

THE CARLETON STUDENT ENGINEERING NEWSPAPER

THE IRON TIMES

THE WEIRD AND WONDERFUL IRON TIMES

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OCTOBER 2016



Keely Gibb
- AERO I -

In Loving Memory

enthusiasm for bananas, and immaculate elbows.

It is with deep sorrow that we remember this loving character, this honorable role model, and great companion. He is survived by his loyal Viking fam (and I suppose the rest of EngFrosh), who keep his spirit alive and strong.

No memorial service will be held for this champion, as with every passing minute, the repercussions of his death resonate deep within our hearts and bones, and we don't want to overkill what has already



been slain. What is dead may never die.

"Deep in the heart of the Carleton jungle, you can hear Harambe rumble."

READ ON, I DARE YOU

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AND MUCH MORE!



WARNING:

This publication may contain offensive material. It should not be read by anyone who is easily offended. All opinions expressed within are solely those of the contributors; they do not reflect the views of the Carleton Student Engineering Society. This paper is purely satirical in nature and is not intended to be malicious in any matter.

If you wish to express your views on the content within, please email us at irontimes@cses.carleton.ca.



EDITORIALS

IN WHICH I PROVIDE PROOF THAT I AM, IN FACT, JUST IN OFF A FLYING SAUCER

Totally Metal

FROM THE DESK OF THE [^]EDITOR



Cassidy "Next" Lang
- AERO C II -

I decided to stick with the theme of metal lyrics because, hey, in order to deserve the title of "Totally Metal Editor," I have to do quirky shit like this. This month's lyrical genius is courtesy of the band Tribulation, an amazing band about whom I could rave all day, but this is not the place or the time.

I want to begin this editorial by saying that, logically-speaking, I think the supernatural is bullshit. I can't say that I really believe in any of it, at least not the stuff having to do with ghosts and spiritual hoopla.

However, there have been some pretty peculiar NAUTICAL situations in the history of the world that make you wonder if there's not more to this planet than meets the eye...

Ships have always fascinated me, especially the kind that sink. When I was a kid, I had a favourite picture storybook telling the story of the "ghost ship" called the Mary Celeste. While it did not sink (at this point in time, at least), it is infamous for being found crewless with its lifeboat missing in "dishevelled but seaworthy condition" in the middle of the Atlantic Ocean.

(Side note: My awe of shipwrecks at this tender age of 8 caused me to believe I wanted to be a marine biologist. Yes, NOW I know biology is the study of living things, thank you.)

The exceptionally mysterious as-



pect of this ship was that there was no evidence of foul play whatsoever. Her cargo of denatured alcohol was untouched. All the belongings of the captain, his family, and his crew were completely undisturbed. To this day, no one knows what caused every soul aboard the Mary Celeste to abandon ship, never to be seen or heard from again.

Logical explanations have been proposed to attempt to explain the ship's disappearance, most of which have to do with natural phenomena such as submarine earthquakes and water spouts. One theory even suggests a giant squid attack.

On the subject of weird shit to happen at sea... I'm sure you already know where I'm about to head with this. Oh, yes. The Bermuda Triangle, baby.

The Bermuda Triangle, in a nutshell, is the triangular area between (roughly) Florida, Puerto Rico, and Bermuda notorious for the unusual number of

ship and aircraft disappearances. Also, for some pretty funky compass activity and weather patterns, although the latter is mostly just speculation.

Then again, is it really all that unusual? It seems to be a really heavily travelled shipping lane (if Wikipedia is a reliable source) so perhaps the law of averages applies...

But honestly, I'm trying not to be a skeptic for five seconds, and no one can deny the Triangle's infamy, so let's take a little look at some of the occurrences associated with the Bermuda Triangle, shall we?

Possibly the first incident to come to mind for those familiar with the Triangle's reputation is the disappearance of five of the U.S. Navy's torpedo bombers that took a training flight over that area in 1945 and never returned to base. But here's the real kicker: the aircraft that was subsequently deployed to search for the bombers also did not return. Spooky.

In 1948, a similar mystery—the disappearance of a Douglas DC-3, which vanished without a trace of passenger or plane left behind. The investigation into the incident was inconclusive on the grounds of there being too little evidence.

