

Should UW Sever Ties with Israeli Institutions?
Page 7

David Bowie: A Music Legend
Page 9

Just What is Going on in Iran?
Page 5

facebook.com/TheIronWarrior

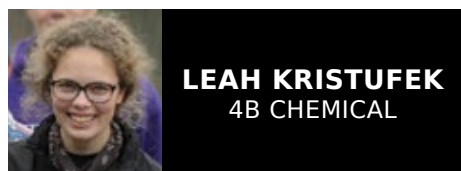
twitter.com/TheIronWarrior

iwarrior.uwaterloo.ca

California Gas Leak Continues to Affect Local Residents



Scott L via Wikipedia under CC BY-SA 2.0



LEAH KRISTUFEK
4B CHEMICAL

On October 23, 2015 methane began leaking from an underground storage facility in the Aliso Canyon Gas Storage Field near Los Angeles California. Today gas continues to spew out of the ground. The storage facility estimates it will still take until late February at earliest to stop the leak. In the meantime more than 2,000 residents will remain evacuated from the area for health reasons related to high exposure. Methane can bind to blood in the place of oxygen; symptoms can include headaches, nausea, vomiting, dizziness, weakness, and loss of coordination. In particular residents of the Porter Ranch community near the leak suffer increased incidents of headaches and bloody noses. Additionally, methane in high enough concentrations (4.4 to 17%) is highly explosive.

The methane leak has repercussions beyond creating health problems and for local residents. Currently 88 600 tonnes have been released at rates of up to 50 000 kg per hour. While the rate of release has been decreasing since they peaked on November 28, 2015, this continues to represent a significant emission. This is a big issue for not just California, but the world, as methane is a powerful contributor to the greenhouse effect. Generally energy from the sun which enters the earth's atmosphere is UV (400 to 10 nm), visible (400 to 700 nm) or near Infrared (0.75 to 1.4 μm) and is able to travel easily through the molecules in the atmosphere. However, energy radiated from the earth is long wavelength infrared (4-100 μm) which is easily captured by molecules like carbon

dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4). Green house gases then radiate heat, increasing the thermal energy being radiated to Earth's surface. Methane absorbs strongly within the wavelength region of 3.5 to 8 μm . Relative to one kilogram of carbon dioxide, one kilogram of methane has about 25 times more impact on climate change over a 100-year period. Once in the atmosphere methane takes approximately 12 years to break down.

Carbon dioxide and methane are the two largest greenhouse gases emitted by human activities in the United States according to the United States Environmental Protection Agency. Methane can also be naturally occurring and is given off by wetlands, landfills, and agricultural activities (manure management accounted for 10% of 2013 US methane emissions). The Aliso Canyon leak has been reported to represent approximately one fourth of the methane emissions from California. In a press release the company claimed that the estimated cumulative emissions from the leak represent approximately 1% of total emissions. Southern California Gas Co., the owners of the storage facility, had created a plan to capture and burn off escaping gas. However it was abandoned due to concerns of possible explosions. Burning the gas would have both halved emissions and relieved symptoms of methane exposure being experienced by the community.

More importantly, this disaster highlights lapses in oversight and design for methane storage and an increasing possibility that aged infrastructure may lead to further issues. The source of the leak has been identified as a well 914 m below ground. Repairing the leak requires crews to drill a new well deeper than the leaking well, then redirecting flow. Redirecting flow will require locating a 7 inch pipe

located just under 500 m below the surface and situated among other pipes. This will require magnetic-ranging techniques. High levels of methane represent a constant explosion hazard.

The Aliso Canyon facility was originally built for the oil industry approximately 60 years ago and was repurposed for natural gas storage after the oil fields went dry. Failing underground infrastructure not only increases the chances of leaks to the surface but could also endanger underground aquifers according to R Rex Parris, the lawyer representing residents affected by this current leak. They also pointed out that the continued injections of gas into the reservoir in the time after the leak occurred should have stopped much sooner. Serious problems have occurred in other facilities leading to lawsuits in Kansas, Texas, California, and Colorado for leaks which caused explosions and groundwater contamination.

Experts have been warning about the hazards of oilfields repurposed for methane storage for some time. In the book Gas Migration: The events preceding Earthquakes (2000), the authors warn that gas in abandoned oil fields can be over-pressured by repeated gas injections causing vertical fractures in rock, making surface leaks more likely. The breakdown of cement seals on active and abandoned wells also contributes to gas leaks. Brent Miyazaki, author of Underground Gas Storage (2009), agrees that gas injection causes pressure fluctuations which lead to a high probability of leaks and containment failures occurring at underground facilities. Furthermore, let's not forget that the San Andreas Fault runs only 56 kilometres north-east of Los Angeles.

Criticism has also been directed at authorities for failing to maintain staff with

adequate technical backgrounds to evaluate hazards and the city for allowing residential housing to be developed so close to the oilfield. Experts now call for a variety of measures to increase monitoring and routine gas migration studies. This is a challenging problem as the methane storage allows for reasonably priced fuel for 21 million people.

An overall lack of monitoring as facilities age is a problem also experienced in Canada. Three Waterloo professors addressed this issue from a Canadian perspective in their May 2014 report, Towards a Road for Mitigating the Rates and Occurrences of Long-Term Wellbore Leakage. In addition to the repercussions of potential leaks, they also address the economic impacts of remedial workovers on the industry.

Ultimately, this recent methane leak in California has served as a wakeup call to regulators and industry alike. Although this leak has made headlines due to its enormous effect on residents in the Porter Ranch area, there are many lessons to be learned for similar setups worldwide. Particularly in places where there aren't dense populations to quickly notice when things go amiss.

As engineers we design for a certain lifecycle assuming it will be followed and retrofits of designs can be a risky business. Personally this issue has reminded me of the importance of remembering to constantly validate that aged infrastructure is behaving as expected and to design in adequate redundancies so problems can be remedied more effectively than seen here. Monitoring of a system does not end when the lifecycle has finished, in fact often it should be intensified. For every decision there are repercussions and consequences which we must always keep in mind.

Letter from the Editor

Birthdays Are a Con



RAEESA ASHIQUE
EDITOR-IN-CHIEF

Last spring, when Cameron asked if I was interested in being the next Editor-in-Chief, I had to take a week to weigh the time commitment with my workload for school. But the more I thought about it, the more I realized that I would not have it any other way. Which is why your new EIC is super excited to start off this term!

Let me tell you, I love the paper. I signed up for the Iron Warrior mailing list during frosh week, and since then was the dedicated kid who wrote for every issue, but sat quietly in the corner during meetings. On co-op, I would meticulously read through the draft of the paper every Monday morning after production weekend, because who needs to do real work? By the way, I get a kick out of editing. My friends never ask me to read their papers last minute, because my feedback takes several days to implement.

Since joining, I've learned some things about myself. For one thing, I suck at writing news articles: I cannot handle a news piece without giving commentary. I am also very opinionated, and love controversial topics. Which is why I want to hear your opinions as well! If you have a comment on anything you read, send a Letter to the Editor to iwarrior@uwaterloo.ca

I want to start by paying tribute to Alan Rickman. I woke up that Thursday morning to two texts that "Snape died :(", which confused me because of course Snape dies in the seventh book. Shortly afterwards a notification from my BBC app clarified the situation. As the day progressed and I reflected on the loss of this amazingly talented actor to cancer, I felt more and more sad. He was a great man both on and off the stage: those who knew him spoke very highly of his compassion and loyalty, which contrasts the dark characters he played. I also have a very personal childhood connection to Snape, and Alan Rickman's death made me feel like the Half-Blood Prince had died all over again. Rest in peace, Alan Rickman. You will be missed.

Secondly, I have to thank my awesome team, which includes three past EICs on campus this term. In particular, I want to thank Cameron, who was EIC in Spring of 2015. He is incredibly helpful, putting up with my daily texts and always stepping up to do more than his role requires. This paper would not have been possible without his layout help, as well as Elizabeth's dedicated copy editing. This weekend was made even more hectic by the AFC and NFC championships, which quickly turned depressing with the Patriots' loss... Moving on... On the bright side, I am very

pleased with the content in this first issue of the term! Make sure to check out our PCP regarding the referendum to sever ties with Israeli institutions: you can find both sides of the argument, written by Josh and Filzah, on page seven. I realize this is a complicated, controversial and two-sided topic, but Cameron's overview of the conflict's background on page six is a great way to gain a general understanding. After getting informed, don't forget to vote on the referendum! Voting is open until January 27.

And now, to get into the "meat of the potatoes" (to quote my highschool history teacher) of my editorial.

I think birthdays and Christmas are a big con. Seriously.

So what's the deal with birthdays? Once a year, you are supposed to invite your friends over to bring you presents, as long as you provide the cake and possibly pizza. And what's the deal with Christmas? You are expected to buy a present for everyone. Some opt for more economical traditions, such as the Secret Santa gift exchange, but many do not. My family doesn't celebrate Christmas, so I was rather shocked when I discovered that it is normal to buy a present for everyone you know. The amount people spend in the holiday season is slightly insane. Now, I get that Christmas is good for the economy, along with Halloween, Boxing Day, American Black Friday, and all the other days on which people unnecessarily splurge. But personally, they all seem like overkill to me.

So why do we buy presents for each other? To avoid the awkwardness of being the one to arrive empty-handed? Because the calendar says the person is officially "older"? To be honest, it is partly my inner student speaking, but sometimes I am reluctant to attend a birthday dinner because I either do not know what to buy as a present, or I'm too cheap.

Now don't get me wrong: I'm not saying there is anything wrong with celebrating birthdays. I just don't agree with what has become the norm with regard to celebrating birthdays. I think well-planned gifts or celebrations are meaningful and can be really touching, but I hate hearing complaints when one doesn't receive a present, I hate the awkwardness when you are the only one who didn't bring a present, and more than anything, I hate ill-received presents.

When I was seven, I really wanted a stroller for my doll, and proceeded to throw a fit when I received said stroller that Eid because it didn't have a basket. My mom attached a bag to the bottom for storage, but I was still very upset. I think this incident is so clear in my mind because I am still disappointed with my younger self for lacking appreciation. If I understood at seven that I shouldn't have

overreacted, then anyone older should have the maturity and discipline to show grace, even when receiving a gift they did not want. At the end of the day, it's the thought that counts, so appreciate what you receive.

The slightly more extreme example that comes to mind is Dudley Dursley from Harry Potter, who throws a fit on his birthday when Uncle Vernon announces they bought him thirty-six presents, because "But last year, last year I had thirty-seven!" I know this is an exaggeration, and most people are not this spoiled. However, I think there is an inherent element of selfishness surrounding the birthday tradition. Birthday gifts have become an expectation, and entitlement automatically sets the bar high.

I'm going to slightly shift gears now.

Support for Syrian refugees was pouring in at an incredible rate towards the end of the 2015. The picture of the little boy who washed up on a Turkish beach really tugged at people's hearts, and the holiday season always inspires the spirit of giving anyway. In November, I heard about a Toronto couple, Samantha Jackson and Farzin Yousefian, who cancelled the expensive traditional wedding they had scheduled for this coming March including the venue, caterers, etc. Instead, they had a small wedding celebration at city hall, asking family and friends for donations instead of gifts. The money they raised went towards sponsoring a Syrian family of four.

Weddings are worth going all out for, as (most) people only plan on marrying once, so they want it to be special. A dream wedding is generally a grand event. But this couple was so selfless that they did not twice consider their sacrifice after coming to the decision that sponsoring a family was definitely the right thing to do. I think the satisfaction associated with this act of generosity is beautiful.

I obviously don't think this applies to us as students, considering most of us are not getting married right now and come on, we're all broke. But it is the principle that spoke to me.

When I think about how fortunate we are, I realize to what extent our habits are wasteful. My full closet is an all-too-accurate representation of this consumerist society, and I am ashamed to admit that I still have a constant urge to shop. Lately guilt has forced me to return all my recent purchases. I definitely did not NEED new clothes, just like no one NEEDS birthday presents. Let me tell you, groceries are the only items on my wishlist.

So if you want to celebrate your birthday, just have everyone pitch in and order pizzas. Expecting people to buy you birthday presents is a stupid and unnecessary tradition, so let's break the habit of wastefulness and stop acting so entitled.

THE IRON WARRIOR

The Newspaper of the University
of Waterloo Engineering Society

Editor-in-Chief

Raeesa Ashique

Assistant Editor

Cameron Soltys

Layout Editors

Cameron Soltys
Leah Kristufek

Copy Editors

Elizabeth Salsberg
Bryan Mailloux
Cameron Soltys
Leah Kristufek
Caitlin McLaren
Joshua Kalpin
Brigita Gubins
Tiffany Chang
Supreet Kaur

Circulation Manager

Vince Magas

Advertising Manager

Brigita Gubins

Photo Editor

Brigita Gubins

Web Editor

Bryan Mailloux

Staff Writers

Seamus Bannon
Tiffany Chang
Nina Feng
Brigita Gubins
Joshua Kalpin
Leah Kristufek
Vince Magas
Donovan Maudsley
Caitlin McLaren
Filzah Nasir
Elizabeth Salsberg
Nachiket Sherlekar
Cameron Soltys

Contributors

Abdullah Barakat
Jeff Gulbranson
Tristan Kuehn
Sarbjay Majumdar
Kevin McNamara
Leila Meema-Coleman
Ola Suchon
Pearl Sullivan
Adelle Vickery
Will Wilmot
Kyle Pohl
Hanna Nowak

ADVISORY BOARD

Off-Stream Editor-in-Chief

Bryan Mailloux

Executive Members

Sarbjay Majumdar
Teresa Lumini

Students-at-Large

Noah Bezaire
Devansh Malik

Advertise With Us!

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

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

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

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

Issue #2 Deadline: Friday, February 5 at 6:00pm for publication on Wednesday, February 10

Send your submissions to iwarrior@uwaterloo.ca

Winter 2016 Publication Schedule: January 27, February 10, March 9, March 23, April 6

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

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

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

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

Letter to the Editor

PEARL SULLIVAN
DEAN OF ENGINEERING

To clarify Donovan Maudsley's (2B Mechanical) November 18, 2015 article on the Engineering 7 groundbreaking, the Educating the Engineer of the Future campaign's total goal is \$70 million. Only \$45 million of that is destined for E7 construction, which in itself will cost \$88 million when completed in September 2018. The campaign fundraising is for a greater vision than just a much-needed building; our goal is to raise \$11.5 million

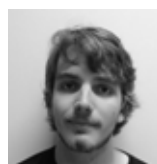
to fund student activities, plus \$10 million to establish Research Chairs in emerging technologies and finally, raise \$3.5 million more to support graduate scholarships. Of the \$55 million currently raised through private sector donations, \$36 million of it is being directed towards E7 construction, with the rest directed towards student experience, establishing Chairs, and graduate support. We still have a long way to go to achieve our campaign goal of \$70 million and pay for the \$88 million Engineering 7 construction. The logical question to ask is "why not just

fundraise \$113 million, which would be enough to cover the \$88 million building costs plus the other three areas of priority?" The simple answer is the vast bulk of money raised comes from our Engineering alumni, as well as few friends of Waterloo Engineering and some of our industry partners. Because we are a young University, founded in 1957 and with only 41,000 Engineering alumni, we do not have an unlimited pool of resources to draw upon, and we must carefully establish fundraising goals that are both realistic and attainable. We are continually humbled

by the generosity of our donors who share in Waterloo Engineering's vision, and we strive to create valuable partnerships with the private sector, industry, and government to help achieve our goals. And yes, Mr. Maudsley is correct, it is "a daunting task for any organization," but here at Waterloo Engineering we are determined to tackle the challenges that would impact the future of the Faculty.

Sincerely,
Pearl Sullivan
Dean of Engineering

John Scott: Hard Work Wins Hearts



DONOVAN MAUDSLEY
2T MECHANICAL

John Scott is a very good hockey player, among the general population. Among the pro players in the NHL, he's nothing special. Scott went to college at the Michigan Technical Institute and played four years of NCAA hockey while studying Mechanical Engineering. If you think about what you do on a regular week, that fact alone is remarkable. Being committed enough to both your hockey career and getting a degree, and being determined enough to do them both, seems insane to me. Scott plays an aggressive, enforcer style of power forward, and had an unremarkable junior and college career. In four years at Michigan Tech he racked up 19 points and 347 penalty minutes.

After graduating, Scott joined the Houston Aeros, the farm team for the NHL's Minnesota Wild, as a free agent. He played 2 whole seasons with them, splitting a third season between the AHL and the NHL, before making the Wild's roster in 2009. Since then, he's bounced around, and narrowly missed getting his name on the Stanley Cup with the Chicago Blackhawks. At the start of this year the journeyman forward joined the Arizona Coyotes, and played just around a dozen games throughout the first half of the season. Throughout his entire career he has scored 5 goals.

The controversy surrounding John has to do with the NHL's All-Star Game Balloting. This year, the fans got to vote online for the captains of the four teams, one per division, with the rest of the players selected by the league. The vote allowed fans to vote for whoever they wanted, regardless of their qualifications for being an All-Star. This format is similar to one that the NBA employs for their All-Star game. Fans got to vote up to ten times a day, and of course when the internet gets involved, nothing is going to go wrong. Some enterprising fan thought that voting Scott the captain of his divisional team would be a funny joke, since his style of play does not really match the All-Star style.

When asked about the campaign for his captaincy early on he was not overly enthused, but as his bid became a reality he got more and more excited about it. The winning team on All-Star weekend splits a million dollar prize, which would be a big deal for Scott. His family also began to get excited. Scott and his wife have two kids and a set of twins on the way, and the bonuses and prize money could really help them out. Then something really strange happened, when the internet's heart

grew three sizes. People started to find out that Scott is just a hard-working good guy, and the campaign turned from an internet joke to a feel good story.

The NHL feels very strongly about its All-Star weekend. For them, it's nothing to joke about at all. For everyone else it's a slight distraction from the regular season, and a weekend for most of our favourite players to rest. The NHL doesn't really like it when anyone questions the sanctity of the All-Star weekend, so they were not overly impressed when the campaign for John Scott started picking up steam. They stopped promoting the fan vote to try to quell the tide. When the announcement came in early January that Scott would be captaining the Pacific Division's team there was a collective cheer from fans involved. The NHL had other plans though.

