3B (or even both!). But you have to start planning early!

What is an academic exchange? You'll get to spend one or two academic terms at a partner university where you'll take courses equivalent to those your classmates will be taking at UW. It is common practice for engineering exchange students to remain on the same academic schedule as the rest of their cohort and graduate with their class.

The University of Waterloo has ex-

change partnerships with over 80 top-tier universities in about 30 countries around the world. So you need to investigate which partner best suits your needs; many of our exchanges are restricted in numbers, some are open only to certain disciplines of engineering, for others you need to learn a new language. In some cases, it's best to go for a one-term exchange; in others, two terms work out best.

All this is a part of planning for your future career which could take you anywhere in the world.

To get started, visit our website (search for "Engineering Exchanges" from the UW home page) for all the details.

Facebook users, look for the "UW Engineering Exchanges" group, which is specifically for outbound students and those who have been on exchange. It's moderated by the Engineering Society (EngSoc) and Cindy Howe, the Administrative Coordinator of engineering

exchanges. By the way, Cindy's office is Carl Pollock Hall, Room 3658, and she can be reached at eng.ug.exchange.askus@uwaterloo.ca.

Don't let the opportunity pass you by! The application process takes more than a year of lead time. Applications must be submitted by November 1 for the following academic year. For example, if you want to go on exchange for your 3B term (Fall 2019), your application must be submitted on Waterloo Passport by November 1, 2018:

<https://uwaterloo-horizons.symplicity.com/index.php?s=StudentHome&au=&ck=>

Finally, exchange is great for fun, travel and adventure. You'll visit parts of the world that stay-at-home students may never experience. Don't take my word for it; read what previous exchange students have testified:

"I wouldn't have traded my experiences for the world. My time on exchange was great: I got to go traveling and back packing, got to meet some fantastic people from all over the world, and I graduated on time with my class and my friends! ... If you are even just considering an exchange, I recommend without the slightest reservation that you go. Waking up and looking forward to every day in a new country... that's just not a feeling that you get [if you stay at home]!" (Matthew Lee, SyDe)

"Doing an exchange was probably the best decision I have ever made. I learned so much about engineering (of course), but also about European culture and history, and simply interacting with people of an entirely different background. The time and distance away from home, and the completely different lifestyle was definitely not easy to adjust to, but these aspects made the whole experience worthwhile." (Winnie Tse, MechE)

WORK IN COLOMBIA THIS YEAR

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Waterloo's Own Autonomoose



ALINA PAVEL
1B NANOTECHNOLOGY

Renesas Electronics America, in collaboration with BlackBerry QNX and a team from WatCAR, launched their autonomous car at the Consumer Electronics Show in Las Vegas this past month. The vehicle, dubbed “Skyline,” maneuvered itself around a test track set up for the show, and also claims to be ‘hack-proof.’

The team of University of Waterloo researchers from WatCAR are also responsible for the university’s very own self-driving car, the aptly-named “Autonomoose.” The team of around 20 researchers is led by Steve Waslander of the Mechanical and Mechatronics Engineering department, and Krzysztof Czarnecki of the Electrical and Computer Engineering department. In terms of technical details, the car is a modified Lincoln MKZ equipped with a plethora of sensor technologies, such as sonar, lidar, inertial and visual detectors. These sensors enable the car to recognize stop signs, detect obstacles on the road, as well as change lanes and cross intersections on its own. The software systems on the car are developed by QNX, a subsidiary of BlackBerry responsible for software development. The company has recently been expanding its applications

to the automotive market with technologies such as Advanced Driver Assistance Systems (ADAS) and its proprietary operating system, known as Neutrino RTOS.

ADAS features (such as parking assists and warning systems) are already used in many vehicles on the market today, meaning the concept of a self-driving car is not far off. The Neutrino operating system is marketed as being reliable and fast, with the ability to make decisions and calculations faster than humanly possible, which is crucial to ensuring that the vehicle operates safely and responsively. The implementation of these systems improves the overall safety of the vehicle by increasing autonomy, helping to prevent collisions and injuries due to human error.

The Autonomoose was the first autonomous vehicle to be approved for testing on Canadian roads, meaning driverless cars will soon be able to be tested on public roads – with a human driver in the vehicle at all times as a precaution. One objective of the Autonomoose project is to improve autonomous driving abilities in all-weather scenarios, such as snow, by programming the car to perform difficult maneuvers in extreme conditions. The team also wants to optimize the vehicle’s systems to improve fuel efficiency and reduce emissions, as well as make the computer-based controls more robust, compact, and integrated into the car’s infotainment system. Refining the



Navigator84 via Wikimedia Commons

The Lincoln MKZ

systems already present in autonomous cars to make them smarter and safer is the key to making them widely available to consumers.

Implementing self-driving cars on public roads will provide many benefits, as Transport Minister Steven Del Duca stated, “For Ontario, the benefits of being part of automated vehicle technology are clear — increased road safety, managed congestion, minimized driver distraction

and easier movement of goods and services.” But not every new technology is without its disadvantages. The introduction of fully driverless cars to our roads will put transportation workers like taxi drivers out of a job for good, and laws and policies will have to be implemented and/or reworked to meet new standards. However, in matters of public safety, these costs are no trouble in comparison to the potential life-saving abilities.

Volkswagen Pleads Guilty: Scandal Recap



ALEXANDER LEE
4B NANOTECHNOLOGY

On January 11 2017, Volkswagen Group pleaded guilty to weaving a vast conspiracy to defraud the US government. Volkswagen Group will pay a US\$2.8 billion fine, as well as US\$1.5 billion in civil penalties. These fines are just the latest bad news in the ongoing decline of Volkswagen following the exposure of their diesel emission scandal.

To recap, Volkswagen’s troubles began way back in September 2015 when the US Environmental Protection Agency (EPA) discovered that Volkswagen has been cheating on mandatory emissions testing for their diesel cars after investigating discrepancies in results in European and American car models. This was

done in order to meet emission standards to allow the cars to qualify for environmentally friendly subsidies and tax exemptions. Diesel cars are notoriously polluting, as the catalytic converters used in most petrol cars to reduce pollution do not work effectively for diesel.

It turns out that Volkswagen had implemented software in their diesel car models to disable certain emissions controls during normal driving. However, these functions would be re-enabled during testing. Thus, the cars that were being tested by the EPA were designed to pass the emissions tests, but everyday cars on the road would fall far short of the requirements. In fact, the NOx emissions of everyday diesel cars were around forty times greater than those tested by the EPA. It turns out that Volkswagen had been placing these controls on their cars since 2009, and over eleven million cars worldwide were affected.