Even before either of these aircraft went missing, back in 1881, the ship named Ellen Austin is said to have run across a derelict ship, abandoned by its crew, within the Triangle (apparently, crews deserted their ships often in the 1800s) on which they placed a "prize crew" to claim the ship and return it to port with the Ellen Austin.

As the rumours go, the derelict was lost at sea—along with the prize crew—never to return to port. How's

that for a bad reputation, eh?

I think what interests me the most about these unsolved mysteries is all the creative ways to imagine what COULD have happened, however illogical. The sea is vast. Who really knows what mysterious forces beyond our understanding could be at work?

What if the crew of the Mary Celeste was persuaded to desert by extra-terrestrials? What if the Bermuda Triangle actually contains a portal to another dimension?

It's a tough gig, being both a skeptic and a highly imaginative individual. Perhaps that's precisely why I enjoy challenging myself to think of (still fantastical, but) reasonable ways to integrate fiction with reality.

Take Stephen Spielberg's Close Encounters of the Third Kind, for example, in which the Navy bombers that fell victim to the Bermuda Triangle are actually abducted by aliens. It takes some work to convince an audience of the validity of such a claim.

It's in this way that legends are born. Most of these events happened so long ago that there's no way of knowing what's fact and what's been exaggerated to the point of fiction.

But sometimes fact is stranger than fiction. The lack of definitive evidence in all of the above cases leaves these historic mysteries open to ambiguity.

That being said, we'll probably never know the REAL stories of these legendary vessels with complete certainty. Their stories are ours to tell and ours to craft however we please.

Like Hermione says, "you could claim that anything's real if the only basis for believing in it is that nobody's proved it doesn't exist!"



EDITORIALS

I TRIGGERED MYSELF BY USING A DAINTY FONT FOR THE WORD "FEMINISM"



Emma Maddock
- ELEC II -

If you're a girl in engineering, you're most likely aware that we're not as many as we should be. Our classes are filled with guys, and you are most likely able to count the number of girls using only your hands.

That being said, the guys are more than welcoming and accepting of us.

However, there is more happening behind the scenes than we realize, working against us every day. From unwanted comments at parties, to mentalities and language, it's these subtleties that keep us from feeling truly equal to male engineers, and keep our numbers low.

So: I invite you to have an open mind reading this article. Let's start a conversation.

Discouragement from science in young girls starts from a young age. While young boys are encouraged to be handy and "ladies' men" (don't tell me you haven't heard an adult call a baby a "ladies' man" if he so much as looks at or touches a girl), the language around girls revolves more around our appearance, and being polite/proper.

This leads to boys who feel entitled to a lot of things, and girls not wanting to join in on those things, as they're taught it's not their place. Science is one of those things.

Science has long been a boys' club, which makes it hard for girls to fathom they have a place in it. According to Stats Can, boys with lower marks in high school are more likely to apply to STEM fields than girls with higher marks.

As evidenced by this stat, boys who are not doing as well as girls in school feel no hesitation in joining science, whereas girls are less likely to feel like they should, even though they're doing better. This leads to the small percentage

of girls in STEM fields we all see on a daily basis.

There are still some days I feel I don't belong in this (mostly) boys' club.

Another thing on the topic of girls in engineering is the mentality around femininity within the engineering community. If you're in a girl in engineering, you're thought of more as "one of the boys" as opposed to a girl in engineering. We become loud during chants, we swear, we drink beer, we yell like frat boys, we burp, we fart.

As great as it is to break down the barriers of having to be polite and proper as a girl, it doesn't allow us to embrace our femininity, if we are more feminine. If you aren't acting like the boys at an event, you stick out like a sore thumb. We host events like chick drink, or crossdressing, where it's funny to be a girl. It's a joke to be feminine.

We need to create space for femininity in engineering. I know it's not intentional, but it does contribute to girls feeling out of place in engineering if they aren't loud, if they don't like beer, or if they don't like swearing. I've seen a lot of this in my frosh.

And let me just say: we don't love being hit on or commented on. We don't owe you anything, especially not sex. I have heard stories of some girls in engineering who were asked for sex, repeatedly. Whenever I hear stories about hookups or one night stands, it's always about her.