Shortly after being named captain Scott was asked by both the NHL and his own team's organization to step down. The Coyotes wanted to showcase one of their other players, a rising star like Max Domi or their captain Shane Doan. Scott declined, having finally warmed to the idea of a trip to Nashville to play with the sport's best. The NHL had other plans, though. On the afternoon of Friday January 15th, the universal time for bad news, the league threw a temper tantrum. A trade was orchestrated between Scott's Coyotes and the Montreal Canadiens which sent Scott to play for Montreal's farm team in St. John's. This trade officially disqualified him from playing in the All-Star game. It also uprooted Scott and his family and virtually ended any future that Scott would've had playing in the top league. It looked like Scott was going to pay the price for being made captain.

There was sizable backlash when this announcement was made, as fans knew that Scott's dilemma was a direct result of the voting campaign. Scott himself seemed disappointed by the move, but seemed ready to accept what had happened. He had a few options though. The monetary nature of the bonuses and prize opportunities that had been presented to him and then taken away meant that he could sue the league through the NHL's Player's Association. While the league could definitely take the hit from this, the bad press that it would've generated and the stigma towards the All-Star game would have had a strong negative impact. The league is already criticized for its outdated player conduct review policies. On January 19th the NHL gave in to popular demand and made John Scott an All-Star once more. I look forward to watching Scott play in what will probably be his last, and most memorable, NHL game.

After All This Time



BRIGITA GUBINS
2A ENVIRONMENTAL

The passing of a giant in the film industry is always a sad occasion. The man you may know as Professor Snape, or perhaps Hans Gruber, or maybe even one of his numerous stage roles, died of pancreatic cancer this past month at the age of 69.

Rickman was born in 1946 in Acton, London, to Margaret and Bernard Rickman, in a working class family with 2 brothers, David and Michael, and a sister Sheila. Unfortunately, his father died when Alan Rickman was only 8 years old. Throughout his school years, Rickman excelled in the visual arts with an emphasis on watercolour painting and calligraphy. In secondary school, he became involved with drama; however, upon graduation he decided that graphic design was a more stable career than acting and studied at Chelsea College of Art, and later Royal College of art.

During his studies in visual art and graphic design, Rickman worked as a graphic designer for the Notting Hill Herald, and on the completion of his studies, he opened his own graphic design studio, called Graphiti, with several friends.

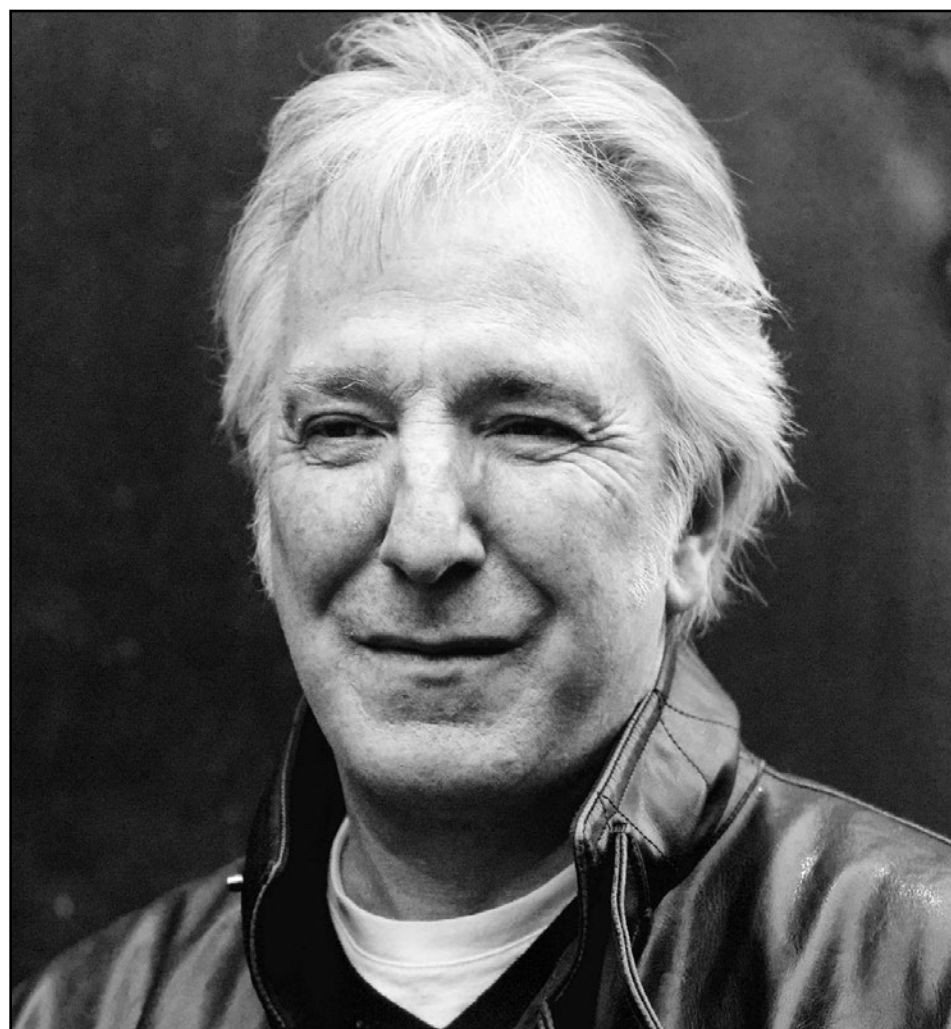
After 3 years of successful business at Graphiti, Rickman's passion for the dramatic arts had not subsided, and he decided that if he was ever going to pursue a career as an actor, it was now or never. Af-

ter auditioning at the Royal Academy of Dramatic Art, (RADA,) he was accepted and attended the school from 1972-1974. While studying Shakespeare in drama school, he worked as a dresser, (essentially a stage-hand whose sole job is to tend to costumes,) for two celebrated actors, Sir. Nigel Hawthorne and Sir Ralph Richardson.

After graduation from RADA, Alan Rickman performed with British repertory and experimental theatre groups in smaller productions. In 1985, he was given the male lead role in the Royal Shakespeare Company's production of Les Liaisons Dangereuses, as Vicomte de Valmont. He would go on to receive nominations for both Tony and Drama Desk Awards for his portrayal of this role on Broadway in 1987.

Although Rickman's career only took off in his 40's, the man was an exceptionally talented actor who played a wide range of roles throughout his lifetime, despite the common perception of his being typecast as a villain. While his two most famous roles in Die Hard and the Harry Potter series may have been villainous, Rickman received over 16 awards in his acting career. In addition to being on stage and in front of the camera, Rickman was an accomplished director, having co-wrote and directed several major productions of his own, including The Winter Guest and My Name Is Rachel Corrie.

While the man with the near-perfect voice may no longer be with us, for his extraordinary talent, he will be remembered. Always.



"Alan Rickman BAM" by Marie-Lan Nguyen via Wikimedia Commons under CC BY 3.0



PMO Photo By Adam Scotti, used under Fair Dealing

Trudeau toured the University of Waterloo and announced funding for water technologies

Trudeau Visits Waterloo Announces \$12M Investment in Water



NINA FENG
4B ENVIRONMENTAL

Prime Minister Justin Trudeau visited Waterloo's campus on January 14 as part of a visit to the region considered to be Canada's hub for technology and innovation. Accompanied by the Minister of Innovation, Science, and Economic Development, the Honourable Navdeep Bains, Trudeau's trip involved visiting developing start-ups at Velocity, including their expanding science division; touring the BlackBerry headquarters; and participating in the opening of the new Google offices in Kitchener-Waterloo. The PM has since praised the university at an international level at the World Economic Forum, touting the brilliance of the ideas and the diversity of the students.

The Prime Minister's visit aims to help in the development of strategies to facilitate research and innovation for environmental and economic sustainability. Most notably, he addressed a crowd in Needles Hall and announced a funding initiative that will see \$12 million in funding allotted to water research. The money, vested to the Southern Ontario Water Consortium (SOWC), hopes to help develop technologies in water treatment and groundwater testing.

The SOWC provides development for climactic and watershed data analysis,

drinking water treatment, toxicology, contaminant detection, wastewater treatment, and groundwater monitoring and remediation. It is a group of post-secondary institutions that aim for environmental cleanliness, which will now be able to collaborate with 90 businesses and organizations in the expansion of about 80 different projects. The University of Waterloo is involved in a substantial number of the projects, along with institutions that include the University of Toronto, the University of Guelph, McMaster University, and Wilfrid Laurier University.

One of the projects being developed involves node-based water shed monitoring involving over a hundred sensors that collect hydrology data relating to climate, as well as the soil moisture and water table elevation in the subsurface. Another project involves a mobile membrane plant that can be used in the field for water treatment on a pilot scale. Furthermore, high-tech sensors capable of detecting contaminant such as pharmaceuticals—an emerging contaminant for which there has been relatively little research into their removal from water—are also being developed. The university houses many labs dedicated to this work.

The research and innovation to follow will help to improve wastewater management in municipal treatment plants, thereby increasing efficiency, reducing risk of failure, and generally enhancing human and environmental health.

Experimental Drug Trial Gone Wrong



NACHIKET SHERLEKAR
4B NANOTECHNOLOGY

In an unfortunate and tragic accident involving the clinical trial of an experimental drug manufactured by Portuguese pharmaceutical company Bial, one person was left dead and five others critically ill in a clinic in north-west France. The trial was being conducted by the French company Biotral on behalf of Bial. One hundred and twenty eight healthy volunteers between the ages of 18 and 55 were recruited for this study, having been paid 1,900 euros each. Ninety of these volunteers were administered with different doses of the drug, while the rest were given a placebo.

The drug in question, known as BIA 10-2474, was designed to act as a painkiller to treat anxiety and motor disorders associated with Parkinson's disease. Early reports claimed that the drug was a compound related to cannabis; these claims were however dismissed by the French Health Minister. The hospitalized volunteers were the first to receive multiple doses of the drug, which resulted in severe symptoms including bleeding brain tissues.

Since news of the incident broke, several scientists have raised concerns regarding the protocol used for the trial. Particularly, questions have been raised regarding the interval of time between the dosing of successive volunteers. Certain reports claim that Biotral began giving the six volunteers doses of the drug simultaneously, which would be a mistake since the standard protocol calls for a delay between doses for different volunteers.

Speculations are also being made with regards to the actual chemical structure of the drug, and how it could have resulted in the symptoms that were observed. According to an unconfirmed clinical trial report obtained by a French newspaper, the drug has a pyridine oxide structure, and is meant to inhibit fatty acid amide hydrolase enzymes, preventing the breakdown of cannabinoids in the brain.

The last major incident involving the failure of a clinical trial took place in London in 2006, resulting in six men suffering permanent organ damage and the loss of fingers from severe immune reactions during the testing of an arthritis and cancer drug candidate. As more information regarding the current incident is gathered, it is hoped that the knowledge gained can be used to prevent such catastrophes in the future.

WWW.CHAINSAWLOVERS.COM

\$2 BUCK TUESDAYS
EVERY TUESDAY

\$10 PITCHERS
THURSDAYS BEFORE 11PM

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

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

BIGGIE-UP
ANY DAY ANY TIME

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

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

PRESENT THIS COUPON AT TIME OF ORDERING

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

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

Just What Is Going On In Iran?



CAITLIN MCLAREN
3T CHEMICAL

2016 has been a big year for news from Iran, and it hasn't even been a month yet. Naturally, there is both good news and bad; Iran is ever a source of controversy.

Increased Tensions with Saudi Arabia

In the New Year, Saudi Arabia executed 47 people on charges of terrorism. One of those executed was Sheikh Nimr al-Nimr, a prominent Shiite cleric who was well-known for speaking against the (Sunni) Saudi monarchy. Many believed that this was the reason for his execution. The news of his execution was met with outrage from many quarters, particularly from Shia-majority Iran. The Saudi embassy in Tehran was attacked by an angry mob of protesters, who damaged the building and attempted to burn it down. They were stopped by riot police, who made numerous arrests. Thankfully, there were no casualties; the attacks took place when the building was empty. The protests were condemned officially by Iran's President Hassan Rouhani, who strongly denounced the execution of al-Nimr, but said, regarding the attack on the Saudi embassy, "In no way is this justifiable."

Saudi Arabia was outraged by the attack on the embassy; the two regional powers have long been at odds, and since last year have been involved in something of a proxy war in Yemen, with Saudi Arabia backing government forces, and Iran backing Shiite Houthi rebels. In the aftermath of the attack, Saudi Arabia cut diplomatic and economic ties with Iran. In response, Iran banned the import of products from Saudi Arabia, and placed a moratorium on pilgrimages to the holy cities of Mecca and Medina (Saudi Arabia makes billions of dollars every year from these pilgrimages). Meanwhile, the Iranian embassy in Sanaa—the capital of Yemen—was damaged by a Saudi airstrike; many suspect that this was no accident.

The tensions have spread beyond those two countries; Bahrain, Sudan, Djibouti, and Somalia have also cut ties with Iran. Kuwait and Qatar have recalled their ambassadors to Iran, and the United Arab Emirates has also cooled its Iranian relations. There are fears that this will further destabilize the Middle East, which is already torn by conflict in Iraq, Syria, Yemen, and beyond.

Iran Captures and Releases Trespassing Sailors

In early January, two small American navy boats en route from Bahrain to Kuwait strayed into Iranian territorial waters near Farsi Island in the Persian Gulf, where the Iranian Revolutionary Guard has a naval base. While at the time of writing it is unclear exactly how the boats ended up in Iranian waters – there were early reports of engine problems, but evidence now seems to point to a navigational failure—the United States insisted that it had been an accidental incursion. Iran boarded the vessels and took the crew into custody. After searching the boats and questioning the sailors, Iran came to the same conclusion—it was unintentional. The ten sailors were released unharmed the next morning, and the Iranians towed the American boats back into international waters.

While the outcome was thus peaceable,

the incident started a firestorm of controversy. In the first place, the Iranian military took photographs and video footage of the captured sailors. One depicts the sailors surrendering, kneeling with their hands behind their head; the other shows them in a holding room, with one, identified as their commander, apologizing for the intrusion and thanking the Iranians for their hospitality. There was a great deal of debate over the videos. Many, particularly those with right-wing and generally anti-Iran views, argue that the video was taken for propaganda purposes and meant to humiliate America. These people point to the kneeling posture of the soldiers, as well as to the fact that the female member of the crew was apparently wearing a headscarf. There are suggestions that the apology in the video was given under coercion. However, there is no evidence that this was the case; others point out that the video also depicts the Americans being held all together in reasonably comfortable conditions and being served food. Furthermore, the argument that Iran was acting aggressively and attempting to humiliate America tend to gloss over the fact that members of the U.S. military had unquestionably entered into Iranian territory without permission.

While the details of the story are still not well known, it has caused heavily partisan debate in the United States. The incident took place mere hours before President Obama's State of the Union Address; however, Obama made no mention of it during his speech. For this reason, he has come under fire from Republicans, who accuse him of weakness and working to placate Iran. His defenders, on the other hand, argue that the government was already working to secure the release of the sailors, and that addressing it publicly so soon might have jeopardized a sensitive negotiation. On the Republican side, this was a very key point during the recent primary debate, with the top two Republican front-runners Donald Trump and Ted Cruz both referring to the issue in their closing statements. Trump, in his usual bombastic style, declared that he had been with a large group of construction workers when the news of the sailors' detention broke, and that the shock and horror had made half of them cry. In general, Obama's critics accused him of being far too soft on Iran and failing to show strength; when the sailors were released, they attributed it to the fact that Iran was due

to receive \$150 billion when the nuclear deal was implemented. Meanwhile, the Obama government describes the story as a success; the sailors were released quickly, and an international incident was avoided. Furthermore, the speedy resolution was at least partially due to the administration's policy of negotiation with Iran; there is now a certain amount of communication between Iranian and American diplomats, and U.S. Secretary of State John Kerry was able to discuss the matter directly with Iranian Foreign Minister Mohammad Javad Zarif. Up until quite recently, this would not have been possible.

Nuclear Deal Implemented, Sanctions Lifted

The long-negotiated and highly controversial nuclear agreement between Iran and the P5+1 (China, France, Russia, the United Kingdom, the United States, and Germany) was implemented on January 16. According to the International Atomic Energy Agency, Iran has now complied with the standards agreed upon in the Joint Comprehensive Plan of Action which was agreed upon last year. There were four major requirements that Iran had to fulfill: they shipped 25,000 pounds of enriched uranium to Russia, they dismantled two thirds of their centrifuges, they removed the reactor core of the IR-40 heavy water reactor at Arak and filled it with concrete, and they allowed access of nuclear facilities and their supply chains to IAEA inspectors.

The agreement was highly controversial in both Iran and the United States, with conservatives in both countries arguing that the deal meant their own country's capitulation and a victory for the other side. However, it appears that a majority, although not necessarily an overwhelming majority, in both countries support the deal.

As the deal is implemented, Iran is now due to receive around \$150 billion in sanctions relief. Contrary to some claims, it is not being "given" to Iran; it is from Iranian assets that were frozen due to sanctions. Allowing for settling debts, the actual amount of money that Iran receives will be closer to \$55 billion. As Iran faces economic difficulty and high inflation, this is important for Iran's economy. The deal is also expected to affect the world's economy by causing oil prices to drop significantly. Iran's oil exports are expected to double in the future.

However, there are still a number of sanctions against Iran for different

reasons; only the nuclear-related sanctions have been lifted. Sanctions relating to missiles and other weapons, sponsorship of terror, human rights, and destabilizing activities still remain. Furthermore, very soon after the implementation of the nuclear deal, America placed several new sanctions against Iran. This was partially due to an Iranian missile test last year, which many saw as threatening; America claims that it would be capable of carrying a nuclear warhead and is thus forbidden. Iran denies this. Foreign Minister Zarif, opposing the new sanctions, describes America as having an "addiction". The new sanctions are against eleven organizations—five individuals and several companies—who are associated with the Iranian missile program; they are now barred from using the U.S. banking system.