The resulting public fallout can only be described as disastrous. Volkswagen’s stock price fell by a third, and its CEO, Martin Winterkorn, resigned. Volkswagen issued a mass recall of many of the affected cars, which cost the company tens of billions of dollars. Countries worldwide launched investigations into their cars, many of which continue to this day as more information continues to be found.

Volkswagen Group is one of the largest automobile companies in the world, and produced just under ten million vehicles in 2016, second only to Toyota. They own many brands including Volkswagen, Audi, Bugatti, Lamborghini, and Porsche; many of these brands contained affected vehicles and have suffered due to the scandal. The vehicles affected by the diesel emissions scandal make up a small minority of the total number of cars Volkswagen has produced, but even

that minority results in millions of affected vehicles over almost a decade of emission cheating.

Additionally, the revelations over Volkswagen have also placed greater scrutiny on many other car manufacturers such as Chrysler. Many have been discovered to be doing similar things to their cars to make them appear green, though to a lesser extent. It appears that in our quest to lower emissions, many have chosen to cut corners and only appear environmentally friendly rather than actually achieving it.

After Wednesday, Volkswagen will formally pay the United States for the damage its software has caused and will be punished for cheating them out of subsidies and tax exemptions. However, its troubles are far from over, and the extra environmental damage caused by its cars will surely be felt by people all over the world for generations to come.

New Organ Classified: The Mesentery



HASAN AHMED
1B NANOTECHNOLOGY

Around a week ago, scientists at the University of Limerick, Ireland, classified a new organ known as the mesentery. The mesentery is a fatty membrane which prevents the intestines from flowing freely in the belly. Holding it in place allows for intestinal processes to perform smoothly. The mesentery was always thought to be fragmented into separate tissues, but after much research, it was confirmed to be one long, continuous organ in the belly. Specifically, the mesentery attaches the stomach, small intestine, pancreas, spleen, and other organs to the posterior wall of the abdomen.

The mesentery has given an anatomical

understanding to diseases such as Crohn’s disease, which can cause the mesentery to frequently thicken, thus, if bleeding needs to stop within that area, it would be much more difficult. With its new classification as an organ, you can categorize abdominal diseases through the mesentery, which can introduce new ideas for treatments and cures.

Parts of the mesentery have actually been known for a very long time. It is commonly claimed that a British surgeon named Sir Frederick Treves first described the mesocolon in 1885, but describing the mesentery as a single structure dates as far back as Leonardo Da Vinci, who depicted it in some of his drawings. Since Treves was famous throughout the country for operating on both Queen Victoria and King Edward VII, his research was taken with the highest gratitude, as he studied hundreds of

cadavers to develop the initial anatomical description for the mesocolon. That’s why the concept of the mesentery being considered a single organ was unfortunately dismissed. Research on the organ (or back then, a tissue) continued for the upcoming centuries, and in 2012, it was officially concluded to be a contiguous organ, cementing the validity of the new classification.

As a result of the research, this brings the number of organs in our body to a whopping 79. Yeah, 79 organs in such a compact space. Really makes you realize how important each one is in helping the others. It was only recently (within the last decade) that scientists from the University of Limerick combatted the idea of it being just a tissue (which was its original classification). However, its function is still not known in complete detail. The researchers involved in the process stat-

ed, “The functional unit of the mesentery is unknown, and whether a distinctive cell type is primarily responsible for its functionality should be investigated.” They don’t even know if it should belong to the digestive, vascular, endocrine, or any system at all. However, the most famous medical textbook, “Gray’s Anatomy”, now includes the mesentery as a distinct organ, so this discovery is obviously highly regarded in the medical field.

Now, in no way is it a contemporary discovery. Yet the scientists and surgeons who combat withstanding discoveries from past researchers show that there’s always something new to learn and to question validity of the evidence around us. This can lead to new discoveries and processes, which in turn creates a chain reaction of additional inventions and ideas. This is what science is all about.

Healthy Menu Choices Act

Will Canadians Really Rethink Their Eating Habits?



ALEX PEZZUTTO
1B NANOTECHNOLOGY

If you've walked into a restaurant since the start of 2017, you might've noticed a lot more numbers in the menus of chain restaurants, and you can thank Ontario's Healthy Menu Choices Act for that. This law has been in the works since 2014, but due to the meticulous nature of law making, it has finally been passed as of this year. Considering the

obesity pandemic in our country, I'd say it was 20 years too late, but hey, better late than never, right? The objective of this law was to, of course, encourage people to eat more healthy food by making them more educated in regards to the calorie content of the foods they eat, and what better way to do that than having a giant sign letting you know how much of an idiot you are for ingesting a 1000 calorie burger with a billion grams of sodium? I can't think of any better alternative!

So how much of an impact will such a law have? If we look to the U.S., then

probably not much. U.S. Congress has already passed a law that required franchises with 20 or more restaurant chains to post calorie contents in their menus. Besides an initial drop in sales within the first 2 months of the law being passed, sales remained at their normal levels.

Why isn't this working? Perhaps Americans can't read? If the state of their education system is any indication, then that theory is a possibility. But as they say, old habits die hard, and if you're really craving a Big Mac, a number beside its name probably won't make you turn tail and go back to your car.

Canada spends \$4.5 billion on obesity related issues annually. The problem is, only 5% of that money is spent on prevention. An ounce of prevention is worth a pound of treatment, and it is far less effective to spend thousands of dollars on medicine and hospital treatments, than it is to instill healthy eating habits from birth.

That's not to say that the Healthy Menu Choices Act isn't a good idea. However, there needs to be a paradigm shift in our current health expenditure, and consumers need to take more responsibility for the food that they buy.

Trump - Continued From Page 3

Kellyane Conway

Soon to be: Counselor to the President
Who is she? A longtime Republican political advisor.

The controversy: Conway has a long history of excusing or downplaying controversial statements by her clients, such as Trump's "Grab them by the p***y" comment.

Mick Mulvaney

Soon to be: Budget Director
Who is he? House representative of South Carolina, and former lawyer and businessman.

The controversy: Famous for his hardline conservatism, Mulvaney was a founder of the House Freedom Caucus, associated with the Tea Party movement. He is also strongly against the US taking in Syrian refugees, and aims to defund Planned Parenthood. More generally, he favours deep budget cuts.