All jokes about us are sexual. Our callsigns are dirty innuendos. It's not acceptable. We aren't here for your sexual entertainment, or to be sexualized for fun. This is not to say we don't enjoy sex or sexual activities, it's just to say we don't appreciate that it's expected or sought from us. It contributes to the alienation of girls in engineering, as it's almost part of our experience.

I was at an engineering party. I came to have fun, and after what happened, I just felt cheap and disgusted. We were sitting in a circle.

For some reason, we started going around the circle, seeing who could fold their tongue, as it's a genetic trait. You have it, or you don't. When it came to me, I happily folded my tongue, proud of being able to do it. I even folded it further into a W, which I'm oddly proud of being able to do.

That's when the guy sitting next to me, totally unwarranted, said: "What else can you do with that tongue, girl?" I felt disgusting. I didn't respond to him, or even look his way. He had been hitting on me all night, and never once did I respond, yet he still thought that it was okay to make a disgusting comment like that at me.

Needless to say, I come to parties to have a good time. Not to be commented on sexually, and to be made to feel cheap and uncomfortable in my own skin.

The point of this article was not to point fingers. It was to talk about some stuff going on in the engineering community with respect to girls that the rest

may have not been aware of. I'm probably going to get some hate for this, but that's expected.

All I ask is for you to think about how girls in engineering are treated, why there's so few of us, and what you can do to make us feel more welcome. There's some behaviour that can't go unchecked, and some experiences we've had that we don't want future girl engineers to have.

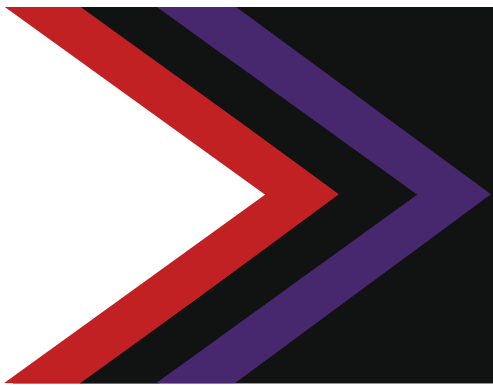
Maybe we're used to being thought of as one of the boys, but I see it in the face of my frosh: we don't necessarily love the swearing, or the aggressive yelling. I'm a feminist in engineering, and I sure as hell will not apologize for asking for change.

The official blog of the
Carleton Mechanical
and Aerospace
Society

Gearred Up!
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TAKING SUBMISSIONS!

**YOUR MECH & AERO
CURRENT EVENTS**



COLUMNS

ALSO A STORY OF WAR, TRAGEDY, DEATH, AND ALL THAT GOOD STUFF



A Story of Guns, Dictators, Assassins, and a Canadian Engineer’s Obsession



Connor “Birdbath” Buott
- AERO A V -

On March 22nd, 1990, a Canadian aerospace engineer named Gerald Bull was shot several times in the head at point-blank range at the foot of his Brussels apartment.

As he lay dying in the street, his life’s dream died with him—that of a satellite-launching cannon rivaled only by that of Jules Verne’s imagination. This space-gun is a dream that Gerald Bull pursued aggressively, passionately, and recklessly.

Buckle up, because we’re about to trace Gerald’s dream back 300 years to the dawn of orbital mechanics, then forward through decades of innovation in mankind’s relentless quest to challenge the heavens with our firepower.

Though some poor political choices and a few grams of high-momentum lead may have ended Bull’s vision for cheap and fast space launches, modern ballistics may offer us a chance to renew and continue his ideas—ideas that have the potential to revolutionize the way we build, live, and explore in space.

The idea of a cannon powerful enough to launch objects into orbit is an old one. In his landmark 1687 treatise on “Mathematics of Natural Philosophy,” Isaac Newton laid out the laws of motion, of universal gravitation, and a derivation of Kepler’s laws of planetary motion.

This document, the foundation of classical mechanics and arguably the most important work in the history of science, contained the well-known thought experiment of Newton’s Cannonball.

By imagining a cannonball fired from

a mountaintop with increasing speed, assuming a constant center-seeking gravitational force, Newton proposed that the cannonball would eventually circle the planet and strike the cannon that fired it. Though it is impossible to place something truly in orbit simply through ballistics, Newton was definitely on to something.