Prisoner Exchange

At nearly the same time as the implementation of the nuclear deal, Iran released four Americans imprisoned in Iran in exchange for seven Iranian prisoners in America. Those prisoners have been a source of public concern for some time.

Of the four prisoners, the most high-profile is reporter Jason Rezaian, a dual American-Iranian citizen and bureau chief for The Washington Post in Tehran. He was arrested in July 2014 on several charges, with the main one being espionage. His family and The Washington Post vehemently denied this. Late last year, he was tried behind closed doors; not even the nature or length of his sentence was released to the public. His family also grew worried about his health, as he suffered from high blood pressure and other health issues and was not given adequate treatment. Fortunately, he was released on the 17th and flew to America with his mother and his Iranian wife. At the last moment, it seemed that Iran was unwilling to allow said family members to accompany him, but the issue was sorted out by Kerry and Zarif.

Another released prisoner is Saeed Abedini, a Christian convert and pastor who was arrested for organizing Bible classes in Iran. Christianity is not illegal in Iran, and there is a sizeable Christian population as well as government representation of the Christian community. However, it is illegal for Muslims to convert to other religions or to encourage other Muslims to do so.

Continued on page 16 as Just What Is Going On In Iran?



The American sailors as they surrender to Iranian forces

Via IRIB, used under Fair Dealing

The Israeli-Palestinian Conflict

An Article of Context for the Severing Ties Referendum



CAMERON SOLTYS
3A MECHANICAL

The Federation of Students (Feds) is holding a referendum on the University of Waterloo's association with several Israeli academic institutions, and polling takes place from January 25 to January 27. The text of the referendum reads as follows:

“Do you think the University of Waterloo should sever ties with the following institutions due to their complicity in violations of the human rights of Palestinians: University of Haifa, Hebrew University of Jerusalem, Technion - Israel Institute of Technology, Tel Aviv University, and the Weizmann Institute of Science?”

Calling the Referendum

The petition for the referendum was organized by the Palestine Solidarity Action Group (PSAG) —part of the Waterloo Public Interest Research Group (WPIRG) —and EthicalCollabUW. It is a part of the Boycott, Divestment and Sanctions (BDS) campaign which is encouraging non-violent punitive measures against Israel. The goal of this movement is to pressure Israel to:

Return to the 1967 borders and dismantle a 700 km security wall that splits 9.4% of the West Bank from the rest of the territory

Recognize the fundamental rights of Arab-Palestinian citizens

Respect the right of Palestinians to return to their homes and property per UN Resolution 194

The referendum was called after Feds received a petition with 4000 signatures calling for a referendum based on the above text. 2900 of the signatures were verified as belonging to voting members of Feds—which includes undergraduates

of Waterloo or full-time Feds staff members—which was sufficient to allow the referendum to occur.

The referendum will be binding “only if the number of votes cast for the option that received the most votes is at least seven percent (7%) of the voting members of the Corporation” according to the Feds bylaws.

Historical Context

Starting in the late 19th century, a Jewish nationalist movement called Zionism began to emerge in eastern Europe. Spurred by rampant anti-Semitism, Zionists desired to re-establish the Jewish land of Israel. This was to be a refuge for the Jewish people who had been dispersed by various conquerors over the millennia. The practical outcome of this movement was a migration of Zionists into Palestine, often funded by Zionist groups outside of Palestine.

In the aftermath of WWII, the world learned about the horrors of the Holocaust, which was the massacre targeting numerous groups—most frequently Jews—that the Nazis found undesirable. The Allies found that many of the Jewish displaced persons (DPs), as the survivors were called, were unwilling or unable to return to their homes due to continuing anti-Semitism and instead attempted to travel to British-controlled Palestine. With mounting pressure to deal with the DPs and the continued push by Zionists for Jews to immigrate to Palestine, the idea of a Jewish state became increasingly popular internationally.

Britain, entering into a period of decolonization and general loss of power after WWII, handed the issue of Palestine over to the UN. The UN decided to separate the territory into Jewish and Palestinian sections, although each section would contain some minority of the other party. Civil war broke out between militias.

On May 14, 1948, Israel declared independence. The next day, Egyptian, Syrian and Jordanian forces attacked the Israeli territory. Israel managed to win the war, largely through poor collaboration by the Arab states, capturing 60% of the territory that the UN had allotted to the

Palestinians.

The rest of the 20th, and now early 21st, century has been dotted with wars, peace talks, and crises between Israel and its neighbours. A few of them are listed below.

In the 1954 Suez crisis, Israel invaded Egypt to give Britain and France an excuse to regain control of the recently-nationalized Suez Canal as a defensive measure. The crisis was eventually resolved through the mediation of UN peacekeepers and resulted in an Israeli retreat.

During the 1967 Six Day War, Israel launched an enormously successful preemptive strike against its mobilizing neighbours; the strikes destroyed the entire Arab air capability and allowed Israel to capture the Sinai Peninsula up to the Suez Canal and the Gaza Strip from Egypt, as well as the Golan Heights from Syria and the West Bank from Jordan. These captured territories are what is now referenced when demands are made for Israel to return to its pre-1967 borders.

During the 1972 Summer Olympic Games in Munich, the Palestinian militant group Black September took 11 Israeli competitors hostage. They demanded the release of hundreds of Palestinians and non-Arabs jailed in Israel. All of the hostages and many of the militants were killed in a lengthy, poorly-managed rescue attempt by the German authorities.

The Yom Kippur War of 1974 began with a surprise attack by an Arab coalition on the Jewish holy day of Yom Kippur. The coalition intended to regain the territory occupied by Israel in 1967. While both the Egyptian and Syrian campaigns began well, both eventually lost territory in the Israeli counter-attack.

The 1978 Camp David Accords, signed by Egyptian President Anwar El Sadat and Israeli Prime Minister Menachem Begin at Camp David, the U.S. Presidential country retreat, led to the first normalization of relations between an Arab nation and Israel.

Modern Situation

Today Israel is considered to be occupying the West Bank, the Gaza

Strip and Golan Heights, having returned Sinai to Egypt. In 2005 Israel unilaterally disengaged from the Gaza Strip, removing Israeli settlers and disbanding military bases in the region. The continuing control Israel exerts over Gaza's borders has resulted in the UN still regarding Gaza as an occupied territory.

Gaza and the West Bank were both administered by the Palestinian National Authority (PNA) until 2007, when Hamas, a Palestinian political and militant group, took over control of the Gaza Strip. In 2014, Hamas kidnapped three Israeli teenagers to put pressure on Israel and Egypt to lift the blockade instated after the takeover. Spiralling violence led to Hamas rocket attacks on Israeli cities and Israeli airstrikes in the Gaza Strip. The blockade remains in effect today.

In the West Bank, the PNA (now calling itself the State of Palestine) controls the security and civilian administration of urban areas, and the civilian administration of rural areas. Israel controls Israeli settlements, roads and the Jordan Valley region. The continued expansion of Israeli settlements in the area of the West Bank that Israel administers, decried as illegal by the UN, is a point of enormous contention between the two parties as it violates the idea of returning to the pre-1967 borders.

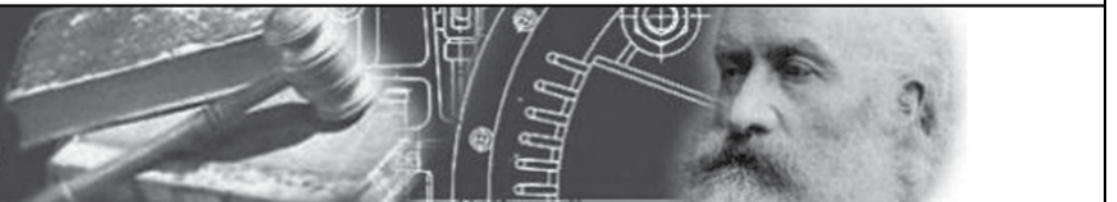
Another large issue, one specifically mentioned by BDS, is the construction of an Israeli barrier near, but not exactly on, the 1967 boundary line. The barrier has been under construction since 1994. Israel claims that the wall is an effective measure to eliminate the threat of suicide bombers, and the number of bomber attacks have been greatly reduced or eliminated in areas where a continuous wall has been built. Critics, however, protest that the barrier is often built within the West Bank. In some cases the border is built to include the aforementioned Israeli settlements. In other cases it completely or almost completely cuts off communities of Palestinians from the larger part of the West Bank. The wall, Palestinians claim, cuts their access to education and medical resources in Israel.



Sandford Fleming Foundation

Professionalism.
Leadership.
Communication.

There's more to an engineering education than engineering.



The SFF Memorial Leadership Award Nominations

In recognition of the late Professors Saip Alpay and Wm. C. Nichol, and Sam Ceccerallo, Robert Elligsen, later former students of the Faculty of Engineering

The Leadership Award is granted to an intermediate-level undergraduate student in the Faculty of Engineering who has demonstrated outstanding contributions to the Faculty in the promotion of extra-curricular activities, including, but not limited to: Intramural Athletics, promotion of Engineering Society and Sandford Fleming Foundation events, competitions, etc., and for the support of associations, both on and off campus.

Nominations for the Memorial Leadership Award can originate from student groups, faculty members, or other individuals. A Letter of Nomination and Letters of Support from colleagues, faculty, and others familiar with the nominee's accomplishments are extremely important and form the major basis upon which the Executive Committee of the Sandford Fleming Foundation will form its decision. Nominations must be submitted to the Foundation by August 31, 2015 and/or before the last day of the student's 3A term.

The Memorial Leadership Award consists of a Certificate plus a citation, and an honorarium of \$1,000.

Nominations Must be Submitted to SFF Office Manager by October 1, 2016

E2-3336, Extension 84008, sff@engmail.uwaterloo.ca
www.eng.uwaterloo.ca/~sff

Point Vs. Counterpoint

Should the University of Waterloo Sever Ties with Israeli Institutions?

POINT 

FILZAH NASIR
4B ENVIRONMENTAL

There are three facets to this referendum topic one should understand to vote yes: that the academic institutions listed in the referendum are complicit in human rights violations, that an academic boycott is an effective way to address this, and that it is our place as students to take a stand against these violations. I am going to use this opportunity to address each of these points and convince you of them.

First we must believe that human rights violations exist in Israel-Palestine. The evidence for this is readily available and widely circulated. Israel is in violation of international laws and United Nations resolutions. Human rights organizations such as Amnesty International and Human Rights Watch have issued countless reports which list the ongoing abuses of human rights and the unfair treatment of Palestinians taking place currently. Based on recent UN General Assembly votes, the international community outside of North America is in consensus about this. These are facts widely available and this is not what I am here to prove. What I'm trying to prove is the relevance to the academic institutions we are being asked to boycott.

In order to understand the connection between the Israeli occupation and these academic institutions, we must first understand that academia does not exist in a bubble. They are political, and hence there are political motives and implications behind everything that occurs in academic institutions. These implications affect the research conducted at universities and even dictate who studies at these institutions. Further, those who fund the research may be interwoven in a political motive of some nature.

Case in point: last week, Canadian Prime Minister Justin Trudeau praised UW at the World Economic Forum. Our university has a place on the international stage, and there are direct political implications of things that take place on our campus. The same is true of these Israeli institutions.

There are political implications of the work done at these universities. And unfortunately, this work currently supports and helps to further illegal Israeli occupation in the West Bank as well as the siege of Gaza. Out of the five institutions, UW's main partnership is with the Technion — Israeli Institute of Technology. This is the institution which helped develop the bulldozer used to demolish Palestinian homes and build settlements in the West Bank which, again, is in direct violation of international law. Students at these institutions have been arrested for speaking out against government policies. Academics who have shared dissenting views at these institutions have faced repercussions.

Nobel Peace Prize Laureate and Archbishop Desmond Tutu whose work was instrumental in ending the apartheid regime in South Africa stated, "Israeli Universities are an intimate part of the Israeli regime by active choice. While Palestinians are not able to access universities and schools, Israeli universities produce the research, technology, arguments and leaders for maintaining the occupation." Israeli institutes are also complicit in maintaining the state of apartheid in Israel. Israel boasts the fourth-largest army in the world, with every Jewish Israeli, male and female, required to serve in the military. Due to the hyper-militarization of this society, the academy is very intimately involved in this occupation.

Universities are not immune from what goes on around them—they do not get a free pass as being above politics. In Canada, we need only look at our recent history of residential schools to remember that education can, and often does, play an extremely brutal role in furthering the political motives of governments.

Okay, so human rights violations exist in Israel-Palestine and these universities are implicated in these violations. What is the role of an academic boycott? This referendum is part of a larger global movement, known as BDS (Boycott, Divestment, and Sanctions). BDS is a call put out by Palestinian civil society in 2005 as a peaceful, non-violent way to address the Israeli occupation. It hopes to put external pressure on the Israeli government in order to force Israel to comply with international law. The movement is inspired by a similar movement which was used in the era of South African apartheid and was instrumental in bringing down the apartheid regime. The BDS movement is over ten years old, and has gained international momentum during that time as well as notable support from individuals such as Stephen Hawking and Desmond Tutu.

Academic boycott, which is one aspect of the larger BDS movement, seeks to address the role of Israeli institutions in furthering the illegal occupation as well as to recognize the unequal access to education in Israel-Palestine. Opponents to the boycott often cite the loss of academic freedom as a key reason to vote no.

However, this argument fails when you consider that there is already a lack of academic freedom for Palestinians living under the West Bank. First, students are often forced to go through military checkpoints simply to attend school. Second, Israeli students are only taught one side of the conflict for their entire education — they have been taught to ignore centuries of Palestinian history, society, civilization and land. Finally, both Israeli and Palestinian academics have become unable to speak out against the occupation for fear of job loss or worse.

Even here at UW, the existing exchange programs with Israeli institutions are not open to all UW students. Many UW students, particularly Palestinian students, are unable to access these opportunities because visas to Israel are determined on the basis of ethnicity, rather than citizenship. This violation of academic freedom is happening directly on our campus.

What does this have to do with UW students? UW has partnerships with these institutions. We are conducting research, setting up exchange programs, and actively collaborating with them. In essence, we are endorsing their work. Endorsing work which is resulting in the direct loss of lives. We can't enter into these partnerships and then claim that we are "neutral". And we cannot enter into partnerships and then claim that we are not endorsing this work. Finally, we as students cannot allow the administration to speak on our behalf.

Student movements have always played a significant role in social movements and creating change. In recent years, the Quebec student strike resulted in the resignation of the province's Premier. Last fall, student protests against racism at the University of Michigan resulted in the resignation of the university president. Student protests across American universities around their government's role in the Vietnam War were significant in ending the war. If we are aware that these human rights violations are occurring and we are aware of our role in them, then the question is: what are we choosing to do? If the answer is nothing, then we are inherently taking a side.

Voting yes in this referendum is an opportunity to make a collective statement regarding our belief in justice and equality. It is a chance to say that UW students are intelligent and aware of the world around us, and are willing to challenge the status quo to take a stand which will be remembered throughout history.

JOSH KALPIN
4B SOFTWARE

Feds is currently holding two referenda. The first deals with an extension to the SLC and PAC to increase student space. The second, which happens to be taking the thunder away from the first one, is about whether Feds should take the stance that the university should sever ties with a number of Israeli institutions that are allegedly supporting atrocities against the Palestinian people. This referendum discusses something that should not be a student union issue, is opening a can of worms that could lead to more frivolous referenda, and is singling out a country for human rights violations when many other countries UW has an affiliation with do as well. What this will not focus on is anything related to the Israel-Palestine conflict, as that has been debated to death and is a complete waste of time to argue about.

The first reason that the referendum on severing ties with Israel should be voted down is that the whole idea of having Feds take a stance on this issue is completely ridiculous. Feds represents all students, and that includes students from Israel as well. By having a referendum that could lead to taking a stance on a specific country's universities is implicitly discriminatory against those who come from that country. How would you feel if you attended a university in another country where the student union decided that the country should go to war with your homeland? You'd feel unsafe and not want to be there. This is exactly what this referendum is doing.

Furthermore, we should direct our student union to be focusing on issues that matter to all or a majority of students which are university related and not world politics related. Why aren't we holding a referendum on where our student fees go, or whether we need more mental health counselors? These are issues that currently affect students attending our university. How does severing ties with institutions in another country directly affect undergraduate students besides closing opportunities for exchange, co-op, research, or diversity? At UW, students constantly complain that Feds doesn't do anything, so why should we empower them to do something that is completely useless?

The second key argument against voting yes in this referendum is that allowing Feds to take a stance on this issue would set precedence for Feds taking stances on other trivial or political issues. For example, why wasn't it an issue that the university had a campus in the UAE, a country known for many human rights violations, especially against women and the LGBT community? Why hasn't Feds taken a stance on the university accepting a certain number of refugee students? It's because these are not student issues: they are political issues. The federation should be representing students on student issues, not on foreign policy.

The last argument for voting no in this referendum is that it specifically singles out one country for human rights violations, when the university holds numerous research agreements with universities in other countries around the world that also have human rights violations. I want to name two countries in particular: Saudi Arabia and China.

Saudi Arabia has committed numer-

COUNTERPOINT 

ous human rights violations and is openly discriminatory against women, the LGBT community and many other minority groups. The country also has a terrible track record with freedom of the press, and has executed members of the press in the past.

China has also had a poor human rights record for many years. The way it handles Taiwan and Tibet is incredibly controversial. It is also a country that openly supports North Korea, a country that commits horribly atrocities against its own people.

The university has numerous research and exchange agreements with both Saudi Arabia and China. Why is it okay to keep ties with institutions in these two countries, when they have these human rights violations? That is because of academic freedom. Universities may exist in a country that commits human rights violations, violence, segregation and other atrocities, but they are not tied to the policies of that country.