Dan Coats

Soon to be: National Intelligence Director
Who is he? A former Republican senator from Indiana, during which time he was a member of the Senate Intelligence Committee. He also served the role of ambassador to Germany.

The controversy: Coats is not particularly controversial in the political sense, but his stance on Russia contrasts with Trump's attitudes thus far. While Trump has advocated for friendlier relations with Russia and has expressed some admiration for Russian President Vladimir Putin, Coats takes a more hardline stance, and has in fact been banned from entering Russia by the Russian government after advocating for American sanctions on Russia during the Obama administration.

Mike Pompeo:

Soon to be: Director of the CIA
Who is he? Kansas Republican

congressman, associated with the Tea Party movement.

The controversy: Pompeo is on the record supporting the use of torture, as well as government mass surveillance. He has also called for the execution of NSA whistleblower Edward Snowden, and is against the Iranian nuclear deal.

Mike Flynn

Soon to be: National Security Adviser
Who is he? Retired lieutenant general in the US Army, and former director of the Defense Intelligence Agency.

The controversy: Flynn is famous for his anti-Islam stance, and believes that Islamic terrorism is the greatest threat the United States currently faces. He also has a reputation as a maverick and a conspiracy theorist; for example, he has incorrectly claimed that Muslims want to exterminate or enslave 80% of humanity, and has given credit to far-fetched rumours

about Hillary Clinton being involved in child sex trafficking. He was known for leading "Lock her up!" chants at Trump rallies. Most worryingly, when asked about Trump's highly controversial proposal to kill the family members of suspected terrorists (a war crime), Flynn would not condemn the proposal, instead saying that it would depend on the circumstances.

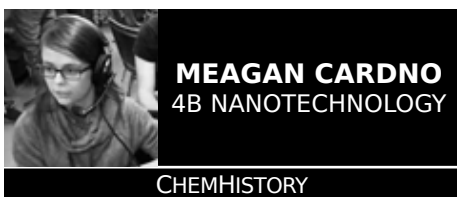
Nikki Haley

Soon to be: UN Ambassador.
Who is she? Republican Governor of South Carolina.

The controversy: Haley has no experience in foreign policy, and has drawn criticism for opposing the settlement of Syrian refugees in her state. She is also a former Trump critic, and particularly condemned his proposal to ban Muslims from entering America. Haley is a woman of Indian descent, and considered to be one of the more moderate Trump picks.

The Disappointing Life of Grapefruit Juice

And its Potential Utility



MEAGAN CARDNO
4B NANOTECHNOLOGY

CHEMHISTORY

As a fourth year engineering student, you would be safe to assume a couple of things about myself: first of all, I am horridly in debt with student loans, which makes all of my purchases limited to essentials only (that is to say things like food, soap, video games, pencils, you know the drill). As a result, it's also been long since I've purchased any form of juice—after all, water is free and doesn't make my teeth feel like they are swimming in sugar. However, it doesn't distract me from the advisory warnings I see floating around on packaging—statements that pique my curiosity and send me into the realm of answer-searching.

The first came from an advisory statement I found on my father's diabetes medication – "DO NOT TAKE WITH GRAPEFRUIT JUICE". What an oddly specific exclusionary statement to make, when grapefruit (aside having a taste I can only describe as liquid disappointment) seems just as innocuous as any other citrus beverage, such as lemonade or orange juice.

The reason behind this warning is due to a group of chemicals found in grapefruit (as well as a few other hipster citrus, such as pomelos or hybrids like tangelos) called furanocoumarins. They are polyphenolic compounds which act as inhibitors to an enzyme present in your gastro-

intestinal tract. Cytochrome P450 3A4, affectionately called CYP3A4 like some sort of tag-along droid buddy, can be found snuggled up in your liver or small intestine, and makes a living oxidizing foreign chemicals in your body so they can be more readily excreted from your body. These foreign chemicals also include medicine taken orally, which makes CYP3A4 responsible for a large amount of deactivation of oral drugs.

Now pharmacists, clever as they are for your continued patronage, try to give you an amount of drug active ingredient that hopefully won't result in your death. This means that they will give you enough drug to bypass intrinsic effects on the drug's bioavailability (including the effects of CYP3A4) and still have a noticeable effect in treating your ailment, while not giving you too much to the point that your liver destroys itself trying to deal with the excess of drugs present in your bloodstream. Hooray!

But these so-called "safe" drug levels that they prescribe is assuming the person is a nice upstanding citizen, and doesn't drink grapefruit juice unless they mistook it for pink lemonade. The furanocoumarins in grapefruit (be it in the fruit itself or in juice) irreversibly inhibit the enzyme, and at a surprisingly efficient rate—only 200 mL of juice can be enough to cause life-threatening enzyme inhibition, as way too much active ingredient enters the bloodstream, bypassing the typical first-pass hepatic clearance. Effects of grapefruit inhibition are long-lasting too – it can take up to 24h to regain 50% of the enzyme's typical activity, and up to 72h before the

enzyme activity is back to normal, so it is not as simple of a solution as drinking your "Gee Jay" in the morning and pills at night.

Fortunately enough, this enzyme isn't responsible for the reduction in bioavailability for all drugs. First of all, any drugs administered in a non-oral manner (i.e. topically or intravenously) will not be affected by CYP3A4, as they shouldn't be in your gastrointestinal tract unless they somehow got super lost. But beyond that, the drug-enzyme interactions become more complicated, so it is easier to look at simply a list of drugs which have known interactions of bioavailability with furanocoumarins. This includes benzodiazepines (a class of psychoactive sedatives), many amphetamines (including adderall and methamphetamine), methylphenidate (ritalin), many statins (drugs for treating cardiovascular disease), drugs for treating erectile dysfunction (such as sildenafil and tadalafil), certain off-market antihistamines, birth control hormones, and my dad's diabetes medication. The full list, as you might imagine, is much, much larger – and not all drugs are affected equally, or even in the same matter. For some drugs the enzyme CYP3A4 actually has an activating effect, and so the intake of grapefruit juice in turn decreases their bioavailability.

However, it's not all doom and gloom for the family disappointment of the fruit world. Research into potentially utilizing this mechanism in conjunction with drugs to increase their bioavailability and reduce costs is underway, and could reduce cost of medication. However, despite this

phenomenon being known to the scientific community since the 1980s, variance in the impact of grapefruit-enzyme interactions between individuals has so far left these efforts unsuccessful.