Ground-launched cannons can easily get projectiles into the 200-600km altitude range—the realm of low-earth orbiting satellites like the ISS. From there, only a small boost from a rocket is required to turn the ballistic path into an orbit.

In fact, based on some rough calculations, more than 60% of the energy of a conventional launch is expended getting the payload to altitude, with only 40% being expended bringing the payload up to orbital velocity.

Some two centuries later, this knowledge inspired Jules Verne’s “From Earth to the Moon,” where the Baltimore Gun Club conceives and builds the “Columbiad” gun to shoot man to the moon. And later, some 300 years after Newton first proposed his thought experiment, a young Canadian aerospace engineer would endeavour to take this space-cannon from science fiction to reality.

Ten years before Gerald Bull was born, the German Empire had devised the mother of all long-range weapons: the Paris Gun. Entering service in the closing months of WW1, this single-stage cannon weighed 250 tons and was designed to shell Paris from 120km away.

Earning itself the dubious honor of being the first system to place objects in the stratosphere, the extreme range of the gun meant that the rotation of the earth had a significant effect on the trajectory, limiting its use to city-sized targets—and even then, only as a psychological weapon, as the force of firing limited the gun to relatively small and low-explosive shells.

Parisians initially assumed the shells were falling from high-altitude zeppelins, as no sound of cannon fire could be heard before their impact. Though all examples of the Paris Gun were destroyed by the retreating Germans at the end of WW1, it spawned a hundred

years of development in long-range artillery, in particular the V3 London Gun during WW2.

But before we get to that, let’s take a peek at Gerald’s childhood.

Born in 1928 in North Bay, Ontario, the son of a solicitor and a housewife, Gerald Bull’s family moved to Toronto in 1929 after the stock market crash, and spent most of his formative years in that city during the Great Recession. During summers, he would build balsawood gliders at his uncle’s country house.

When Bull was 11, WW2 broke out, and finished just as Bull was finishing high school. It’s not hard to imagine that he heard on the radio and saw photos of the thousands of V2 rockets that terrorized London towards the end of the war.

Perhaps he even heard of the successful Allied mission that destroyed the London Gun, a massive multi-staged, gas-fired gun designed to strike London from France, 165km away.

Finishing high school at 16, just before the end of WW2, Bull initially attended Queens to train as an officer, but was quickly recruited by the University of Toronto, where he convinced the Faculty of Engineering to let him into their brand new Aerophysics program. Accounts differ as to Gerald’s prowess—some professors described him as a middling student, while others praised his dedication and work ethic.

But as Bull graduated in 1948, he was well-known for his energy and bullish nature. After graduation, he was hired as a draftsman for AVRO Canada.

In the post-WW2 boom, the aerospace industry was kicking into high gear. German and Allied innovations during WW2 had brought both jet engines and rocket engines into the forefront and researchers, militaries, and industry alike were eager to capitalize on the potential of these new technologies.

The University of Toronto was one of the first in Canada to found an Institute of Aerodynamics, funded by the Defense Research Board (DRB), the predecessor to the DRDC. Bull was brought on to do his Master’s and PhD through this new aerodynamics program, where he specialized in hyper-

sonic wind tunnel design.

While working on his PhD, Bull was tapped by the DRB to aid them in testing the aerodynamics of the “Velvet Glove” missile, a supersonic air-to-air missile for the CF100 Canuck fighter.

This project was being run under “CADRE,” the Canadian Armament Research Development Establishment. While Bull initially intended to use his PhD research to build CADRE a supersonic wind tunnel, cost issues forced him to search for other options.

It was suggested (likely by a gunner familiar with artillery muzzle velocities) that a more cost-effective option might be to fire scale models from a cannon, and Bull did just that—using a modified QF117 anti-tank gun to improve the supersonic performance of the Velvet Glove missile.

After having his first brush with ballistics, Bull returned to U of T to earn his PhD at the age of 23, a record that stands today for the youngest doctorate in aerodynamics from U of T.