Academic freedom is the reason why the university maintains ties with numerous institutions around the world in countries that the Canadian government has openly criticized, condemned and even sanctioned. Academic institutions do not follow the policies of the countries that they reside in. This is why we should not sever ties with Israeli institutions, no matter how their research is used. If we used that as logic, we should sever ties with ourselves because numerous professors on this campus have grant money with companies that manufacture weapons that may or may not end up in the hands of countries that may or may not commit human rights violations.

Lastly, I want to spend a bit of time discussing whether this referendum passing will actually accomplish anything the vote yes side proclaims, and its benefit on Waterloo undergraduate students. As discussed previously, academic institutions are not directly tied to the countries they reside in. If we take this line of reasoning to its conclusion, it is impossible to see how boycotting academic institutions will put pressure on a government. Second of all, this referendum is binding to Feds and only Feds. How this can benefit undergraduate students specifically has yet to be answered and, as mentioned previously, only alienates certain groups of students on campus.

Throughout all of the discussion on the topic, those for severing ties have been unable to answer the very simple question of "how does this benefit the majority of undergraduate students?" Arguments have been made that 4400 students signed the petition, but that is a small minority of the overall population. Furthermore, it will be interesting to see if that many students even vote for the referendum itself.

To conclude, the referendum on severing ties with Israeli universities for supposed complicity in human rights violations that Israel has been committing should fail. Feds should stay out of foreign politics and focus on issues that are actually affecting students. This referendum could potentially set precedence for Feds focusing on more non-student issues, and also completely ignores the fact that institutions are not tied to the countries that they reside in. Additionally, there is no conceivable way that severing ties with Israeli institutions will benefit the majority of undergraduate students at the university, and it serves to further the agenda of a small minority. Therefore, vote no when you go vote, and immediately move on to the other referendum that will actually have an impact on students.

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.



All About WEEF!



ERIC SHI
WEEF DIRECTOR

Welcome back on campus, undergrads, and I hope the term is going well so far. My name is Eric Shi and I am the new 'A' society WEEF director. One of the goals I have for my terms as WEEF director is to update the infrastructure that helps WEEF operate, including the website, funding proposal system, and media.

WEEF was founded by two Waterloo Engineering students, Avi Belinsky and John Vellinga, in 1990 with the goal "to continuously improve the educational environment for undergraduate engineering students, and maintain our outstanding reputation." Through donations from the student body, employer matching contributions, and alumni, WEEF has accrued over 13 million dollars in principal. This fund is professionally managed and the interest earned is distributed each term to a series of proposals that are evaluated by a student only council. It is this council for which you will be recruiting two representatives from each of your classes. The representatives will be voted on by the class and will attend proposal presentations and decision meeting to allocate the funding available.

The presentations will be given by faculty members, student teams, and clubs. As a representative, you will have the chance to see what each faculty is doing with their facilities, what student teams are working on, and what different clubs in the engineering faculty are up to. Faculty (i.e. possibly your professor), staff, and upper year students will be presenting. With each class represented, all departments vote on the funding allocation and help guide the University's funding decisions. Yes, the Engineering departments do consider what students are funding when allocating their own budgets. This is how WEEF gives a strong voice to the students.

Over its 25 years, WEEF has funded many of your lab facilities and supported student teams in their accomplishments. If you see a yellow WEEF sticker on anything in the school, that was funded by a student only council. Take a look around your labs sometime; there are lots of these stickers. If you're planning on joining a student team, you should know that WEEF contributed one million dollars to the construction of E5 and its Student Design Center.

If you have any questions about WEEF or would like to get involved with WEEF, please contact me at weef@uwaterloo.ca and I'll be more than happy to get in touch with you. In the meantime, good luck on the academic term and job hunting. Continue the tradition. Continue supporting WEEF.

Job Not Here? Never Fear!



LEAH KRISTUFEK
4B CHEMICAL

First round Jobmine job applications are done! This means that two weekends of frantic applications are now complete, and you can finally focus on all those assignments you've been putting off to the early hours. What a relief! But let's be honest, actually being employed would be even more of a relief. I know this whole experience can be pretty daunting, so if you are applying to co-op jobs for the first time ever, this article is meant for you! (Cue picture of Uncle Sam pointing at you.) Getting a job can be a big deal, and as a first year (and even as a soon to be new grad), you can't always be too picky. Here's some advice to hopefully smooth your transition into co-op life.

Be Open to New Experiences

Don't limit yourself. The joy of co-op is that you can relocate for four months to work anywhere in the world. Open yourself up to possibly living in a place you have never been before. However, make sure to acknowledge your limits: for example, if you are deathly afraid of water then don't apply to work on a boat. Same goes for jobs and locations. If you have been really homesick since starting school, maybe it is a good idea to look close to home. In this case you may be limited in the number of jobs you can apply to, and it might be a good idea to send resumes (with cover letters!) to local businesses, or to ask friends and family for help. It's often just as much about who you know as it is about what

you know.

Be Honest About Your Skills

Everyone wants to stand out. However, if you claim to have two years of programming experience in a language you have never actually used before, you are setting yourself up for failure. As a first year student, you are most likely best suited to a junior job. Apply mainly to these jobs. If you have a special interest or skill set that makes you suitable for a higher lever job, don't be afraid to apply, but it might be a matter of including a cover letter explaining your interest or skill. Employers will be looking somewhat at your university classes, but it will also be your hobbies and pastimes that set you apart. Video games can show you have good spatial sense, or athletics may make you a good fit if the people in the office are looking for a student to play soccer with the company team.

Be Prepared

It is a competitive world! Don't let rejections discourage you. Even if you aren't employed after the February 29th rankings, you aren't missing out on all the good jobs! Many employers forget that they need to hire co-ops until closer to the start date. My first co-op ended up being in the Yukon and I didn't get it until the last couple weeks of school! That said, there's nothing wrong with passing on your resume to friends and family who might have an engineering student position open at their workplace. (Just make sure to tell the CECA in the Tatham Centre as soon as you have a job so they can take you off Jobmine.)

Happy Jobmining! (P.S. Ask someone about the Jobmine glitch.)



CAREER FAIR

Careers that make people smile

Wednesday, February 3, 2016
10 a.m. - 3:30 p.m.

Manulife Sportsplex at RIM Park, Waterloo - Booth #106

Cutting-edge career opportunities:

- Forward-thinking, high performance culture
- Professional growth-on-site e-learning stations
- World-class, state-of-the-art facility
- Focus on innovation and quality

What you bring:

- Post-secondary education
- Adaptable, innovative, independent
- Energy, drive, maturity
- Team-spirited, committed, and proud

Choose the benefits levels that suit your lifestyle:

- Employer contributions to your RRSP
- Bonus and reward programs
- Discounted gym memberships
- Programs supporting work-life balance
- Social events and spirit days
- Employee recognition program
- Professional and personal development programs
- Health and wellness program

If you are unable to attend, please visit our website
www.septodont.com



David Bowie: A Music Legend

SEAMUS BANNON
1B NANOTECHNOLOGY

The world was devastated two weeks ago, January 10th, by the death of the legendary musician David Bowie. At the age of 69, Bowie lost his battle to cancer, an illness which had been diagnosed eighteen months prior but had not been made public. Bowie's death followed just two days after the release of his new album Blackstar; this last release marks an end to the massive accumulation of music, plays, movies, and paintings that were created by the superstar.

Born in the London, England on January 8th, 1947, Bowie began his musical career at an early age drawing inspiration from early rock and roll stars among the likes of Elvis Presley and Chuck Berry. These idols were Bowie's first exposure to the energetic stage presence he would later come to embody himself. It was also in his earlier years that Bowie suffered a severe injury to his left eye as a result of a fight. This injury left Bowie with his iconic dilated pupil.

As Bowie grew and changed, so did his music. Beginning his professional career performing small gigs in pubs around London, Bowie jumped from band to band playing a mix of folk and blues revivalism. During this phase in his life Bowie released a number of commercially unsuccessful singles, including his debut "Liza

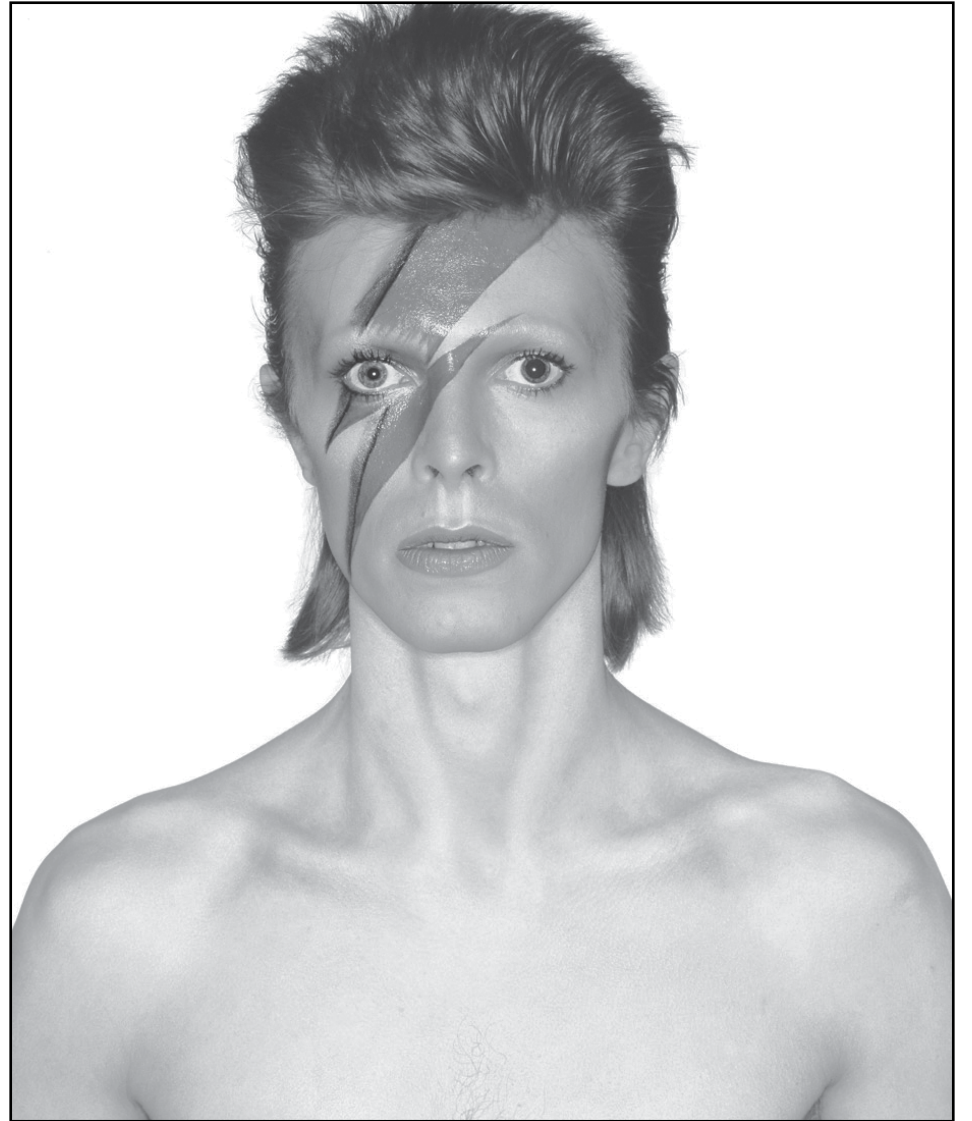
Jane," followed by "I pity the fool".

It was at this time that Bowie officially adopted his stage name and began to transition from folk and blues to rock 'n' roll. He also started to appear in an increasing number of low-budget short films, often co-starring his then girlfriend Lindsay Kemp. Bowie's big commercial breakthrough came in 1969 with the release of "Space Oddity." The release came 5-days before the Apollo 11 launch and shot up to top 5 in the UK charts.

It was from this point on that Bowie began to experiment more and developed his unique, iconic style. Striving for more commercial success, Bowie explored the extremes of artistic creativity. Adorned with colourful lightning bolts, dyeing his hair reddish-brown, and wearing women's clothing, "Ziggy Stardust" would tour the US and UK attracting attention wherever he went. Bowie's commitment to this character heavily impacted his mental health, bringing with it a cocaine addiction.

From Ziggy Stardust, Bowie morphed and changed into the "Thin White Duke," paralleling his deteriorating state. Fortunately, with time and a hiatus from the entertainment business, Bowie was able to kick his addiction and started making music again.

Bowie's life was an exciting evolution of genius, inspiring many other artists, both big and small. David Bowie will be missed.



Via USA Today, used under Fair Dealing

A New Term, Janus God of Beginnings & Transitions



Salve citizens of Waterloo, I Gaius Lucius Agrippa welcome you once again to the Forum Romanum in the magnificent city of Rome! Rejoice, fellow citizens, for today we mark the return of the Acta Diurna, and at that, a splendid way to begin the new term and year. For those who do not recall what the Acta Diurna is, allow me a moment to remind you. The Acta Diurna (roughly translating to Daily Acts in English) will covers a variety of topics and subjects involving the many of

aspects of Roman life, culture, religion, and long history. I, Gaius Lucius Agrippa, will guide you through different practices and observances that occur in Rome and our provinces. Without any further delay, let me introduce you to today's article, and once more on behalf of the People and the Senate of Rome, I bid you welcome!

In this New Year, new term, and month of Iaanuarius or January as you call it in English, it is fitting that we speak of Janus. In Roman custom and religion, Janus is the god of all things new: new beginnings and transitions. As many of us here today begin a new and look forward to the bounty of the New Year, it is appropriate that we speak of and honour Janus!

Janus presides over all beginnings and transitions in Roman life, regardless of

nature. He is depicted as a two faced god, his faces looking in opposite directions symbolizing his gaze into the past and into the future. As the god of transitions, he overlooks the passage of people and time through the gates of life, both spiritual and physical. It is not uncommon for icons of the god Janus to be found among Rome's archways, gates, bridges, and doorways. The god Janus keeps under his watchful eye the steps each Roman citizen takes when entering any house or temple. In fact, his reach goes as far as the Porta Ianualis—the city gates named after him—which is said to have protected Rome from the Sabines in the north east.

In Roman culture, before any ritual, practice, or religious offering Janus is invoked and praised foremost, prior to

any other god, regardless of which deity is being honoured. This is because it is believed that Janus presides over all beginnings and transitions in the world, including that of the gods. We Romans know Janus to be at the origin of time and guardian of the passage to the gods, and it is only through Janus that all other gods can be reached. Aside from worship of the gods, Janus himself is also associated with his own unique rites and rituals. Janus is called upon and invoked in times of change and new endeavours. He is worshipped at birth as the initiator of life, and the beginning of each Roman citizen's life, at marriages as Roman men and women transition into life together, and even at death, the beginning of one's afterlife and transition from the mortal plane. It is also Janus who is called upon during beginnings of financial enterprises, such as the opening of a store, a service, or the minting of new coins. In virtually every part of Roman life as something ends another begins, and in it Janus' presence.

In times of war, Janus' is given further honour and beseeched in his temple, the Ianus Geminus. The temple itself resembles a passage, with double doors on each end, and the two-faced statue of Janus stands the centre, with each face looking towards the opposing set of doors. The doors themselves are called the Gates of Janus, also known as the Gates of War. During times of peace, the temple gates were sealed, and opened only during times of war. When Romans took up arms, the temple's inner sanctum was host to countless sacrifices in hopes of predicting the outcome of the conflict.

Janus is ubiquitous in ancient Rome, the Sacred Rites associated to him being abundant and ever present. Although he had no formal flamen (priest of Rome assigned to one of the 15 official cultic deities of Rome), Janus was involved in almost every rite and aspect of Roman life, every beginning, and transitional period, be it in a citizen's life or that of the whole Roman world.

LE SHIN SWAH
★
TABLE TENNIS LEAGUE

TABLE TENNIS LEAGUE
leshinswah.com

@ChainsawLovers

New Year, New Team!



ADELLE VICKERY
PRESIDENT

Welcome back engineering students! I hope you all had a great break for the holidays and are enjoying the term so far! For those of you that I have not had the pleasure of meeting yet, my name is Adelle, and I am the new Engineering Society President of A-Society. I am very excited to be back on term and begin implementing the initiatives that I and the amazing Society leadership team have planned.

New Initiatives and Co-op

One of the largest initiatives I have been working on over the co-op term is implementing a system for remote attendance and voting for our Annual Joint General Meeting held every Spring term. At this meeting, every fee paying EngSoc member—on and off term—has a vote, and therefore a say, in the direction of the

Society. With the elimination of termly General Meetings (at which all on-term members had a vote) at the 2015 Joint Meeting, there was concern that off-term members during the Spring term will not have the same opportunity to voice their opinions. To remedy this, I am working on implementing a system to allow off-term EngSoc members to attend and vote remotely.

Some more initiatives I am working on include expanding and improving our "bank"-type services. I have been working with the Associate Dean Undergraduate, Peter Douglas, to implement a syllabus bank for elective courses, including technical electives and CSEs. This will assist engineering students with the process of choosing their courses each term. Other changes include implementation of a scholarship bank and improving the exam bank.

Orientation Week

The majority of my Winter term so far has been spent on Orientation Week 2016

Planning. As I'm sure you're aware, a fall reading break has been approved (on a 3-year trial basis,) to be implemented in the 2016/2017 academic year. It was decided that the extra days would be taken out of Orientation Week, shortening the week to 3 days. This change has provided an opportunity for the University to re-vision Orientation 2016 to best meet the needs of students. To do this, an Orientation Working Group was created to design an Orientation program that reflects the mission of the program, is based on best practices and research, ensures a positive leadership opportunity for upper-year students, and works from the best elements of previous years while using the opportunity to re-vision the experience. This working group is made up of students, faculty, staff, and other campus representatives. I am sitting on this working group as the student representative from the Engineering Faculty. The other members can be found at uwaterloo.ca/orientation/planning-process-2016/get-involved

Phase one and two ("discover" and

"dream") of this process are now complete; in these phases, key stakeholders shared their perspectives and envisioned possible futures for Orientation. We discussed the "best of the past" and the factors that contributed to them, and then discussed what aspects and factors are most important in the week. The next phases are all about design and delivering; the working group is meeting all day January 26 and 29 to start designing the new Orientation Week. If you would like more information, visit uwaterloo.ca/orientation/planning-process-2016

If you have any questions about anything I've said in this article or about the Society, want to find out more about what we do, or just want to chat, shoot me an email at president.a@engsoc.uwaterloo.ca or visit me in the Orifice (CPH 1327). My official office hours are Thursdays from 12-2, but I can usually be found there whenever I'm not in class or meetings! I would be more than happy to answer any questions. Looking forward to hearing from you!