The C&D has only ever sold one grapefruit juice in recorded history, and it was to us. We don't intend on drinking it.

Ra(Tan) Lines

Hello From the Magic Tavern



RATAN VARGHESE
2A ELECTRICAL

RA(TAN) LINES

Hello From the Magic Tavern is a podcast about buttholes. Well, not really. It is actually about a derp named Arnold Kniekamp (please call him Arnie) who falls into a dimensional portal behind a Burger King into the fantastical, magical land of Foon and proceeds to ask the inhabitants about their poop-chutes.

Well, not exactly.

Arnie is joined by Chunt, a shapeshifter who is currently in the form of a badger, and Usidore, a wizard with an infinite number of alternate names. Together they interview the magical creatures in a local

Foonian tavern, and send the interview to us Earthlings via the ever-reliable Burger King WiFi. Yes, crap-gaps did often come up as a topic of conversation in earlier episodes. The sex lives of princes and pixies alike were (and still are) constantly put under the microscope. Turns out that while Foon is magical, it is actually not that medieval, except for all the knights, monarchies and child death.

Listen in today and you might not catch all the in-jokes, such as the fact that Arnie is a total derp, the well-thought out tax code of the Dark Lord, and words that have a different meaning on Earth and on Foon (Foonish is a lot like English ... for some reason). You won't feel too left out given that every other detail of Foon is a joke. The email addresses used to contact the cast were chosen as a joke (although they are totally legitimate email address-

es). If "Earth Stuff" is mentioned probably there'll be a joke. If something seems serious but doesn't involve loss of life, there is probably an elaborate pun system in the making.

The main cast doesn't change that much: they grow to respect each other very slowly and only a very little bit. The recurring characters change even less: as the series drags on more strange hijinks and alternate universes have infiltrated the show. The mysterious psychopath who speaks at the beginning and end of each episode claims that this is a work of fiction, but plot progression only exists for side characters who show up thrice a year. Our noble heroes have their posteriors firmly planted in the tavern chairs. How long can the world-building go until Usidore faces the Dark Lord and Arnie finds a way home? Probably a really long time,

to be honest. They've recently started a paid-access spin-off show where the characters play a tabletop game about a world exotic to Foonish standards: Offices and Bosses. If such a marginal detail can form an entire separate podcast, then Hello From the Magic Tavern could well last several more years.

If there are other flaws, the production team is more aware of them than I am. An aforementioned mysterious man rips the cast a new feces ejector at the start and end of every episode. Meanwhile I laugh at even the most juvenile quips and crass puns they put on air. To each their own.

Hello From the Magic Tavern updates weekly and each episode lasts 30 to 45 minutes. The cast sometimes appear at live performances ... far away from Waterloo. All in all, makes for some fun bus rides.

Discover Broadway

Andrew Lloyd Webber



TIFFANY CHANG
2A CHEMICAL

DISCOVER BROADWAY

It's great to be back! I hope that everyone had a relaxing and safe holiday season and that you are having a great start to 2017.

This term, we will continue our journey through the wonders of musical theatre. However, I hope to enrich your experience and knowledge of this great art by exploring some behind-the-scenes gurus, underrated performers, and the history of this art.

To kick off things off, let's meet one of the greatest composers of musical theatre.

Andrew Lloyd Webber is an English composer and impresario—arguably, he is one of the greatest composers to have ever graced the art with his work. Even if you are unfamiliar with musical theatre, you have probably heard one of his compositions at some point in your life—"The Music of the Night" from *The Phantom of the Opera*, "I Don't Know How to Love Him" from *Jesus Christ Superstar*, "Don't Cry for Me, Argentina" from *Evita*, and "Memory" from *Cats* are some of his most recognizable works.

Lloyd Webber grew up in a family of accomplished musicians; his father William was director of the London College of Music, his mother Jean is a piano instructor, and his brother Julian is a successful concert cellist. When Lloyd Webber was nine years old, he published his first composition—six short pieces called *The Toy Theatre Suite*. His musical idol of the time was Richard Rodgers, the composer behind musical classics, such as *Oklahoma!*, *The King and I*, and *South Pacific*.

Lloyd Webber found his musical soulmate in college, and it was no other than Tim Rice, who was a record producer and aspiring lyricist at the time. Yet unproduced, their first collaboration was the musical *The Likes of Us*, which was based on the life of the Victorian philanthropist Dr. Barnardo.

However, their second collaboration, *Joseph and the Amazing Technicolour Dreamcoat*, received excellent reception. The show was a creative adaptation of the biblical tale of Joseph and his twelve brothers. The dynamic duo were not afraid to experiment, as demonstrated by the blend of opera, rock, country, and calypso in this show's musical score

Their next piece also followed a biblical theme—the widely popular rock opera *Je-*

sus Christ Superstar. The musical followed the last seven days in Jesus' life and was first released as a concept album. The album sold nearly three million copies in the United States. Since the album was very well-received, the Broadway production attracted unprecedented advance ticket sales of more than \$1 million in 1971—despite inevitable protests from religious groups who were aghast at the parodic portrayals of biblical figures and the questions that the show raised about Jesus' life as a man. Critics conceded that the show was not only provocative in its content but also in its innovation for music theatre. *Jesus Christ Superstar* was by no means the first rock musical to be produced, but Lloyd Webber singlehandedly popularized the idea of a music theatre composer's palette to include the choice of rock.

Lloyd Webber and Rice then moved onto *Evita*—this work turned out to become an even greater success than *Jesus Christ Superstar*. Like *Jesus Christ Superstar*, a concept album of *Evita* was first released. This show followed the life of Eva Perón, the wife of Argentine dictator Juan Perón. Even though it sparked controversy for glorifying the right-wing Peróns, some audiences still recognized the musical "as an allegory of the deteriorating political situation in England in the mid-1970s". Personally, compared to *Jesus Christ Superstar*, *Evita* contained a more diverse selection

of music: classical music opened the show in "Requiem for Evita", rhythmic Latin styles were featured in "And the Money Kept Rolling in (And Out)", and pieces like "Oh What a Circus" were very rock in nature. *Evita* took home seven Tony Awards in 1980, including those for Best Musical, Best Original Score, Best Performance by a Leading Actress in a Musical (Patti Lupone), and Best Performance by a Featured Actor in a Musical (Mandy Patinkin). *Evita* was revived on Broadway in 2012 at the Marquis Theatre, with Elena Rodger in the title role, and closed in January 2013 after 337 performances.