Bull was quickly re-hired by CADRE to continue work on supersonic and hypersonic missiles, and when limitations of gun-fired models forced him to re-



COLUMNS

GERALD BULL KNEW EXACTLY WHAT HE WAS DOING. JUST LOOK AT THAT SMIRK.

turn to wind tunnels, he build one over the summer of '55 at the University of Laval for \$6000 using scrap parts.

For comparison, a similar tunnel today could cost in the realm of several million.

While Gerald was duct-taping together a Mach 4 wind tunnel, Russia and the US were beginning a decades-long dick-rocket-measuring contest, with both countries publically announcing plans to have artificial satellites in space by the end of the decade.

During this time, Bull gained some public notoriety when the Toronto Telegraph ran an article about his work on the Velvet Glove project entitled "Canadian Gun 4550MPH Missiles." Then, when the Canadian government canned the program 6 months later, Bull was quoted as referring to Prime Minister Louis St. Laurent's Liberals as "second-rate lawyers and jumped-up real-estate salesmen."

With the space race being officially started by Sputnik 1 in 1957 and the cold war in full swing, Bull quickly found work using his gun-fired model testing to fix an aerodynamic instability in the Avro Arrow.

When the Arrow program was subsequently cancelled in 1959, Bull was described as "angry beyond reason." He made a public effort to harass Prime Minister John Diefenbaker (whose Conservatives were responsible for the termination of the Arrow program.)

After a few more years spent growing frustrated with red tape and government funding, in 1961, Bull was hired as a professor at the University of McGill. He joined the High Altitude Research Program (HARP) with the goal of using a 16-inch bore battleship gun to test hypersonic re-entry behavior of projectiles to aid the burgeoning rocket launch industry.

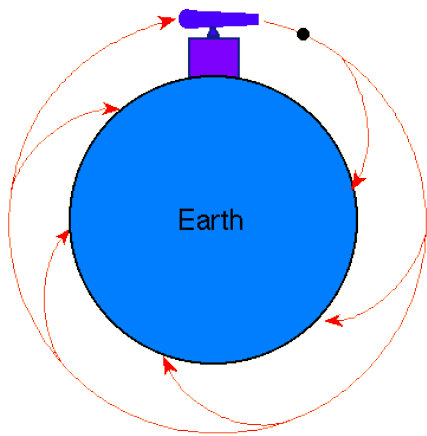
While HARP was setting up their 3000 m/s cannon in Paragon, Barbados, Canada was becoming the 3rd country to join the space race when it launched the Alouette 1 to orbit in 1962.

It was during this time in Barbados that Bull began to envisage and design a gun that could punt satellites outside of the atmosphere.

By 1964, Bull had designed a 3-stage, low-cost launch vehicle that could put a medium-sized Canadian satellite in orbit for a tenth of the cost of a rocket launch. These rocket-projectiles were named Martlet, in honor of McGill's school bird.

Though these cannon-fired rockets had several issues, including the solid rocket fuel bending and warping under the loads of launch, the Martlet holds the record today for the highest ballistically fired object at 180km.

However, less than 6 months before Neil Armstrong set foot on the moon, funding to the HARP program was



cut out from under Bull yet again. He worked desperately to convince the Canadian government of the value of his program, going so far as to propose that they unfurl the first Canadian flag in space as part of Canada's Centennial celebrations.

Finally giving up on the public sector, Gerald Bull started his own company, Space Research Corp.

Over the next 7 years, Space Research Corp and Gerald Bull earned considerable success upgrading howitzers and improving missile re-entry dynamics for the US and Canadian militaries. The Pentagon was so enamoured with him that they insisted he become a US Citizen, in order to be able to work on projects with higher security clearance levels.

As the mid-70s brought about the thawing of the Cold War, and with a lack of interest in space exploration (the Apollo missions were drawing fewer viewers than the average sitcom), Bull's company struggled for funds. They began to court international arms buyers, a strategy that saw Bull arrested in 1975, fined \$55,000, and jailed for 6 months for selling howitzer shells to South Africa (in violation of trade embargos brought about by SA's human rights violations during Apartheid.)

After his release from jail, Gerald Bull left Canada in permanence, first working for the Chinese government. Then, towards the mid-1980s, he was recruited by Saddam Hussein to design weaponry for Iraq.