Stay UpdatED



JEFF GULBRONSON
VP EDUCATION

Welcome back to campus, and to a new term with A-Soc! I'm Jeff, your new VP Education, taking over for my buddy Josh. I deal with everything Academic or Co-op related. I'll try to give you a quick overview of everything that's happening this term, and as always, feel free to ask if you have any questions!

We decided to switch things up this term! Traditionally the Student Services Commissioner (SSC) has been under the VP Internal portfolio. This term however, as a team we decided to move it under

Education. I'll be working closely with Pat Duong over the term to make sure EngSoc provides meaningful services to our members. We'll also be re-evaluating the workshops offered at the end of the term to make sure a wide variety of programs/years are benefiting from them.

As well, I'm implementing a new initiative, Ongoing Resume Critiques with Adelle, the President. On our website, www.engsoc.uwaterloo.ca/services/coop-and-career-services/resume-critiques, you can find profiles for upper-year students across a variety of programs. They've all generously provided their emails, so feel free to take advantage of this new service and email them to get your resume critiqued throughout the term! If you have feedback or questions about this service,

please reach out and let me know.

When I ran for election in the Spring term, one of my campaign points was CECA accountability. To that end, I will strive to provide regular updates about WaterlooWorks in my IW articles and am currently in the process of setting up a demo in CPH foyer. I hope that this will allow students the opportunity to ask questions, and more importantly, receive answers from staff working on WaterlooWorks. I have been in contact with the communications specialist, who tells me that the project continues to be on track for January 2017.



In addition to CECA accountability, I am hoping to organize an academic representatives meeting during the term. It will be chance for reps to discuss issues that af-

fect students across the entire faculty, and affect multiple years, such as course critiques. So if you're an academic rep, keep an eye out for that!

Finally, the last and most important part of VP Education is advocating for engineering students. I sit on a variety of councils and committees, which I won't bore you with here. But between myself and the President, we can likely bring up any issues you have at the appropriate time to the right people.

When I'm not in class, you can likely find me in the Orifice (CPH 1327). My "official" office hours are 2:30 - 4:30 on Mondays, but feel free to stop in any time, even just to say hello. Alternatively, you can always email me at vpeducation.a@engsoc.uwaterloo.ca

Upcoming Events Calendar

Wednesday January 27	Thursday January 28	Friday January 29	Saturday January 30	Sunday January 31	Monday February 1	Tuesday February 2	Check out up-to-the-day event postings on the EngSoc website at engsoc.uwaterloo.ca/event-calendar/
EngSoc Council Meeting #2 5:30 PM - 7:00 PM P&P Presentations 7:00 PM - 8:00 PM, POETS	Snow Activities Day 1 5:30 PM - 7:30 PM	Semi Formal 8:30 PM - 12:30 AM Ontario Engineering Competition	Ontario Engineering Competition	Ontario Engineering Competition	Charity Pancakes 8:30 AM - 10:30 AM, CPH Foyer AutoCAD Workshop 5:00 PM - 6:00 PM	Genius Bowl 6:00 PM - 9:00 PM	
Wednesday February 3	Thursday February 4	Friday February 5	Saturday February 6	Sunday February 7	Monday February 8	Tuesday February 9	 
Snow Activities Day 2 5:30 PM - 8:00 PM	EngProb #2 5:00 PM - 6:30 PM Surviving Midterms 6:00 PM - 8:00 PM	First Year Integration Conference	First Year Integration Conference IRS	First Year Integration Conference	Upper Year Hell Week Begins Charity Pancakes 8:30 AM - 10:30 AM, CPH Foyer	Eng-Queers #3 7:00 PM - 10:00 PM, POETS	

Brace Yourselves, Winter-nal is coming



**SARBAJOY
MAJUMDAR**
VP INTERNAL

Hello A-Soc, it is your friendly VP Internal Sarb here and this term will be filled with fun activities. Over the co-op term, a handful of amazing directors; my student life commissioner, Awn Duquom; and myself have worked hard to come up with some wonderful events and initiatives that we cannot wait to see come to life this term.

Collaborations With Other Societies and Schools

As part of my platform when I was running for VP Internal just a few months ago, I promised to have more collaborations. For one, we have collaborated with Conestoga College on Saturday January 23 to go out together for a bowling trip, which was a successful event. We will also be collaborating with the Mathematics Society to run University of Waterloo's first ever Eng+Math faculty run hackathon (happening on March 4). This is a first-of-a-kind event where 2 faculties collaborate

to run a hackathon together on campus. For all who love to code or are interested in getting exposed to hackathons, this will be an event I would definitely recommend you to attend.

Along with the 2 set collaborations, I am currently working on trying to find another faculty with whom we can collaborate our mental health initiatives on campus during our Mental Health Awareness week (which is from February 29 to March 4). I have been keeping contact with the VP Internal equivalents of all student societies on campus to find avenues for inter-faculty collaborations in the future.

To end this section off, I would really like to thank Adam Kolb (VP Internal from Conestoga Engineering Society) as well as Tristan Potter (UW Mathematics Society President Fall 2015), and my Bowling and Hackathon directors for helping to materialize the dream of seeing more event collaborations between EngSoc and other organizations.

Events So Far

Since the beginning of term until now, 5 VP Internal events have occurred and I am glad to say that they have exceeded the expectations for turnouts.

Time to Make it Rain!



**ABDULLAH
BARAKAT**
VP FINANCE

AWWW YEAH! New Year, New Team, New Fun Times with EngSoc! Hope you all had a great holiday and are pumped for the new term! My name is Abdullah Barakat, and I will be your VP Finance for the Winter 2016 term. Throughout my co-op term and the first few weeks of this term, a lot has happened when it comes to the finance side of EngSoc.

Novelties

Over the course of the Fall term, Novelties sold over \$4000 worth of products, and now we need more! If you have any ideas for new products, or about anything you want to see in Novelties, feel free to message me or come by the Orifice (I'm usually there a lot).

On another note, over 30 pairs of coveralls have been sold this week, and people are so excited to get them in! There will be a fire sale in the coming weeks, so if you are looking to get the last of some of our inventory in Novelties, keep an eye out!

RidgidWare

RidgidWare is back this term, and it's already started out with a bang! We implemented a brand new beginner Arduino workshop, which was very well attended and response to it was very high! As a result, the RidgidWare directors are now working to implement a series of workshops for the Fall 2016 term ranging for

those of all skill levels.

Also, RidgidWare is now opened for more hours during the week, and is now targeted more as a service than as a store. So feel free to go in there if you have any hardware related questions. The hours are Monday to Friday 11:30 to 12:30, and the extended hours are Tuesday to Thursday 12:30 to 1:30.

Student Deals

The ever expanding student deals program now has two new deals! We now get a 10% discount at Menchie's, and double stamps at Marble Slab! We also unfortunately lost one of our original deals in Aunties Kitchen. EngSoc and Aunties could not reach an agreement, and hence the student deal was discontinued. But no worries, we are currently working on getting more deals and I will keep all students informed once any agreements has been made and confirmed.

Square

Ever gone to the CnD and be like "I have no cash, oh well, I'll go to Tim's"? Well look no further! In the coming weeks, the CnD will be implementing Square, which will allow people to use their credit cards to make payments. It will be tried out on one register as a start, and the implementation might expand depending on the reaction we get from it.

Hockey Game

EngSoc sponsored one of the local minor league hockey teams (ages 8 and 9), and we went to a nearby arena and watched one of their games. Needless to say the Engineers were out in full forces and were the rowdiest cheers in the crowd! They were so cute! It was honestly just great to support the kids in the community and to bring a lot of people together to demonstrate the Engineering Spirit at Waterloo! The kids enjoyed it, the parents loved it, and you bet the Engineers had a blast cheering their hearts out! Fun times had by all!

That is all for now, but if you guys ever have any ideas, questions or just generally want to chat, feel free to come by the orifice or email me at vpfinance.a@engsoc.uwaterloo.ca

Many people definitely came up to me saying how they have enjoyed the Beginning of Term Party that happened on January 8th at POETS. It was definitely an enjoyable time for me as well and I have even had the pleasure of meeting a whole bunch of people whilst playing games such as Resistance and Cards Against Humanity. I learned a lot through many of you about how else should I continue keeping members engaged and active within the society.

The first Engi-Queers event has been a successful event that has provided LGBT members of our community the safe space to be themselves. It has been a great step forward for EngSoc's pursuit for inclusivity. I would like to thank Jennifer Cerullo from 2017 Chemical Engineering for coming up with this event idea and I am sure that subsequent Engi-Queers events are going to be even better and fun. Engi-Queers are holding events on January 26, February 9, March 8, and March 22.

Professional Photoshoot was a success, especially at the E5 bridge. This event made me realize that having a picture taken at the E5 bridge can never get old, and it is honestly one of the best place to take a professional photoshoot

on campus. Seeing many members who attended the event change their Facebook profile pictures to the pictures they took at the Professional Photoshoot has been an overwhelmingly heart-warming experience. A huge shoutout goes to Ian Holstead and the TSN team for helping take the wonderful photos.

Events in the Near Future

Unfortunately ski trip tickets are sold out. We would like to thank everyone for their keen interest in the event, and we would like to apologize for not being able to accommodate everybody interested in going to the trip. The ski trip is happening on Sunday February 28.

Snow activities, an initiative by 2 amazing 2020 students, is going to happen on 28th January and 3rd February. Definitely keep an eye out for that.

Lastly, Semi Formal is happening on Friday, January 29 at Turret Nightclub. It is going to be a really great event with great music, great location and an amazing Hollywood Masquerade theme. You can buy tickets for the event at \$15 from either the Orifice (CPH 1327, open from 8:30 AM to 4:40 PM) or at the CPH foyer from 11:30 AM to 1:30 PM from now until the 29th.

Conferences and Outreach and NEM Oh My!



**OLA SUCHON
WILL WILMOT**
VP EXTERNAL

'Sup A-Soc – It's Ola and Will. We're here to give you a quick look at what we were up to over the last four months and what we have planned for this term. So let's get to it.

Conferences: Over the past few months, we've had the privilege of representing Waterloo A on both a provincial and federal level at the Engineering Student Societies' Council of Ontario (ESSCO) and the Canadian Federation of Engineering Students (CFES). Both organizations are putting a greater emphasis on student advocacy and are interested in hearing from students on any issues they feel affect students on a larger scale. We recently returned from the CFES Congress which took place in Calgary, where the CFES created a new executive position, VP Academic. Applications for Commissionerships within the CFES will be opening in the coming months. If you want to get involved in representing engineering students Canada-wide, please don't hesitate to get in touch with us!

Conferences that are coming up include the First Year Integration Conference (FYIC), which has already had its delegation chosen, and ESSCO Annual General Meeting (AGM); keep an eye open for the application to go up around the middle of the term!

Outreach

If you are looking to get involved with volunteer opportunities then check out the following events that our awesome directors may be asking for your help with.

Engineering Explorations – The faculty will be looking for volunteers to give tours to younger students and their parents of some of the amazing things Waterloo Engineering does! Look out

for applications to participate.

Education Outreach – An event where EngSoc goes to THEMUSEUM in Kitchener to get kids excited about science and engineering by performing science experiments with them.

NEM – National Engineering Month

National Engineering Month (aka March) is an opportunity for engineers and engineering students across the country to celebrate and promote our field. Engineering is a challenging and rewarding discipline, so join us at the various events throughout the month:

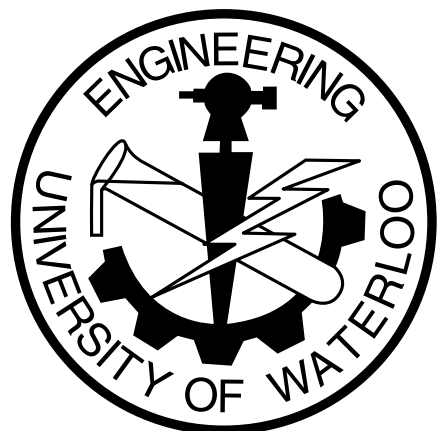
Rube Goldberg – Help us create a machine that lights up the CN Tower purple! The more complicated, the better.

CANstruction – Support the Food Bank of Waterloo region by creating displays and sculptures built entirely out of non-perishable food! These will be put on display at Conestoga Mall for the public to vote on as well.

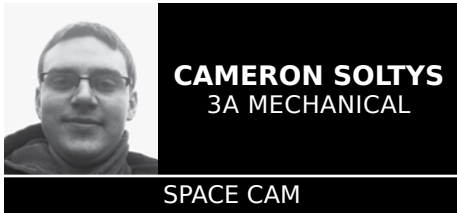
PI Day – Come out on March 14 to enjoy some delicious pie and pi(e) related fun!

You may also notice a variety of charity events on the calendar throughout the term. During the Spring 2015 term, engineering students voted to give any money raised to the charity Water.org, so the money you spend on those delicious pancakes in the CPH foyer—and the money you donate during any of the other events will be going to help provide safe water and sanitation solutions that give families hope, children health, and communities a future.

If you are looking for any further information or want to learn more about how to get involved in conferences, outreach, or charities, send us an email at vpexternal.a@engsoc.uwaterloo.ca or find us in the Engineering Society Office (CPH 1327)! You can find at least one of us on Tuesdays 12:30 to 2:30 or Wednesdays from 1:30 to 3:30. Have a great term!



Why Study Astronomy? Perspective Gained



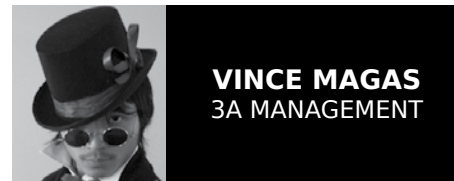
What do you like about space? All sorts of ideas come to mind. Beauty, serenity, and cultural significance could describe the stars. Power, innovation, and courage are fair for human and robotic exploration. Let me add another idea to that list: perspective. A lot of what humanity has gained in its study of the sky is perspective. An idea of how we came into this universe, where we sit within it, and in which ways we are special and we are ordinary.

Earth is called “The Blue Planet” for good reason. It has a great blue vibrancy—and frankly a green vibrancy too—that is unparalleled in our solar system. The green comes from the great range of photo-synthetic life on the surface, which I’m sure you know is a somewhat unique feature. But the blue water that we also associate with our little home is less identifying than terms like “Pale Blue Dot” would have us believe. Water, it turns out, is all over our solar system. For starters, our close neighbour the Moon is known to have surface ice in its polar regions. On Mars, it’s hard to pick which instances of water to share: There is a variety of robotic and satellite data suggesting that briny water flows on the surface at night, more water ice exists at the poles, and Curiosity has been wandering through a landscape of water-birthing sedimentary rocks for years. If you want to be picky and say that Earth’s water is significant because it’s liquid, you need only look at the Jovian moon Europa; Europa is suspected to have twice as much liquid water as Earth hidden under its icy surface, kept from freezing by the gravitational forces of giant Jupiter kneading the moon. So that’s an interesting perspective: Earth isn’t special for having water or even liquid water. What it is special for is having liquid water on its surface.

Perhaps a more revealing perspective is the size of Earth’s moon. Have you ever seen Apollo 13? Then you probably remember Tom Hanks standing on Earth

and using his thumb to cover the moon. While in orbit around the moon, Hanks then does the same trick to cover Earth. To be pedantic, this couldn’t happen because the Moon is only one quarter the radius of the Earth, and thus Earth would appear four times larger than Hanks’ thumb. But even a product of four is surprisingly small. If you take a look at Mars, for instance, its larger moon—Phobos—is only 11 km across. Now, some other moons are larger than the Moon, but they’re all orbiting gas giants. Ganymede is the largest moon in the solar system and it is slightly larger than Mercury, but it is 26 times smaller than the titanic Jupiter that it orbits. So the size of the Moon relative to Earth remains a relative novelty (with some notable parallels in the Pluto-Charon and Eris-Dysnomia dwarf planet-moon pairs).

These are just a few of the lessons that astronomy has taught us over the centuries about our place in the cosmos. The ways in which our planet is really unique, and the ways in which our planet is very ordinary. Humans are now embarking on a new odyssey of uncomfortable-but-fascinating research into the typicality of our home. The growing search for exoplanets, championed by the Kepler Space Telescope, is revealing new ways in which our solar system is a rather boring one. Every few months, a new story comes out of some discovery that would have been ridiculous just months before, like gas giants so close to their host star that they orbit in a day. There is no knowing what is or isn’t possible, and what curiosity will be found next. But suffice it to say that our perspective of little green Earth will continue to change again and again as long as astronomy is studied.



Do you like Apple? Perhaps you like everything Artificial Intelligence-related? Maybe you can imagine detecting how you feel? Perhaps the future might hold just that, with multinational technology company Apple Inc.’s recent purchase of Emotient, a San Diego based Start-up Company that uses AI technology to read and evaluate people’s emotions based on facial expressions.

Originally reported by the Wall Street Journal one week into January, Apple certainly took a step into the future with yet another acquisition of a start-up company. Fairly known for its history of buying and acquiring augmented reality and machine learning companies, this isn’t all too new for the tech giant. Having purchased companies such as VocallQ, Meraio, Perceptio, and Faceshift in 2015, Emotient is probably just the first in its lineup of acquisitions in 2016.