Lloyd Webber's next greatest hit was *The Phantom of the Opera*, in which he collaborated with lyricist Charles Hart. This musical holds a very special place in my heart because it was the first musical that my parents introduced to me, which speaks volumes in and of itself,—since they were never heavily invested in music theatre—and it was the first musical that I saw live—sadly, the Las Vegas production that I saw closed in September 2012 at The Venetian.

Phantom is occasionally operatic in style when certain characters are featured; however, it maintains the form and structure of a musical throughout the show. The original London production won seven Tony Awards in 1988, including Best Musical, Best Performance by a Leading Actor in a Musical (Michael Crawford), Best Perfor-

mance by a Leading Actress in a Musical (Judy Kaye), Best Direction of a Musical (Harold Prince, who also directed *Evita*), and Best Scenic Design (Maria Björnson, who also took the Tonys for Best Costume Design and Best Lighting Design for *Phantom*). The show celebrated its 25th anniversary in London on October 1 and 2 in 2011 at the Royal Albert Hall.

Lloyd Webber certainly flexed his creativity muscles throughout his entire career, as demonstrated by his diverse set of repertoire. Most importantly, he was courageous to explore controversial topics in his musicals.

I believe that the most powerful aspect of art lies here. Great art is meant to bring to light topics and ideas that are typically taboo to discuss in public, such as politics and religion. Furthermore, it should also propel us to call to question phenomena in our society.

Thus, it is composers, such as Lloyd Webber, who are unafraid to challenge the status quo when it comes crafting their art with different stylistic palettes. As much as I love listening to the classics of Rodgers and Hammerstein, it is also a nice change to jam out to one of Lloyd Webber's rock musicals or to belt along with one of his more 'traditional' shows.

Tune in next week to watch me rave about one of my favourite Canadian musical performers!



Tracey Nolan via Wikimedia Commons

Andrew Lloyd Webber, composer of the scores to *The Phantom of the Opera*, *Evita*, and *Cats*, among many other musicals

Perogy Casserole

For When You Have Extra Perogies Lying Around



Hi everyone! This term, I'm going to continue the Iron Warrior's time-honoured tradition of bringing questionably good recipes to you, the people. These may be of use if a) you're broke, b) you're supposed to be "studying" and are looking for something to pass the time, c) you somehow have time to pick up a new hobby, or d) if you need to attract friends. Seriously, one of the best ways to attract friends is by offering people food. I read it on the Internet so it must be true.

Anyway, here's a recipe that I stumbled upon while figuring out what to do with the 5 boxes of \$2 perogies I bought last week at Zehrs. It's pretty good, though it can take a while to prepare. Getting some other people

to help you out can significantly increase your cooking efficiency, or, if you're cooking this by yourself, you can claim ALL THE FOOD for yourself and you'll have leftovers for pretty much the whole week.

Perogy Casserole (serves 6-8)

Ingredients:

- 18-20 (one box) frozen perogies
- Half a red onion
- 8-10 button mushrooms
- 6-8 slices of bacon (substitute with any deli meat you like; diced Kolbassa sausage is a particularly good substitute, or just skip the meat for a vegetarian option)
- 2 cans cream of mushroom
- 200 g cheddar cheese (half a large block of cheese – you can never have too much cheese though; add more, if desired)
- 6 slices of Havarti or mozzarella cheese (optional)
- Oil, butter or margarine for frying

Preparation:

First, start boiling a pot of water, which will be used to boil the perogies. While the water is heating up, microwave the bacon: place some paper towels on a microwave-safe dish, put up to 8 slices of bacon on the paper towels, and place some paper towels on top of the bacon as well, then microwave the bacon for 4-6 minutes. You could also cover it with wax paper and microwave in 30 second intervals until done.

Now, you can start cooking the onions and mushrooms: first, dice the onions and slice the mushrooms, then heat up some cooking oil, butter, or margarine in a pan to medium heat. Once the oil is hot enough (test by flicking a droplet of water in the pan – if it sizzles, the pan is hot enough), put the mushrooms in the pan. Put the mushrooms in first, stirring them occasionally, then after a couple of minutes, add the onions to the pan. Keep the pan on the heat, and stir for a couple more minutes until the onions are cooked.

By now, your water will probably be boiling, so you can add the perogies to the pot. Cook the perogies until they start floating in the water (despite what the instructions on the box say, perogies don't take 3 minutes to cook), and once the perogies are done cooking, add them to a large casserole dish. Open the two cans of cream of mushroom, and add them to the casserole dish as well, along with the mushrooms and onions. Take the bacon out of the microwave as well, and rip it into little pieces, then add the bacon to the casserole as well. Finally, grate the cheddar cheese, and add it to the casserole as well. Mix all the ingredients, and make the mix level in the casserole dish, then, if you want, add cheese slices on top. Now that the casserole is ready, put it all in the oven and cook for 20 minutes. And voilà, your very own perogy casserole!

Join us next issue for more Half-Baked recipes – featuring dessert! Stay tuned for chocolatey goodness!

Mad Science That Will Make You Mad



Hello again, readers (if anyone is still brave enough to make their way through this column)! For the first issue this term, I'm going to take a break from the usual programme of gross things superstitious people did a long time ago. Don't look so cocky, engineering students! We haven't improved much as a species since then. Let's talk about some of the disturbing things scientists have been up to in the not-so-distant past.

My Fingernails Taste Bitter

In the 1940s, a professor by the name of Lehan thought that you could teach people things by talking to them in their sleep. While this would be great news for anyone in a relationship, it isn't true. However, Lehan thought that he could prove it with an experiment, and of course he went about it in the strangest possible way.

First, he set up a summer camp for young boys who had a bad habit of biting their nails. Then, he set up a phonograph record which would play the sentence "My fingernails are terribly bitter" three hundred times a night. However, the phonograph broke after a while, but instead of getting a new one like a normal person, he decided to hang around in the boys' dormitory all night, repeating "My fingernails are terribly bitter" over and over again. All night. Lehan reported by the end of the summer that many of the boys had been cured of their bad habit, but the results were not reproduc-

ible. Then again, I don't think you could really do that again these days.