Bull, ever focused on his dream of gun-launched satellites, quickly convinced Hussein and the Iraqi government that they could not be taken seriously as a true power without space-launch capability. And of course, his enormous gun was the fastest and cheapest way to develop that capability.

Thus, in 1988, Project Babylon was created: the most ambitions of Gerald Bull's guns, and the one that eventually brought about his downfall.

Project Babylon, veiled in secrecy, was designed with a 150m-long, 39" bore barrel capable of placing a 2000kg payload into orbit through the use of a

multi-stage rocket similar to his Martlet design at HARP.

Now, if this was all Gerald had done, he might have lived. Guns of this size suffer from the same weakness—they can neither be aimed nor moved (nor easily hidden), making them easy targets to destroy by bombers.

Both the Paris and London Guns were quickly bombed thanks to this vulnerability: the same vulnerability that left Saudi Arabia, Iran, and the US unconcerned about Bull's giant space gun. However, in parallel to his work on Project Babylon, Bull also worked to improve the re-entry aerodynamics and targeting of the Russian SCUD missiles being used by Iraq during the Iraq-Iran war, and later to attack Iran, Israel, and Saudi Arabia during the Gulf War.

Bull's improvements to the SCUD missiles were viewed as a clear and present risk to the countries at war with Iraq. Israel in particular, who, thanks to Bull's enhancements, was now within range of Iraq's SCUD launches.

So it comes as little surprise, in retrospect, that in March of 1990, Gerald Bull was killed quietly and efficiently as he reached for his keys, on that quiet evening in Brussels. While his murder bears all the hallmarks of an assassination, history is unclear as to the executors—perhaps Israel's Mossad security agency, perhaps the Iranian government, perhaps even the CIA.

In any case, with the defeat of Iraq during the Gulf War a year later, anything that remained of Gerald Bull's dream was destroyed when the Coalition forces bombed the Project Babylon facility and the UN confiscated any remaining pieces in 1991.

This brings us to the end of Gerald Bull's story—the story of a man with a singular vision, willing to take any risks in order to achieve his goals.

As engineers, we can learn much from his successes, and his failures. Perhaps it was hubris that drove him to design a cannon under the wing of a dictator hated by his own country... Perhaps he just didn't care.

While Gerald's story is over, however, the story of the space gun is not.

In the 25 years since Project Babylon, technology has progressed immensely. Solid-state electronics are now cheap, robust, and are used extensively in modern actively-guided artillery shells. The Excalibur M982, a common artillery round, has a 40km range and uses a satellite GPS connection to guide it during its ballistic flight.

Material sciences have likewise advanced, allowing for the use of new, high-temperature alloys, ceramics, and composites. This allows for higher firing speeds as the payloads punch hypersonically through the atmosphere.

The applications for a cheap quick-

launch system have dramatically expanded over the last decades, particularly thanks to the onset of micro-satellites and cube-sats. Even the firing systems have changed—electromagnetic rail guns are showing the potential to exceed the power of even the largest cannons, with ranges of over 300km, requiring only electricity to fire.

Using an earth-based ballistic launch system, small payloads ranging from cube-sats to fuel or supplies can be fired up into Low Earth Orbit (LEO.) Orbiting spacecraft refueling stations have been proposed; a Babylon-style system would be an ideal way to supply those refueling stations.

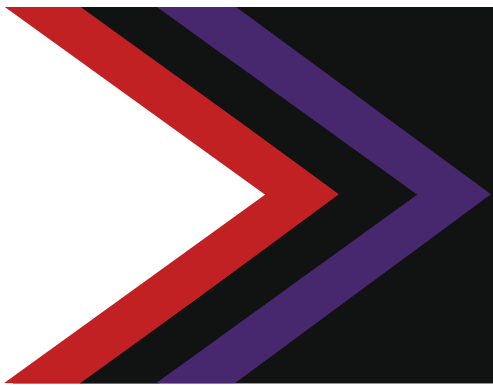
And as we move beyond our planet, the versatility, advantages, and practicality of a space gun become clearer. The movie "Moon" gave a great example of an application: resources mined on the Moon can be fired on a free-return trajectory back to earth, eliminating the need for rockets entirely.