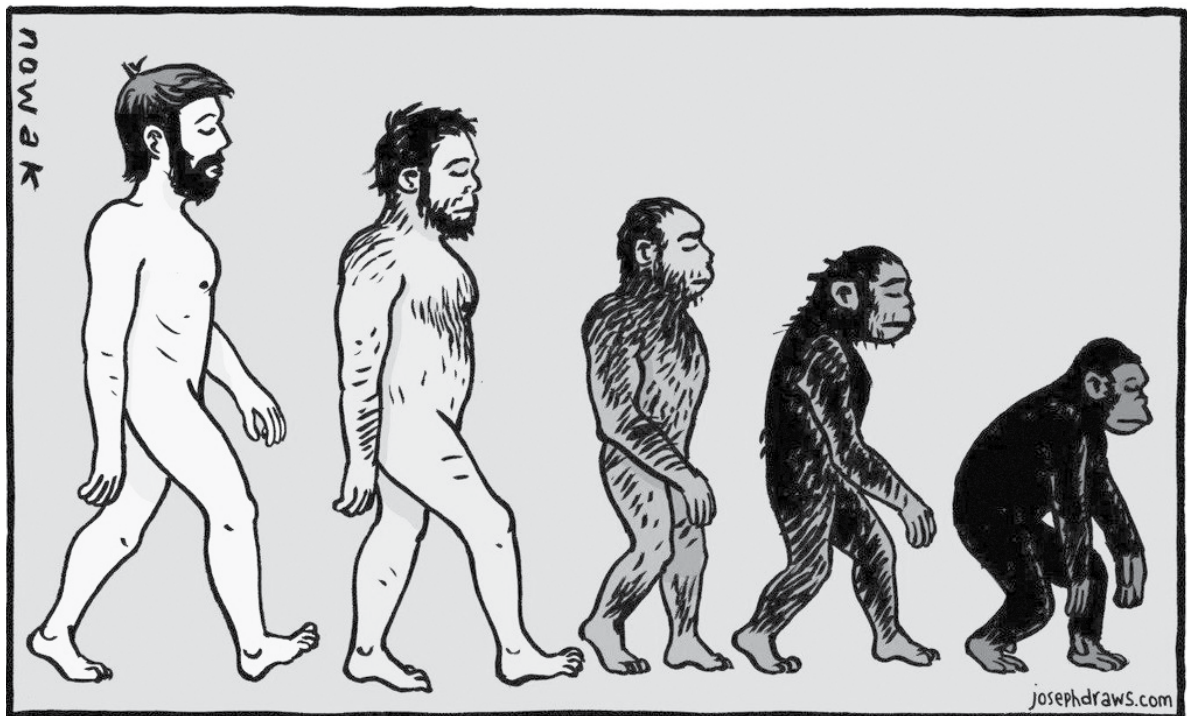
So what’s so special about Emotient and Apple’s recent purchase? According to Apple’s all too generic statement of “Apple buys smaller technology companies from time to time, and we generally do not discuss our purpose or plans” (as reported by the Wall Street Journal), we can’t really say at this point. History shows however that Apple often leads the technology to be used in completely different applications than what

was often intended by the original company.

According to Emotient’s website it is a leader in emotion detection and sentiment analysis based on facial expressions. The company also claims to be at the vanguard of a new era of “emotion-aware computing”. Boasting its technology’s potential application in advertising and marketing fields, reading a customer or client’s emotional response to ads, and products. In previous years, Emotient has also made suggestions in the technologies’ possible use in automotive GPS systems, giving the driver new route options if it detects frustration due to traffic or inconveniences in the current route. There have also been suggestions of the technologies’ potential in the fields of teaching and education, and medical diagnosis.

Prior to acquisition, the start-up had a mere 50 employees (as stated on its LinkedIn profile), but has raised over \$8 million from various investors, one of them being Intel Capital. In 2014, the company launched a private beta for a Google Glass app that informed the user of a person’s overall emotion by scanning the person’s face for emotional cues.

Apple’s intentions with Emotient’s technology remains largely unknown, but certainly sounds complementary to its previous purchases of start-ups in the field of recognition technology such as Faceshift and Perceptio. Only time will tell what Apple has in store; maybe that next iOS update will turn Siri into the person who knows you best.



The Theory of Evolution as taught in Chimpanzee School

WORK REPORTS

WANTED for Case Studies!!

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

**WATERLOO
CASES IN DESIGN
ENGINEERING**

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

NOMINATE AN OUTSTANDING TEACHER FOR THE ***DISTINGUISHED TEACHER AWARD***

**Nominations are
due Friday,
February 5, 2016**

Who can submit a
nomination?

- ❖ Undergraduates
- ❖ Graduates
- ❖ Alumni
- ❖ Faculty
- ❖ Staff

FOR MORE INFORMATION

-  Visit us at EV1 325 or online at
<https://uwaterloo.ca/centre-for-teaching-excellence/awards/dta>
-  Call: 519-888-4567 x33857
-  Email: cte-dta@uwaterloo.ca

 Find us on
Facebook
www.facebook.com/ct.excellence



UNIVERSITY OF
WATERLOO



Broskies on Brewskies

Baked Apple, Pompous Ass,
and Old Tomorrow Canadian

DONOVAN MAUDSLEY
TRISTAN KUEHN
2T MECHANICAL AND 2T SYSTEMS

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

This review was written while tasting the beers themselves, after a few name brand beers. It has been presented in the most unedited version possible to preserve the accuracy of the experience.

First up this issue we took a small diversion from craft beer and tried a local mead. Mead is a honey-wine with a very sweet and smooth flavour. We tried the Baked Apple Mead from Trafalgar Ales and Meads in Oakville. We got this on a strong recommendation from a friend, and our first impressions were very favourable. The mead tastes like a very good cross between a white wine and an apple cider. Sweet, and a little bitter, and we would definitely recommend it. Overall we give it a four out of five. It is kind of cheating for us to review something like this, seeing as it is more of a wine than a beer, but we drank it anyway.

Secondly we tried the Pompous Ass English Ale from the Great Lakes Brew-

ery. We grabbed this one because of the name. We didn't expect to like this one, but we actually did find it very pleasant. Last term we ran into a lot of pale ales, and the overuse of hops throughout the beers in general turned us off of overly bitter beers. This beer almost fits into that category, but the hops taste is subtle enough to prevent that. This beer is nothing new, but it actually pulls off a nice hoppy taste where the others fall short. We did not totally agree on the rating for this beer, but we agreed on a three out of five.

We chose the last beer based solely on the can design. The bright red and white can of the Old Tomorrow Canadian Pale Ale is from the Old Tomorrow Brewery Company in Toronto. This beer fits into the same category as the Pompous Ass, being bitter and hoppy. It also pulls off the subtleness of the Pompous Ass. It's a nice and smooth beer, and we liked it. It was indeed better than the Pompous Ass, and we give it a four out of five.

We definitely got a good batch of drinks this week. Any of the beers reviewed would go well with a meal, or as your workhorse beer at a small party, but be careful if you get into the mead. The high alcohol and sugar content might throw you off. Mead can give you one hell of a hangover. Until next issue remember to try as many different beers as you can, and please drink responsibly.

In Defense of Introversion



TIFFANY CHANG
1N CHEMICAL

I am an introvert.

Having read *Quiet: The Power of Introverts in a World that Can't Stop Talking* by American author and former lawyer Susan Cain, I am also a self-described advocate for being introverted.

During a mock interview with a peer leader from V1's Living-Learning Community last term, I mentioned the word "introvert" in my response to the all-anticipated "How would you describe yourself?" question.

So, you can imagine my dismay when the peer leader suggested something along the lines of, "I wouldn't use 'being introverted' to describe myself. Employers don't like to hear that."

It's the 21st century, yet there is still something held against "introverted people."

I'm not accusing every "extroverted" person of discriminating against us "introverted" people, but I hope that they can better understand us and that we can better understand ourselves.

Hypothetically, a conversation is supposed to be an exchange of ideas. However, growing up, I've been accustomed to being talked at by more "extroverted" peers who assume that my silence is an okay for them to continue speaking.

As much as I enjoy being a listener, I—like every other human being—have my own opinions and would like to express them under appropriate circumstances. But if extroverts fill up a conversation with their own chatter, not only do I lack any opportunity to add in my two cents, but I cannot think and process clearly with the constant buzz of his or her voice, let alone formulate an appropriate response.

As a matter of fact, I love being social and

attending social events—at times. I delight in catching up with friends and making new ones as much as any "extroverted" individual; however, unlike "extroverted" peers, I need plenty of time to recharge my batteries—time alone.

I cannot go out for long periods of time or go out too frequently without feeling exhausted, so dearest "extroverted" beings, please respect my need to be alone. Don't take it personally. It isn't you; it's me—literally.

For the "typical extroverted individual", he or she thrives in an environment with plenty of stimuli. To me, loud noises and bright lights overstimulate my senses, overwhelming me, and draining me psychologically. It makes me want to shut myself out. My internal world is a safe haven, providing me with a tranquil retreat from a world that cannot seem to silence itself.

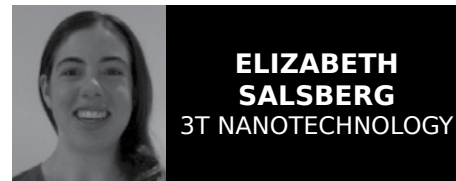
Interestingly enough, throughout my experience in Canada's public education system, I have not once heard a teacher tell an extroverted peer to "be quiet", yet I have been told to "speak up more."

Why must our society shove extroversion down everybody's throats? Why must our image of success be of somebody who is vocal about his or her strength rather than somebody who exudes an image of "quiet strength"?

Being introverted is no better than being extroverted. It's simply important to recognize how fundamentally differently people thrive at either end of the extroversion-introversion spectrum—let alone the multitude of ambiverted people in between. We must accept each other's differences and work together to create professional and personal environments that allow for ambiverted, extroverted, and introverted people to coexist.

After all, embracing diversity in people's personalities is as vital as embracing ethnic, racial, spiritual, and sexual diversity.

What's In a Name?



ELIZABETH SALSBERG
3T NANOTECHNOLOGY

There are fourteen undergraduate engineering programs at the University of Waterloo. Some can be classified as "traditional" engineering disciplines, such as Mechanical, Electrical, Chemical, Civil, etc. Some are newer strands of engineering, coming in the form of Software, Computer and Biomedical to name a few. Most would probably agree that the names of these programs reflect their content well. This means that, prior to applying to these programs, potential applicants have a reasonably accurate idea of what they can expect to learn about in the program, and the degree they will receive following the completion of their program.

There is, however, a needle in the naming haystack: "Nanotechnology Engineering" is the name given to an inherently multidisciplinary program with foci in chemistry, physics and mathematics, electrical engineering and materials science. Foundational knowledge in each of these areas is essential to engineer next-generation materials in areas of biotechnology all the way to maintaining Moore's Law of doubling the number of transistors on a chip. This knowledge is also critical for zooming out to a higher level, where engineers determine how to use these materials and their properties effectively to create new products, or enhance performance of a current product.

Still not convinced materials science is interesting? Some example of applications include: drug delivery. Quantum Information. Medical Imaging. Communications. Displays. Optics. Microfluidics. Polymeric materials. Composite materials. Aviation. The list goes on. What's the common link? Materials.

In much the same way that one associates coding with software engineering, or bridges, roads and infrastructure with civil engineering, materials science is the bread and butter and of the Nanotechnology Engineering program.

Most of this work is done at the nanoscale, which is presumably the rationale behind the name "Nanotechnology Engineering". However, the vast majority of high school students applying to the program are not able to make the connection to materials. Instead, many may apply with the idea that Nanotechnology is modern, cool, ground-breaking, innovative, etc.

To be absolutely clear, most applicants are simply unclear on what "Nanotechnology Engineering" entails. The supposed "naming difficulty" comes from the fact that it is so hard to find one name that can possibly capture all of what Materials Science and Engineering allows us to do.

A question to ponder: why not change "Nanotechnology Engineering" into "Materials Science and Engineering"? Though perhaps not as exciting as "Nanotechnology Engineering", it is without doubt a more accurate representation of what our community invests time, energy and effort in, day in and day out.

Cooking with Cam

Healthy Snacking with Tofu Fries



CAMERON SOLTYS
3A MECHANICAL

COOKING WITH CAM

Hello again, my apprentice chefs! I am back from my long trek around the mysterious land of Middlesex County, South-Western Ontario, with exotic new foods and cooking techniques. Without actually looking, I assume that you have become slack and wasteful in your pursuit of culinary knowledge, so let me remind of the rules of this gastronomic temple: no buying new ingredients, no looking at the recipe, and no throwing a dish out because it is "unfit for human consumption."

Much to my surprise, some people don't like to eat the same thing over and over until your ingredients run out. News flash sheeple: you can save money on inventory costs by minimizing your ingredients. You can only eat one dish at a time, so if you buy ingredients for two dishes then the second set just takes up valuable space and money in your cramped and unsanitary apartment. Do you think the auto industry uses just-in-time production because management are masochists who really appreciate the extra stress having no inventory entails?

But anyway, someone (who will remain un-named) decided that he or she didn't want to eat syrup-covered-tofu wraps for dinner three days straight. To her or his credit, he or she then took it upon herself or himself to make a delicious new tofu dish while adhering to my three laws of foodie-dynamics. So without further ado, I present Dad's Home-made Tofu Fries.

Start with a block of tofu. Cut it into French-fry-esk rectangular prisms. Now take three bowls. Into one, put an amount of flour. Add salt, paprika, and some but not all of the other spices in your cupboard. If you don't have flour, my understanding is that wheat is basically grass, so you could try using that instead. Mix.

Crack an egg, and put the egg (with shell) into the second bowl. Now remove the shell and think how your actions are similar to those of participants in the infamous Milgram experiment.

Into the third bowl put the egg shell. That's your compost.

Get a fourth bowl and add panko, paprika, and any of the spices that didn't go into your flour bowl. Should you be out of panko, I suspect crumbled Olive-Oil-Cracked-Pepper Triscuits, actual bread-crumbs, or finely chopped M&Ms would suffice.

Now put a pan on the stove, and load it with butter. Once the butter starts to melt, do as follows: Dunk a tofu prism in flour. Once the tofu is covered in flour, take it out of the flour bowl. Dunk the same tofu prism in the egg. Once the tofu is covered in egg, take it out of the egg bowl. Dunk the same tofu prism in the panko bowl. Once the tofu is covered in panko, take it out of the panko bowl. Place the same tofu in the pan. Repeat the previous 7 steps 10 times. Repeat the previous step until you run out of tofu. If you run out of tofu while on another step, you totally screwed up the dimensions of the tofu prisms. Have you seriously never had fries before?

Once the tofu cooks, take it out of the pan. (Man, do I really have to explain everything to you?) Eat it. Goes well with ketchup, on top of a salad, or as a light mid-morning snack. Happy frying!

Point Vs. Counterpoint

Will the Denver Broncos or the Carolina Panthers Win the Super Bowl?

POINT

RAEESA ASHIQUE
2A ELECTRICAL

Ideally, I would be writing this PCP on why the Patriots will be kicking butt next Sunday. As a long-time fan, I naturally called the Patriots defending their title this year. I obviously called it wrong. But let me tell you, I have a great deal of respect for Peyton Manning. I hate most of the teams who have defeated the Patriots in the past, but Peyton Manning is one of the few quarterbacks from whom I can graciously accept defeat.

Which is why I believe that the Broncos will go all the way this year at Levi's Stadium on February 7.

First of all, their record definitely does them credit. They finished the season as the number one seed in the AFC with a 12-4 record, enjoying a first round bye during Wild Card weekend and home field advantage for the AFC Championship game. They've also beat the Patriots not once but twice since November 29, which is a feat impressive enough to convince me at least that they are Super Bowl worthy.

So how about that AFC Championship?? The Broncos certainly played an impressive game, especially on defence. They sacked Brady four times, and pressure on the quarterback caused him to finish 27 of 56 for 310 yards with a passer rating of 56.4. Brady's offence was held to 18 points, with only one pass touchdown and two interceptions, and the game ended with a failed two point conversion and a failed onside kick recovery.

In less words: the Broncos played amazing D. Notable names include outside linebacker Demarcus Ware who kept pressure on Brady all day, and outside linebacker/defensive end Von Miller who finished with 2.5 sacks, and a pick to set up Manning's second passing touchdown.

On offence, Manning finished 17 of 32 for only 176 yards. But two touchdowns and no interceptions still sound like pretty good stats to me.

So why will the Broncos win the Super Bowl? It is a combination of reasons.

Number one: defence. Need I repeat the stats? The Broncos finished the season ranked number one in the league for defence overall, and also led in sacks and yards allowed per game. There is no denying that the Carolina Panthers have a very talented, dynamic offensive approach, but they will definitely face a very competent contender in this

Super Bowl matchup. I'm looking forward to a game featuring strong players.

It is vital that the Broncos focus on offence. Peyton Manning has faced injury and doubt all season, as he missed seven starts with a plantar fascia tear in his foot, but he still has the talent and razor sharp mind which he always has. No one should be underestimating this legend. The Broncos' issue is offensive mistakes and missed opportunities: dropped passes have been haunting this team, with seven in their 23-16 victory over the Steelers in the Divisional Round. However, this offence can be unstoppable as long as they hold on to the ball. They have strong play-makers in Demaryius Thomas and Emmanuel Sanders, and as I said, Manning has what it takes.

Number two: experience. The Panthers have a great leader in Cam Newton, who without a doubt has had a phenomenal season and will most likely be MVP, but this number one overall draft pick has only been in the league since 2011. Manning was also the number one overall draft pick in his year, but that was in 1998. There is definitely something to be said for experience.

The Broncos played in the Super Bowl just two years ago, and boast five consecutive division titles. This will also be Manning's fourth Super Bowl appearance. Therefore, they know what to expect with regards to the hype and the pressure, and are built to survive it. As a team with less playoff experience, the Panthers may be put off when it comes to the big game.

Number three: determination. Football is as much a mental endeavor as a physical one, and the Broncos have the determination not to back down. At 39 years old, Manning's athletic ability is waning and his return for another season is questionable. Demarcus Ware said of Manning, "He got hurt, and they sort of ruled him out. I saw him in the training room the whole time getting ready, and I can see it in his eyes like, 'I can't wait to get back on the field... I knew he was ready.'" Not only that, but the team's extreme respect for their quarterback is motivating them to send him off with a second ring to conclude his legendary career. This is definitely a factor.