The Tearoom Sex Study

Have you thought about doing a PhD? What would you do it about? There is so much to study in the world, and you can get away with doing all kinds of things in the name of science. Case in point: the sociologist Laud Humphreys wrote his PhD dissertation about anonymous homosexual trysts in public washrooms. This was in 1970, because of course it was. How did he gather his information? Extensive field research, of course. That is to say, he presented himself to his, er, test subjects as a random voyeur, and offering to watch out for the police while watching the... experiments.

The question of this study was to see if most of the men engaging in gay sex were gay; oddly enough, many of them weren't. While this study seems both creepy and pointless, Humphreys actually did good work: he helped to dispel the stereotype that gay men would prey on unsuspecting straight men at random. (Of course they don't, which seems obvious today, but back in the day you could do your PhD on that.)

Dr. William Beaumont and the Stomach

In 1822, a man named Alexis St. Martin was accidentally shot at short-range with a musket, which blew his stomach open. He survived against all odds, but was left with a permanent hole in his stomach. Instead of healing closed, the edges of the stomach-hole attached themselves to the edges of the skin-hole, leaving a window into his digestive system. The doctor who saved St. Martin's life was called Wil-

liam Beaumont, who thought this whole thing was pretty cool. He kept St. Martin around, running experiments on him where he would, say, drop pieces of meat into his stomach while holding them on a string, in order to pull them out later. He also tried extracting stomach juices and experimenting with them. In the meantime, Beaumont also made his test subject do his chores for him, and got him to sign a contract as a servant (taking advantage of the fact that he couldn't read). If this sounds rather dickish, it was, and St. Martin didn't really like it. Eventually he left and went home to Canada, and wouldn't come back even though Beaumont kept spamming him with letters asking him to undergo more experiments.

Although it sounds rather gruesome, this led to some important scientific results. Before Beaumont's experiments, people didn't have any idea that digestion was a chemical process, not a physical one (i.e. contracting muscles grinding everything up). Beaumont also figured out that stomach acid is HCl.

Facial expressions experiment

Facial-recognition software is becoming more and more of a thing these days, but it's been in the works for a while. In 1924, a grad student named Carney Landis wanted to see if everybody made the same facial expressions when exposed to the same stimuli. Accordingly, he rounded up some volunteers, painted lines on their faces to help analyze their expressions, and then proceeded to stimulate them. If that sentence makes you go "Hurr hurr!" you are absolutely right, because his stimuli included making them watch porn. However, the sexiness was rather undermined by his also making them smell ammonia and dip their hand in a bucket of frogs (unless you're into

that). As the pièce de résistance, he would hand them a live rat and ordered them to cut its head off. If they refused, he would just decapitate it in front of them. The result of all this perversion and animal cruelty was the discovery that different people make different facial expressions. Stop the presses!

Dogs' heads

If you think the above scientists didn't give a damn, wait till you get a load of the Soviets. The government liked to show off their science game and didn't care that much about human life, so animal life was totally up for grabs. If you are a dog lover, you might want to skip the next bit.

In 1928, a doctor named Sergei Brukhonenko invented what was basically an early form of a heart-lung machine. Naturally, the best way to show it off was to cut off a dog's head and keep it alive. He demonstrated this to other scientists by showing them a decapitated dog's head, and then shining bright lights in its eyes, scaring it with hammer bangs, etc. Capitalist pigs were duly impressed and freaked out.

However, Mother Russia wasn't done with dogs yet. In 1954, another guy named Vladimir Demikhov figured out how to surgically attach an extra head to a dog. He created around twenty two-headed dogs, none of which lived longer than a month. This work did help pave the way for heart transplants, so there's that.

Of course, America never likes being outdone by Russia, so as soon as that happened, the American government gave Robert White funding to transplant a monkey head onto a new body. It survived for more than a day, and was reportedly pretty pissed off about the whole thing.



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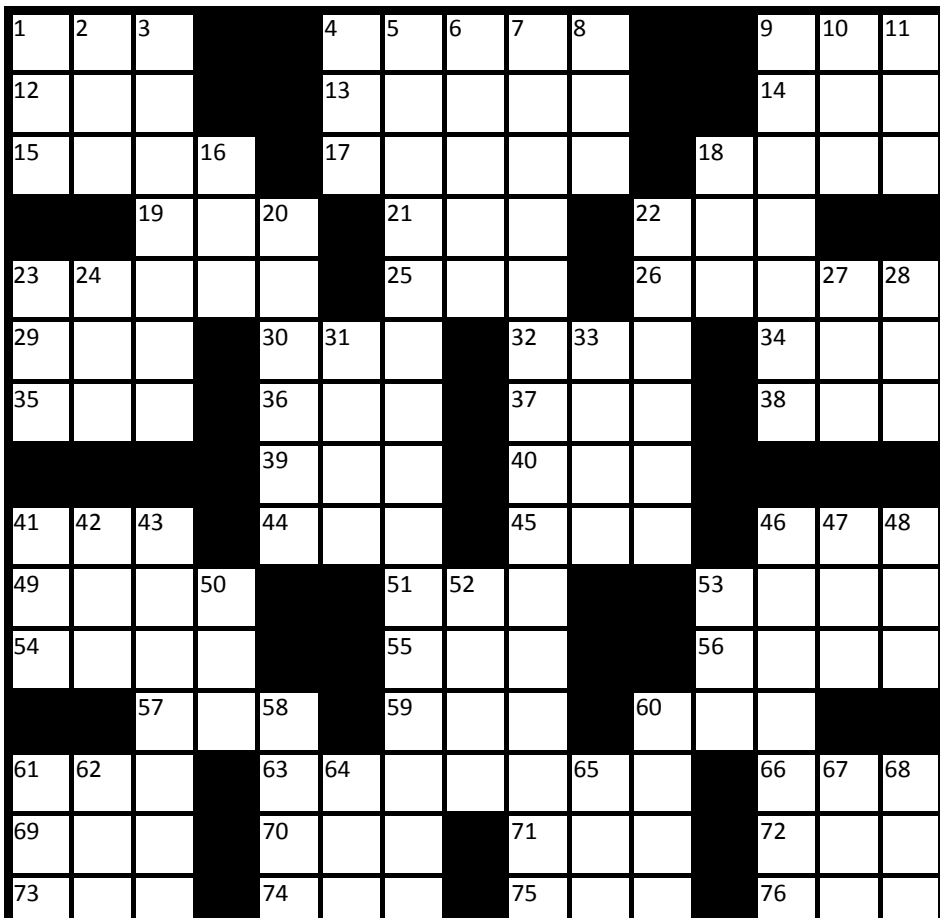
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The Iron Crossword