No one captures the mental attitude with which the Broncos are entering this game better than T.J. Ward: "Go ahead. Keep us as the underdog... Tell us how bad we are and how we can't cover and stop 'this person,' and I bet we win the Super Bowl."

Yes, I bet they will.

DONOVAN MAUDSLEY
2T MECHANICAL

The Panthers are going to the Super Bowl this year after a thorough trouncing of the Arizona Cardinals in the NFC Championship game. And I mean a THOROUGH trouncing. The Panthers' defence was absolutely on fire throughout the duration of the game. Arizona was the second overall seed for the NFC, and they are not pushovers in the least. Carson Palmer, Arizona's quarterback, is an elite play caller, and is usually able to pick apart defences with help from his receiving corps. However when it mattered under the big lights, Palmer threw multiple interceptions.

A big part of the Panthers' success is the superstars on both offence and defence. Cam Newton is their All-Star quarterback and is known to fans as Super-Cam. A former Heisman trophy winner, Newton is able to beat defences on the ground with the cannon that is his powerful arm. The 2015 season was his contract extension, and did not disappoint. There is no question that Newton will be named the league MVP this year. On the other side of the ball, middle linebacker Luke Kuechly essentially owns every aspect of the game that Newton does not participate in. A former NFL Defensive Rookie of the Year, Kuechly is almost single handily responsible for the defensive success that the Panthers have had. Quarterbacks tend to stay away from targeting Kuechly, while he consistently takes them down. He also notched four interceptions this year.

The Panthers were the closest thing to a perfect team this year. They went 15-1 through the season and only lost to the Falcons, a non-playoff team whom the Panthers had crushed two weeks earlier. There weren't many terrific teams on the Panthers' schedule, but even the ones who were couldn't seem to stem the tide of Cam Newton.

The Panthers have the highest octane in football this year, averaging just over 31 points per game. Combine that with a defensive unit that allowed an average of 19 points per game, and you have a very successful team. They entered the NFL playoffs as the number one seed in the NFC and got to sit out during wild card weekend. During a thrilling game in sub-zero Minnesota, the Seahawks beat out the Vikings for

COUNTERPOINT

the chance to play in Carolina. In the Divisional Round the Seahawks and Panthers played a strangely one-sided game. The Panthers owned the first half, outscoring the Hawks 31-0, but got shut down in the latter half. The final score of 31-24 was fair for the game.

The Panthers are going to be playing Peyton Manning and the Broncos in the Super Bowl. This is going to be Manning's fourth trip to the Super Bowl, and although he is widely considered one of the all-time greatest, he only has one ring. He broke the record for the all-time lead in passing yards this year, but right after that, his arm seemingly gave out and he was benched for Brock Osweiler. The majority of the Broncos offence is contributed by Manning, so shutting him down will be the Panthers' key to owning the game.

The Broncos also have the number one defence in football, which was on display this weekend against the Patriots. The linebackers corps is an elite unit and is going to have to be shut down if the Panthers are going to play their game. Cam Newton needs to qualify as the dual running and passing threat that he is, so the Panthers offensive line will have to dominate all game. The Broncos' cornerbacks also have a large amount of shut down capability, so the Panthers' receivers will have to be as sharp as possible.

I called the Panthers to win the Super Bowl once the playoffs were set. They are able to overwhelm some teams and confuse others with their offensive tactics. I don't think that the Broncos have what it takes to really own the game against the Panthers. Manning's arm has been better in the last few games that he's played, but under the constant pressure that the Panthers will subject him to, I think he'll crack. The real trick to beating Peyton Manning is to get him moving and to keep him on the ropes. As a Chargers fan I have seen Manning at his best, and Manning when he's outmatched.

Carolina is going to win the Super Bowl. A mean combination of elite players and strong team tactics is going to take them all the way. The constant offensive power of Cam Newton's huddle is going to swell over Denver's defence, and they will make it look easy. Newton and Kuechly will both earn their first Super Bowl ring, and the Panthers' organization will take home its first Lombardi Trophy.



The Flint Water Crisis and the Failures That Caused It



NINA FENG
4B ENVIRONMENTAL

LEAFY THOUGHTS

Hey all, here we are in the home stretch of Leafy Thoughts, and this issue I'd like to catch y'all up on the state of the water crisis in Flint, in case you haven't been following the developments. No doubt it's turning into one of those things they'll mention in future drinking water treatment classes, akin to Walkerton and Toledo.

Flint is a city in Michigan of just over 100,000 people, the seventh largest in the state. Located about 100 kilometres northwest of Detroit and west of Sarnia, they have been experiencing a severe case of drinking water contamination since April 2014 that has resulted in adverse effects to public health. Elevated levels of lead in thousands of residents have been discov-

ered, resulting in various health problems.

It all began when, in March 2013, the city council decided to cut costs by switching their water supplier, the Detroit Water and Sewerage Department (DWSD), to another company, the Karegnondi Water Authority (KWA). Both suppliers source their water from Lake Huron. DWSD was reluctant in severing their long-standing agreement, making a final counter-offer that was ultimately rejected. As a result, they gave a 12-month warning of termination, cutting off services in April of 2014.

However, the KWA plant was not slated to finish construction until 2016. Flint therefore chose to obtain their water from the Flint River, running through the city, and treat it themselves. An unanticipated factor in the switch was the fact that the river water was more corrosive to the city's old piping and aged infrastructure. No tests were conducted to check for such an occurrence. The old pipes have since leached large quantities of lead into the system.

Despite having switched back to Detroit, residents are still facing tough challenges in receiving safe drinking water.

Complaints from the residents dealing with strange tastes and smells were largely dismissed by the Michigan Department of Environmental Quality (DEQ). When shown samples of turbid, brown water, state regulators stated that the water was still safe to drink, and that "aesthetics" were not regulated. It was claimed that homes serviced with lead-laden piping were tested for contamination when in reality it is unknown which homes actually source their water from such pipes.

Action was not taken until October 2015, when Flint physicians ended up bringing fairly conclusive proof of contamination, showing that instances of elevated blood lead concentrations had nearly doubled for young children since the water switch. Furthermore, a link between the Flint crisis and a spike in deaths from Legionnaires' disease has also been suggested. A state of

emergency was declared in December for the city, and a county-wide one was subsequently accepted by the governor for the entire Genesee County. Two DEQ officials have since been suspended by Michigan Governor Rick Snyder, with some powers returned to the mayor of Flint, Karen Weaver, after the state had taken control. President Obama has also granted \$5M in funding by signing an emergency declaration.

While government officials from all levels have been working to improve the situation, Flint residents have since been relying on rations of bottled water, including some provided by Ontario cities such as Windsor. Hamilton mayor Fred Eisenberger has offered advice in dealing with infrastructure renovations in similar cases. The situation was exacerbated by poor management. Since then, a number of class action lawsuits have been filed against the Governor, the ex-Flint mayor, and several state officials.

Just What Is Going On In Iran?

Continued from Page 5

Amir Hekmati was a former U.S. Marine who was arrested and charged with spying in August 2011, after he visited Iran to see his grandmother. After confessing to spying, seemingly under coercion, Hekmati was sentenced to death in 2012. However, the Iranian Supreme Court overturned the death sentence. He was instead sentenced to ten years in prison, and according to his family, he was tortured and kept in inhumane conditions.

The fourth prisoner who was released as part of the exchange was Nosratollah Khosravi-Roodsari. There is very little information available about him. Before the announcement of his release, it was not even known that he was imprisoned, or for that matter, that he existed. While the other prisoners left Iran almost immediately, Khosravi-Roodsari chose to remain in Iran. Neither government will release any details, though the U.S. states that he had been wrongfully detained.

A fifth prisoner, Matthew Trevithick, was also released, although he was not part of the prisoner exchange. He was a student studying in Iran, who had been arrested fairly recently.

The seven Iranian prisoners who were released from American prison were all charged with violating sanctions. Like Iran's

prisoners, most held dual Iranian-American citizenship. According to the BBC, their names are Nader Modanlo, Bahram Mechanic, Khosrow Afghani, Arash Ghahreman, Tooraj Faridi, Nima Golestaneh, and Ali Saboun.

These prisoners and their situation had been a large source of political debate in the United States. Many Republicans, in particular front-runner Donald Trump, have criticized the Obama administration for not working hard enough to get the prisoners released. Trump, after their release, took some credit for the accomplishment on the grounds that he had been raising the issue, despite the fact that their repatriation was achieved through diplomatic overtures to Iran that he has consistently opposed. Furthermore, the negotiation to release the prisoners had been going on for more than a year.

Iran remains a source of division in the West. Some hail the current American government's slow and cautious build-up of relations with Iran as a tremendous step forward and an achievement; others insist that it is a mistake that will be a source of regret in the future. On the other hand, Iran is just as factionalized as America, and negotiations are equally controversial in Iran.

Here's to hoping that the two countries can, at the very least, agree to disagree.

Chocolate Isn't All Rainbows and Butterflies?



RAEESA ASHIQUE
2A ELECTRICAL

The United States Supreme Court has refused to dismiss a child labour lawsuit holding Nestlé accountable for human rights violations on its cocoa plantations in Western Africa.

The chocolate industry is worth an estimated £60 billion per year, and Ivory Coast is the largest producer of cocoa in the world. Nestlé's plantations there have been under scrutiny for years. The current case dates back to 2005, when human rights lawyer Terry Collingsworth filed a lawsuit in California federal court against Nestlé, as well as Archer Daniels Midland Co. and Cargill Inc., on the grounds that these three companies offered financial and technical assistance to the farmers guaranteeing the cheapest source of cocoa, while fully aware of child slavery and trafficking occurring in these settings.

The three plaintiffs were taken from their homes in Mali to harvest cocoa beans in Ivory Coast, where they were locked up, physically abused and forced to work long days without pay. Collingsworth said, "On behalf of current and

former child slaves in the cocoa sector in West Africa, the plaintiffs hope their case will help to end this inhumane practice."

The Supreme Court's decision has left in place the December 2014 ruling in the San Francisco-based Court of Appeals refusing to dismiss the lawsuit.

A significant factor in this case is the 2013 ruling in the *Kiobel v. Royal Dutch Petroleum Co.* case, in which the court unanimously dismissed the allegations of torture and murder by twelve Nigerians against Royal Dutch Shell Plc, on the grounds that the Alien Tort Statute (ATS) does not apply extraterritorially. ATS was part of the 1789 Judiciary Act, which presumably was intended to convince foreign companies that the U.S. would act should there be a breach of international law. This ruling has been cited many times in similar cases against American companies. The Appeals Court has suggested the plaintiffs amend the lawsuit, and Collingsworth has said that "we will amend our complaint and we'll see if the defendants want to try to dismiss it again, but we're hoping we are moving closer to getting to trial."

Nestlé has made efforts to eliminate these practices on their plantations through education and training. However, awareness remains much lower than desired due to a lack of participation on the part of the farmers who are too busy or simply uninterested. In a statement, Nestlé said "The use of child labour is unacceptable and goes against everything Nestlé stands for. Nestlé is committed to following and respecting all international laws and is dedicated to the goal of eradicating child labour from our cocoa supply chain."

It remains to be seen if their policies are sufficient, as the Fair Labour Association (FLA) does not agree. Nestlé is currently lacking a system to verify the age of workers, as the FLA has discovered during plantation visits that dozens of workers were under the age of eighteen, with many under fifteen, and were not attending school.

Different business groups, including the U.S. Chamber of Commerce, have pushed for the court to hear the case. It seems that the Supreme Court's ruling will encourage the case to head in that direction. Let's hope that, over ten years later, these companies will be brought to justice.

KITCHENER WATERLOO



TRAVEL
Clinic

Travel Vaccines
& Advice
by Appointment

Health Canada Certified for Yellow Fever

519.570.4208

www.kwtravelclinic.ca

Physicians Certified in Travel Medicine

DeRozan, Lowry lead Raptors towards All-Star Break



Sports fans—welcome to a new term and the third anniversary of the Benchwarmer Report! We want to hear from you! If there's any sports-related content you want to see covered, or just to stir up a discussion in a published paper, feel free to send in your Letters to the Editor.

With that, let's get into this issue's content: How about those Raptors?! How about that backcourt?! DeRozan and Lowry have powered the Raptors to a seven-game winning streak, featuring an overtime thriller against the Orlando Magic in London, England. The Raptors sit second in the Eastern Conference, only behind the LeBron (Cleveland) Cavaliers.

Looking ahead to the playoffs, this would be a good position to be in to avoid the Cavs in the first and possibly second round. If the season ended today, the Raptors would face off against division rival Boston Celtics; a more than manageable opponent if Dwane Casey can convince his team to play proper defense for all 48 minutes.

Heading into the All-Star break, the Raptors play four more games at home and five away games. The Raptors need to stay hot, particularly through the home games, to put some distance between themselves and other strong teams in the East; the Chicago Bulls and Atlanta Hawks.

Extra emphasis should be put on the Bulls, as they are team that Toronto has consistently struggled against the past. Though Toronto is superior in the backcourt, our Bigs don't measure up to Joakim Noah and Co. Though Noah was injured when the two teams last met, count on him having an impact when he's back. The teams' next meeting on Fe-

bruary 19, following the All-Star break will be a true test of the Raptors' defensive mettle. Bismack Biyombo, get ready to play a lot of minutes.

Despite the phenomenal play of DeRozan and Lowry, defense will be absolutely essential going forward. Nevertheless, it's worth touching on the All-Star performances of our starting guards: DeMar DeRozan has scored a whopping 30 points or more in each of his past three games—combined with Lowry, DeRozan is the other half of what is the best starting backcourt in the NBA.

Lowry (point guard) has been voted in to the All-Star Game as a starter for the second straight year. It's hardly any surprise: Averaging 20.7 points, 6 assists and 5 boards a game, he has helped lead the rest of his team to great performances night in, night out. Each offensive trip can feature a sweet dish to Terrence Ross for a three-pointer, pass in the lane to big fellas JV, or Biyombo for a flush, or a trey (three-pointer) of his own to

name a few.

Most importantly, Kyle has contributed immensely to the development of DeMar DeRozan, who has been a stud for the Raptors in his contract year. Should he choose to return to Toronto, hand some credit to Lowry. Case in point: Bet on DeRozan being named (as a reserve) to the All-Star game by NBA coaches this week. Bet on him making Team USA and his Olympic debut this August in Rio.

All in all, the Raptors are in good shape for nine games before the All-Star break. After the break, there are two priorities. First and foremost, Casey will need to be on all of their cases about defense. 48 minutes, no less. Second, DeRozan and Lowry will need to continue to be excellent, as they are the core of the team. Given their performance so far... I doubt this will be a problem.

There is a long way to go yet, but hold on Toronto—there's some great basketball to look forward to!

EngSoc Sponsored "Little Plummers" Defeat Piller's 6-2

LEILA MEEMA-COLEMAN
KEVIN MCNAMARA
4B MECH & 4B CIVIL

For the third year in a row, the Waterloo Engineering Society sponsored a team in the Waterloo Minor Hockey Association. Last Sunday, excited engineering students gathered at Albert McCormick Arena to show their support for the society's team. The game was evenly matched, with the Waterloo Engineering Society "Little Plummers" (the nickname created by UW Engineers) playing the Piller's. With personalized signs for every player lining the stands, and a lot of loud engineering spirit, the atmosphere in the rink was electric. It is hard to say who had the most fun: the players, the parents, or the engineering students in attendance. One thing is for sure though, the event was one to

remember.

The game got off to a slow start with a 0-0 score in the first period, but then a strong showing by the Little Plummers in the second period led to three goals! The third period saw another three goals for the Plummers and in a nail-biter Piller's started to mount a comeback scoring two goals. Fortunately, it was too late, and the Plummers came away with a 6-2 victory over their opponents. Congratulations are due to both teams on a very hard fought game! Each player skated strong, and every one of them has something to be proud of.

In the Spring 2013 term, the Engineering Society began researching into the process of sponsoring a minor sports team, settling on the Waterloo Minor Hockey Association. Waterloo Minor Hockey provides four levels of play, ranging from house league (recrea-

tional) to AAA. The Engineering Society's team is made up of sixteen players born in 2006 in the recreational Minor Atom Division. The cost to sponsor a recreational team for the season is \$400, which helps pay for jerseys and all the other costs of running the team. This is our third year sponsoring a team, and we have loved every minute of it!

The goal of sponsoring a team was to help out the community and show the Engineering Society's support for giving back. By organizing a group to attend the game, the hope was to cheer like crazy and have the players feel like they are playing in the NHL. As a 9 year old, to have over 30 people randomly show up to your game and cheer non-stop for you for is probably about as exciting as it gets. Everyone at the game was ecstatic, with many parents requesting that we attend every game for the rest of the season. Though the

loudness may have been a bit overwhelming to the players at times, it was easy to tell that they were enjoying every minute of it.

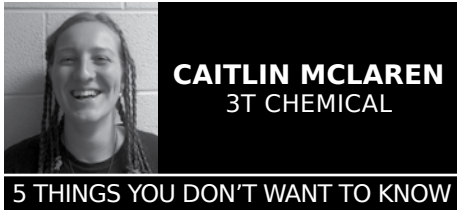
Having the Engineering Society logo on the back of the team's jerseys and seeing the excitement that the players have to go out and represent the Society on the ice is worth much more than \$400. This is an initiative that will last from year to year, and continue on as a tradition. There is massive potential to expand this to a larger scale in the coming years, with more events, more games to watch, more teams sponsored, and more kids who are able to have a great time and represent the Engineering Society. Whether this means attending more games, sponsoring different sports, sponsoring more teams, or expanding to have other societies on campus sponsor teams as well, this marks the continuation of a great tradition.



Jake Harvey via EngSoc Flickr

The "Little Plummers" played well and were excited to perform in front of such a large audience

Five Things You Don't Want to Know



Disclaimer: This column is rated R.