Social Medias

CAMERON SOLTYS
3T MECHANICAL



ACROSS

- 1: Militant Irish independence group
- 4: A large number
- 9: Association for Toronto police (Abbr)
- 12: Canadian Rock Band of "Steal My Sunshine" fame
- 13: Controller of an airplane
- 14: Money of 61 Across
- 15: Single
- 17: Intensely debate
- 18: In the middle of
- 19: "What the hell!" (Abbr)
- 21: Made unprofitable by Uber
- 22: Take away by force or threat
- 23: VoIP calling service
- 25: Lower explosive limit (abbr)
- 26: Mixture of several metals
- 29: ___ off, golf term
- 30: An equation that includes differential terms of one variable
- 32: 10 000 years
- 34: Opposite of morn'
- 35: Apple's advertising service
- 36: Gloria in excelsis ___

- 37: Tolkien monster created from elves
- 38: File extension for rasters
- 39: Often tree or forest-dwelling fantastical creature
- 40: Real estate owned (abbr)
- 41: ISO code for currency of East Germany
- 44: Norse goddess with golden hair
- 45: Neither this ___ that
- 46: 2 or to
- 49: South-Mexican indigenous empire
- 51: Location of the 2016 Olympic summer games
- 53: Has possession of
- 54: Peel of a citrus fruit
- 55: Computer variable name for -1, 0, 1, etc.
- 56: US Marine's enemy in the 60's / 70's
- 57: Safety glasses or a hard hat, for example
- 59: Magic: The Gathering variant with 100 cards
- 60: Pair
- 61: Country with the currency of 14 Across
- 63: Positive axial force
- 66: Neckwear to accompany a suit
- 69: "Give me a ___!"

- 70: Image sensor in a digital camera (abbr)
- 71: Anagram of "one"
- 72: The three-stream engineering program
- 73: File extension for computer programs
- 74: Short for "hospital"
- 75: Time zone of Greenwich, London
- 76: ___ and coke, popular drink

DOWN

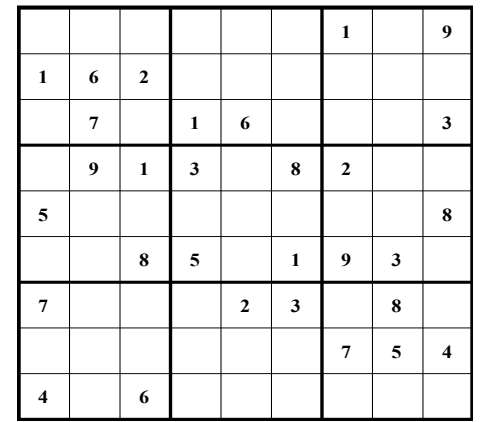
- 1: Not well
- 2: Hebrew for "my shepherd"
- 3: mad or disgruntled
- 4: Resort with a mineral spring
- 5: Group of people close to you
- 6: Photosynthetic aquatic organisms
- 7: Risky gambling bet
- 8: Sault-___-Marie
- 9: Drinking glass made of plastic or glass
- 10: Imperial unit of pressure
- 11: Opposite of subtract
- 16: Electronic-destroying radiation burst
- 18: Early US internet provider
- 20: Rock containing beautiful crystals
- 22: Bitter ill will
- 23: Infection spread by carnal activity
- 24: New Zealand parrot
- 27: Female reproductive cell
- 28: "Say ___ to the dress"
- 31: Sandwich shop
- 33: Cookie made of three parts
- 41: Region between North and South Korea (Abbr)
- 42: Internet speak for "Does anyone else?"
- 43: Large mid-2000s social media network
- 46: Bird-themed microblogging site
- 47: "We're number ___"
- 48: Treaty that regulates international ownership of space (abbr)
- 50: Chemical made by mitochondria used by other parts of the cell
- 52: Emulator for Nintendo DS
- 53: "A man called ___" 2016 film
- 58: Superficially carve
- 60: Mucus of the nose
- 61: Deploy
- 62: Birds and bees
- 64: Prefix indicating relation to the environment
- 65: Original Equipment Manufacturer (Abbr)
- 67: Covered with solid water
- 68: Yearly videogame expo (unusual stylization)

Sudoku

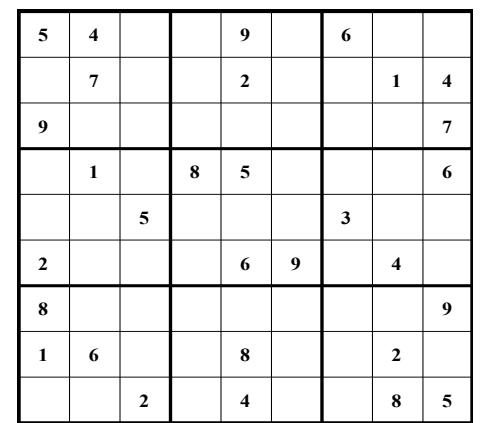
#2017-01

BRYAN MAILLOUX
3A MECHATRONICS

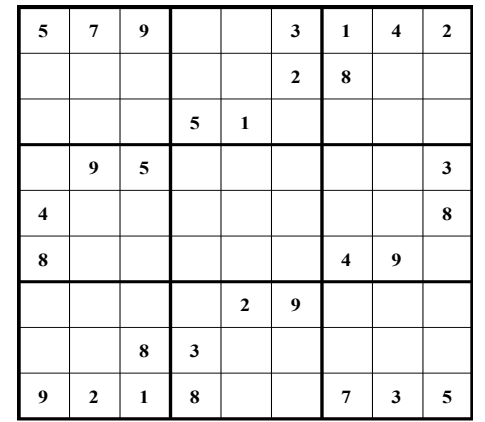
Medium



Hard



Very Hard



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

THE IRON INQUISITION
Tom Willert, 3B Mechanical

"What is your favourite CSE you've taken?"



"Drama 200, because Drama."
Taylor Williams, 4B Mechanical



"STU 100, only one!"
Marial Rojas, 1B Chemical



"Clas 104."
Adelle Vickery, 4B Chemical



"Geog 101."
Hannah Gautreau, 4B Management



"Psych 256."
Kashish Mittao, 1B Mechanical



"Disasters + Natural Hazards."
Kelsey Towers-Jones, 2A Mechanical

Raptors Regroup, Focus on Defense

And An Honourable Mention...