Welcome back to the column of horror! All hope abandon, ye who enter here. In case you are new, this is the column where I write about how disgusting, foolish and generally insane your ancestors were. Yes: yours, and yours, and yours. Don't be ashamed—we are all in the same boat.

Religion in ancient times was quite a bit more weird than religion today. Here are some examples of very strange religious beliefs the ancients had. SPOILER: ancient gods were very, very perverted.

The Greek Gods were into bestiality, other weird things

The Olympians were famous for their... escapades. None was more famous than Zeus, whose conquests included: impregnating a woman in the form of a shower of gold, raping a woman while in disguise as a swan, raping a different woman in the form of a bull, and, just for a change, raping still another woman and turning her into a cow. The cow thing was meant to hide her from Zeus' wife, who also happened to be his sister. You know you are perverted when marrying your sister is the least weird thing you are doing.

Hawaiian goddesses were like X-rated Mr. Potato Head

Ancient Hawaiian gods and goddesses were, like most divine pantheons, rather

fond of sex. However, unlike Zeus, they did draw the line somewhere. For example, the goddess Pele was courted by the god Kama-pua'a, but she was less than enthusiastic. This is because he was a pig – literally and metaphorically. That is to say, not only was he a porker, but when she friendzoned him, he chased her all over Hawaii trying to rape her.

Fortunately, Pele had a sister named Kapo, who came to her rescue with a completely sane and logical plan. That is to say, she pulled her vagina off and threw it into the air to distract Kama-pua'a. Well, that would be distracting. The pig-god then went chasing after the vagina, because that was really the only part of women he cared about, and Pele and her family went off and hid.

Kapo then said, "Meh, I don't really need that vagina any more" and left it to wander around Hawaii. No one knows where it is to this day, though some point to a volcanic crater on Oahu, which is certainly impressive if true. From then on, Kapo was known as Kapo-kohe-lele, which means "Kapo with the flying vagina". This needs to be made into a superhero movie, stat.

Mesopotamia's geography was formed by...

In the ancient Middle East, life largely depended on the rivers Tigris and Euphrates, which caused the land to be fertile. Naturally, it is pretty reasonable that sexual fertility was associated with agricultural fertility. Of course, the logical next step is to believe that the god Enki dug them... with his own penis. It seems like a rather inefficient way of doing it, but shovels were probably not invented back then. Unsatisfied with just

the rivers, he then invented irrigation, digging the ditches in the same way. To bring life to the rivers, he then mated with them, meaning that the water is exactly what you think it is.

Enki went on to invent sexual reproduction... afterwards, which means that instead of symbolically bringing life, at the time he had just been messing around and attached a meaning to it later. Well played, dude.

The Egyptian god Horus had a sex competition... with his uncle

Horus' uncle Set was a pretty bad dude. In the first place, he killed his brother, Horus' dad Osiris, which meant that Osiris' wife (and sister – notice a theme here?) Isis raised Horus to kill his uncle in revenge. Naturally, this meant that before they had their epic fight to the death, they first had to establish sexual dominance.

Set decided to do this the old-fashioned way, by raping Horus. Fortunately, Horus managed to escape this, and made off with a handful of Set's sperm. He understandably washed his hands in the river, and then proceeded to get revenge much more sneakily. That is to say, he put his own sperm in Set's salad, which Set did not notice for some reason. Presumably there was a lot of ranch dressing on it.

For some reason, Set and Horus went before the other gods to have their sexual dominance judged. Apparently in ancient Egypt, divine sperm could talk, and the other gods called upon the sperm to speak up so that they could locate it. When it turned

out that Set's sperm was in the river, and Horus' was in Set's stomach, the panel of judges awarded the case to Horus.

THEN they had a fight to the death. If only politics was settled this way today.

Japanese mythology has nothing sane about it

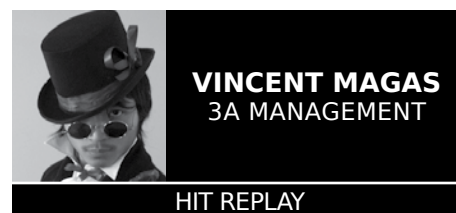
It's true: literally nothing is sane. Let's start from the beginning.

In the beginning, the earth was void and without form. Then, the god Izanagi had sex with it. Some versions say he only stabbed it with a spear, but c'mon, we all know what that means. The semen floated to the top of the ocean and formed an island, where Izanagi settled down with his wife Izanami. They then had a bunch of kids who were also islands. Unfortunately, Izanami then got pregnant with fire, which burned her and caused her to lose control of her bodily functions and die. All of the poop, vomit, etc. turned into more gods.

Izanagi then went to the underworld to get his wife back. However, she said, "Ok, I'll come back, but don't look at me because I am a gross rotten corpse." Of course, he looked at her and was horrified. This made Izanami angry and she tried to kill him. Since the only way these gods solve problems is with body fluids, Izanagi peed out a river to separate the world and underworld, thus keeping the zombies safely away. Unsurprisingly, they then got divorced.

The weirdness in Japanese mythology doesn't stop there. Tune in next issue for more.

From Assyrian Footwear to Modern Day Wallets Pt.1



Let's put that vinyl record back on the turntable, and let that needle drop! We're back for another term of Hit Replay, your quick source for trending items, fads, hobbies, and practices that look oh so similar to something that hit the world before. If you are feeling déjà vu, if you can say "Hey! We did that back in the 70's!" or if you can picture Queen Victoria sporting it, we'll probably cover it here on Hit Replay! So let's start another term of repeated trends and hits from the past!

In this issue, we're going back thousands of years for a practical and versatile art form that's been gaining momentum and increasing interest in the past few years. We go deep into the magic that is behind modern leather jackets, bi-fold wallets, artisan crafted leather belts and steampunk inspired leather vests. In this issue we'll talk about the deep history of the craft that is leatherworking and try to scratch the surface of its inner workings!

Arguably one of the oldest materials in human history, animal skin was first used by our hunter-gatherer ancestors in various applications, often in making shelters or various articles of clothing. This unprocessed and untreated animal hide was very susceptible to the environment, often becoming stiff in colder temperatures and prone to rotting in the heat. The need for better durability and flexibility led to the early rudimentary process of tanning, using vegetable tannins. Tannins, which are naturally produced on the bark of plants and trees, would bind themselves to the collagen proteins found in the hide which resulted in water and bacterial resistance, and added flexibility to the

material. The process involved the constant stretching of the hide on tanning racks, and the repeated soaking of the hide in vats containing tannin mixtures.

The earliest mentions and records of a more complex tanning process can be found in ancient Assyrian, Egyptian and Greek texts (c. 2500 B.C.). A tanner would typically work in a tannery located far out in the outskirts of a city or town due to the foul odours caused by the materials used in the tanning process. The animal skin would often arrive at the tanneries dried stiff and covered in dirt. A tanner would go through a lengthy cleaning process which involved soaking the skin in water to soften, and scouring the skin to remove any remaining flesh or fat. The animal skin was then cleared of all hair fibres by soaking in animal urine or a coating of an alkaline-lime mixture, which is a process called liming that helps to break down keratin proteins. Once completely de-haired, the animal skin then goes through a softening process called bating. An ancient tanner would bate the material by pounding and kneading fermented animal dung into the skin, or in some cases soaking the skin in animal brains. The enzymes would continue to break down proteins in the leather, allowing it to be more pliable. The finished product was a supple, flexible material which could be cut, sewn, and worked into various items!

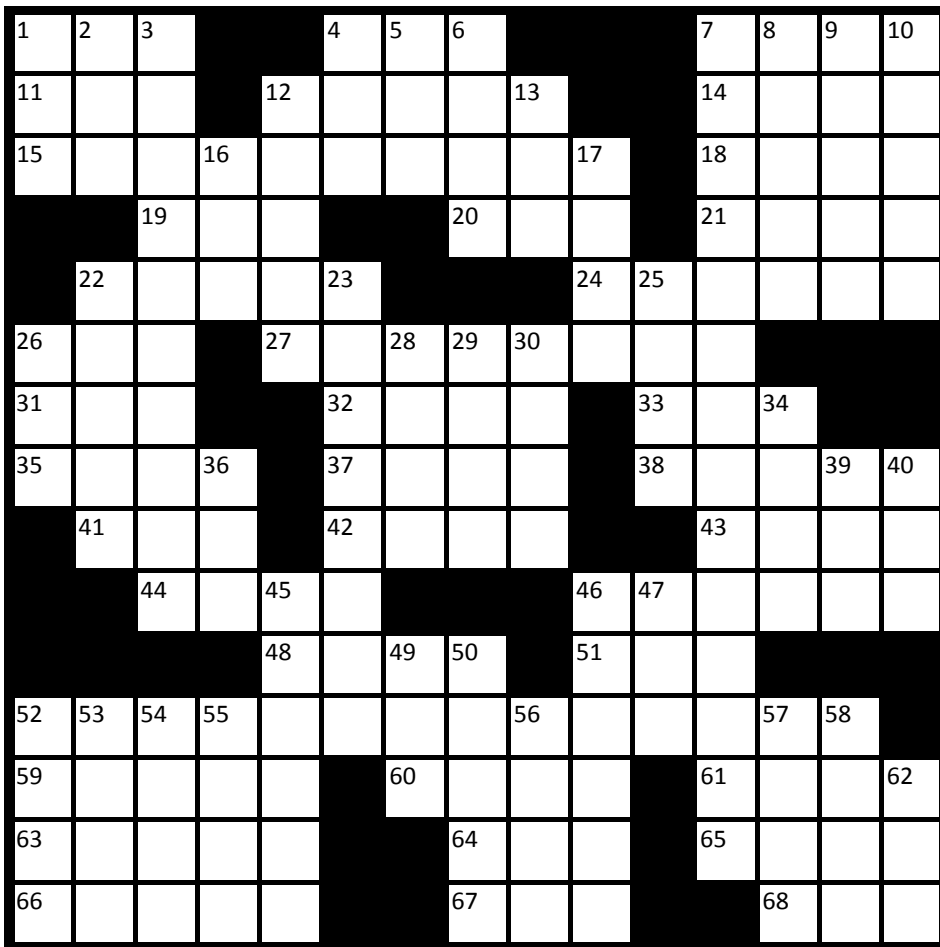
In modern times, the entire tanning and preparation process remains largely unchanged except that it is completed with the use of various synthetic alternatives, and with the aid of machinery. However, there are do-it-yourself enthusiasts, who still practice variations of the older methods!

In the next issue of Hit Replay, we'll dive into the next stage of leather craft! We'll take the processed and tanned animal hide and go through the various applications it has seen throughout the ages until we arrive to the 21st century!

The Iron Crossword

What do you want to watch?

CAMERON SOLTYS
3A MECHANICAL



ACROSS

- 1: Female sibling
- 4: Chest cavity-protecting bone
- 7: Online marketplace and auction house
- 11: I see you!
- 12: Tape recorder, pocket calculator, and calculator watch company
- 14: ___ Mountains, highest mountain range in Sierra Leone
- 15: Famous affair-having golfer
- 18: Den, particularly one for a deadly beast
- 19: reddit abbreviation for an event where a public figure asks questions
- 20: "Just a ___"
- 21: Society of journal "Endoscopy" (abbr)
- 22: Boson ___, national hockey team
- 24: Leader of a choir
- 26: Signal for help
- 27: Lasagna loving feline
- 31: Firework exclamation
- 32: Potato-like plant known as "Elephant Ears"
- 33: Nano-scale imaging technique that ob-

serves electrons passing through sample (abbr)

- 35: Name for Apple laptops
- 37: "___ knocked down" Chumbawamba lyric (2 wd)
- 38: Fast-moving and evasive
- 41: Home of Waterloo's apparel store and one of it's many Tim Hortons (abbr)
- 42: "I'm ___ dollar" phrase when a deal doesn't go your way (2 wd)
- 43: Name of the first chimpanzee to achieve Earth orbit
- 44: Oven for the firing of clay
- 46: Man with the catchphrase 55 down
- 48: With a canoe or rowboat, perhaps
- 51: Computer memory management feature that allows 32-bit systems to address extra memory (abbr)
- 52: Religion of Vatican City
- 59: Chef's protective clothing, perhaps
- 60: Star-nosed or naked, for instance
- 61: Valley where David fought Goliath
- 63: French cavalry forces recruited from their African colonies

64: Important resource which the Hudson's Bay Company still uses as an important income source

65: "Are you ___?" question of competence

66: American poet who penned "The Raven"

67: Charge for a service, often in addition to the nominal payment

68: Measure of the speed of a song

DOWN

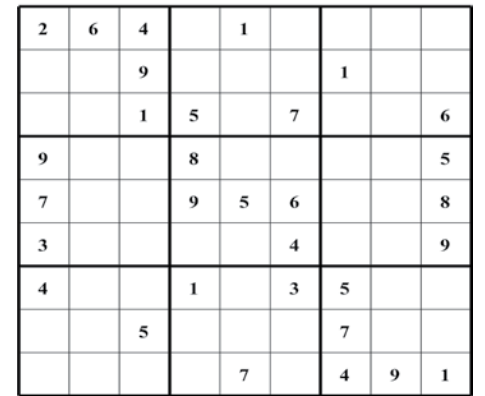
- 1: On a chair, perhaps
- 2: French for "here"
- 3: Building for the production of maple syrup
- 4: Not cooked
- 5: Organization that promotes international standards
- 6: Basic computer system that can does not support mice or graphics
- 7: Voice of Dory in "Finding Nemo" and day-time TV host
- 8: Brag about one's accomplishments
- 9: Spanish for male friend
- 10: easily maneuvered
- 12: Dean ___ Pelton of show "Community"
- 13: "___ to a Small Lump of Green Putty I Found in My Armpit One Midsummer Morning" Vogon poetic masterpiece
- 16: Australian ostrich-like bird
- 17: McMaster Science coop organization (abbr)
- 22: Sound of several bombs exploding
- 23: "The ___" Peter Mansbridge's CBC news program
- 25: Abbreviation of Alberta
- 26: Skating performance aimed at adults (abbr)
- 28: Meat-based sauce to be served with pasta
- 29: On a guitar, perhaps
- 30: An extremely small amount
- 34: ___ Cooper British small car
- 36: Greek letter that looks like an X
- 39: National Library of the USA (abbr)
- 40: suffix indicating similarity, but not congruity
- 45: Canadian golden coin
- 46: 3-D equivalent to a circle
- 47: Worth 6.28319
- 49: Previous name of local cellphone manufacturer (abbr)
- 50: Laugh mockingly or scornfully
- 52: Protective box
- 53: Name of the most famous Sky Bison of the "Avatar: The Last Airbender" universe

Sudoku

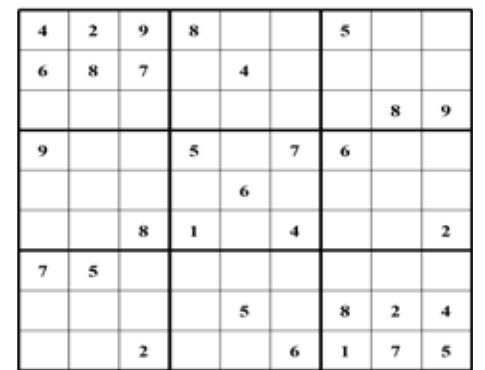
#2016-01

CAMERON SOLTYS
3A MECHANICAL

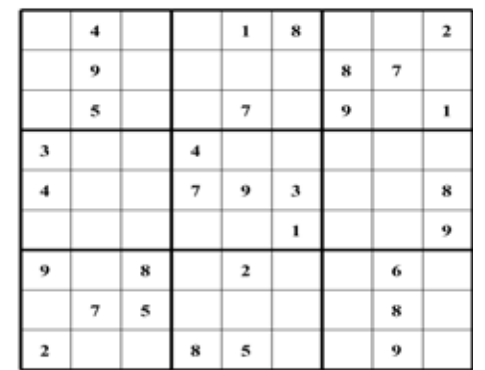
Easy



Medium



Hard



- 54: "It's a ___"
- 55: Catchphrase of man in 46 across
- 56: Sleuthing board game featuring colourful characters
- 57: Place for a party, or a weapon
- 58: Angelic musical instrument
- 62: Part of a garment that prevents the fabric from unraveling

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

THE IRON INQUISITION
Vince Magas, 3A Management and Jessica Keung, 3A Civil

"What is the Iron Warrior?"



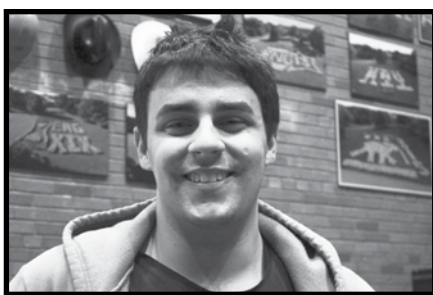
"Its like Imprint, but better"
David Birnbaum, 4B Civil



"It's an underground gladiator ring where they use clothes irons"
Simon Grgigg, 2A Mech



"Isn't that like, Tony Stark or Something?"
Melissa Ferguson, 4B Mech



"A book by Julie Kagawa"
Julien D'Alessio-Doucet, 3A Mech



"The Iron Warrior is a student run newspapers with good cpy editrs"
Silas Vriend, 2A Mathematical Physics



"The one with fewer issues than Imprint, right?"
Andrew Dawson, 1B Mech

Amit & Meena Chakma Awards for *Exceptional Teaching by a Student*

NOMINATE AN EXCELLENT *Teaching Assistant* TODAY!

**Nominations are
due Friday,
February 12, 2016**

Who can submit a
nomination?

- ❖ Undergraduates
- ❖ Graduates
- ❖ Alumni
- ❖ Faculty
- ❖ Staff

FOR MORE INFORMATION

- 📍 Visit us at EV1 325 or online at
<https://uwaterloo.ca/centre-for-teaching-excellence/chakma>
- 📞 Call: 519-888-4567 x33857
- ✉ Email: cte-aets@uwaterloo.ca



UNIVERSITY OF
WATERLOO