Sports fans! For those returning to campus from co-op, welcome back to another term of sports coverage. To kick off this term's Benchwarmer Report, the Raptors are well on their way to another playoff clash with the Eastern Conference Titans, the Cleveland (LeBron) Cavaliers. However, before getting into that, the Canadian World Junior Hockey team deserves at the very least an honourable mention, if not an entire article.

This year's IIHF World Junior Hockey Championship returned to Toronto in Montreal, after being held in Helsinki, Finland last year, where the Canadians had a disappointing sixth place finish. In 2015 at the ACC in Toronto, Connor McDavid et. al. took gold in a breathtaking final featuring an epic Canada-Russia rivalry matchup for World Junior Hockey supremacy. The excitement this year was no different, as the Canadians dropped only one game in the preliminary round, on New Year's Eve against Team USA. Despite strong tournaments from fellow powerhouses Sweden and Russia, the battle of North America would resume in the final. Led by stellar performances from defencemen and Senators draft pick Thomas Chabot (tournament MVP), goaltender Carter Hart and "third-line" centre Anthony Cirelli, the Canadians mounted a true team effort with a roster that may

have otherwise featured superstar talent in the form of Connor McDavid. However, the gold would prove elusive this time around, as USA forward Troy Terry came gave his team a shootout victory for the second straight night.

With that, we return to the scheduled programming for this issue. It's been a great first half of the season for the Toronto Raptors, who currently sit 2nd in the Eastern Conference, a mere 3 games back of the Cavs. Behind superstar-pedigree play from shooting guard DeMar DeRozan, the Raptors have lost only 13 games this season—credit powerhouses Cleveland, Golden State, San Antonio and 3-point dynamo Houston for six

of them. Overall, not bad, but this stat does reveal some pressing issues for the Raptors down the stretch if they are going to compete with the big boys.

Those that have read my commentary before will certainly guess the most critical issue: DEFENSE. The Raptors were an offensive machine in December, averaging well over 100 points in many games. While it's nice that their elite scoring seems to be "carrying" them at the moment (and it sure makes for exciting basketball), it simply will not work without defense come playoff time. If you want to compete against teams like Golden State, you've got to limit their every possession because

most of the time, these guys find one way or another to sink a basket—or get a foul call trying. Boxing out the man under the rim and limiting second-chance opportunities is another critical element, an area where the Raptors have struggled considerably, though big man Lucas Nogueira has proven himself as a reasonably dangerous shot blocker. Defending the three is also going to become crucial down the stretch, as the NBA seems to have shifted to a jaw-droppingly high rate of three-pointers taken per game.

Speaking of the three-game, it has given the Atlantic Division rival Boston Celtics a huge boost of late, who are right on the heels of the Raptors in the standings. The Raptors recently beat the Celts at the ACC, but only took care of business in the fourth quarter when (you guessed it) they played some defense. Prior to that loss, the Celts had won five in a row. Look out!

Nevertheless, the Raptors have shown flashes of defensive prowess, particularly Kyle Lowry, Terrence Ross, Norman Powell, and defensive specialist DeMarre Carroll. Their agility and overall ability to force opponents to turn the ball over gives the Raptors the chance to literally run their opponents off the court. It would be nice to see a bit more of the fast break, since elite teams' defense can be so tough to break through, particularly on the road.

Going forward, the Raptors need to continue to listen to coach Dwane Casey's defense-first strategies and follow them to the letter. Then, and only then, will they be able to truly compete with NBA's elite.



Shaheen Karolia via Wikimedia Commons

The Air Canada Center Packed with Toronto Raptors Fan in 2014

Canadian Cabinet Shuffling

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1B ELECTRICAL

Justin Trudeau undertook his first major cabinet shuffle Tuesday, pushing out some Liberal stalwarts from the inner circle, while bringing up and coming MPs to more prominent roles. John McCallum was moved to being Canadian ambassador to China. He was a key player as former immigration minister, in bringing in 39,500 Syrian refugees. His replacement Ahmed Hussen, the first Somali-Canadian minister, came to Canada as an unaccompanied teenager and is one of the younger MPs appointed to cabinet.

Maryam Monsef was moved to the Status of Women file, with Karina Gould taking over as minister for Democratic Institutions. Monsef started off as the youngest cabinet minister, 31 years old, and an Afghani refugee who rose to prominence, showing what's possible in Canada. However, government handling of this file derailed it, with a lack of commitment to holding a referendum on electoral reform or not. In addition, the government established a committee with no clear-cut goals other than to investigate electoral reform.

After the committee made its report, Monsef criticized the committee for failing to do any work in parliament. She apologized, saying "In no way did I intend to imply that they didn't work hard, that they didn't put in the long hours, that they didn't focus on the task at hand." Additionally, the online quiz mydemocracy.ca pushed by her ministry was roundly criticized both in parliament and out as being misleading and vague, likened to a BuzzFeed quiz by some.

Trudeau picking Karina Gould as the new youngest minister, at age 29, is a turnaround. Gould, earnest and authentic, represents Burlington. She conducted her undergraduate thesis at McGill on electoral reform, giving her some background in the file.

Chrystia Freeland is getting a promotion to foreign affairs minister. This follows closing the Canada-EU free trade deal, seen as a clear victory for the former international trade minister. Replacing her is François-Philippe Champagne, instantly becoming a key player in the Liberal front bench. He previously worked under the finance minister, touting his idea of an Invest in Canada Hub. One of the planks of his vision is pitching a more unified image of Canada on the international trade scene.

Getting bumped out of foreign affairs of course is Stéphane Dion. He is supposedly been offered "a very senior position" but has requested time to consider. Meanwhile, he has wished Chrystia Freeland the "best of luck" in her new position.

Dion wrote in a statement from his office that "Now, [he] shall deploy [his] efforts outside active politics. [He] ha[s] enjoyed political life, especially when [he] was able to make a difference to benefit [his] fellow citizens. I emerge full of energy ... renewable! But politics is not the only way to serve one's country. Fortunately!"

MaryAnn Mihychuk has been removed from Cabinet as Labour minister to the backbenches. Mihychuk is quoted as saying "I've always been a strong advocate as a feminist, as a person who fights for jobs and I'll continue to do that[.]" outside her office in Winnipeg.



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