Resources mined on asteroids could likewise be fired back to earth, avoiding the need for transport ships, and dramatically increasing our construction capabilities in space. Even Mars, with its thin atmosphere (less than 1% of the density of Earth's), could use a space gun on the surface to fire samples back home, or to waiting satellites in orbit.

With this in mind, it is highly likely that as companies like SpaceX, Blue Origin, and Boeing push towards high-frequency spaceflight, other rapid-launch systems like the space gun will be revisited.

An idea—conceived 300 years ago by Isaac Newton, immortalized in science fiction by Jules Verne, and made real by crazy, obsessed, dedicated engineers like Gerald Bull. He may not have been the ideal engineer, but he lost his life pursuing an idea he was convinced could work. Let's see if history and a few of us aspiring engineers can prove him right.





COLUMNS

AT LEAST SHE GOT A CALLSIGN OUT OF THE ORDEAL



by Marie “Ghost” Leunissen
- MECH II -

Puppy Didn’t Get Memo in Time for Homecoming

Iris “Pink Lady” Sanders came to the homecoming game drenched in a hot-shot pink. A series of tragic events led to utter embarrassment as she tried to walk to the engineers’ section in the stands.
Earlier that week, Iris was told that

this year, the engineers would switch things up from their traditional purple-dyeing to pink to raise awareness for breast cancer.
However, tragedy struck when she missed dyeing due to late class and wanted to participate.

STUDENT GROUP FUNDING

THIS YEAR, CSES IS ALLOCATING \$32,000 TO OUR AFFILIATED CLUBS, SOCIETIES, & PROJECTS





FUNDING FROM:
CARLETON STUDENT
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SGF Applications due Monday, October 10th before 5:30 PM!

“I rushed out this morning and got a pool and pink dye. I did so many rounds of dyeing, I think my hair might stay like this forever,” Iris explained.
“I only realised that breast cancer awareness month was next month when I walked into the fieldhouse.”
Not all was lost. Iris’s fluke inspired the engineering community to help out the breast cancer society, and will be running fur-raisers to help the cause.
Lucky Iris will be the mascot for the event. And given the amount of dye she used, she won’t be vibrant any time soon.



Jordan “Not So Slim Shady” Stumpf
- ELEC III -

People always say to learn from your mistakes. Instead, I suggest you learn from my mistakes. It’s a lot funnier, and you hopefully will save yourself from actually being able to write an entire column about all of them.
Now that you’ve experienced the first month of school here at Carleton in engineering, you might have noticed the motto “go big or go home” is exemplified everywhere. Whether it be our love for purple (and therefore the need to dye ourselves with a medical-grade dye), the love for beer (as we celebrate this love in social gatherings), or even our love for pranks, like the +800 rolls of toilet paper the Penguins stole from residence two years ago (or the almost completed prank of putting Allan’s car on top of the large pedestal for the Yellow Structure in the Quad.)
Just like the jobs we are training to do once we graduate, when we do

I Fucked Up - vol. 2 -

something, we do it big, we do it right, and we own whatever we do!
But the unfortunate nature of our beautiful plans here in university do not usually include the repercussions. While stealing all the toilet paper and storing it in their bathroom as a giant throne, the Penguins did not think ahead to the room inspection they were scheduled to have the next morning.
The same short-mindedness goes for the drunken partier who will have a wicked hangover, or the purple person who now has to scrub their butt-stained toilet seat. And although they thought it through as they were putting Allan’s car in place (then decided against it for safety reasons), the pranksters still managed to steal the car and build homemade ramps to get it up there.
But this does not conclude the common engineering student’s lack of forward thinking—no sirree!
FSK II is right around the corner—my favourite FSK, in my extremely humble opinion. For those of you who don’t know, FSK II is the Halloween

FSK, and therefore is most definitely a costume party. This is the perfect time to let our inner artsie out and let the creative juices flow. But with these amazing costumes come some that were amazing in theory, but not so great in the real world.
One of the most common things that is missed in the planning stage is how messy these costumes are going to be. We’ve all seen the absolute disaster the stairwells are after move-in day. Purple smeared everywhere! That’s from a dye that is supposed to be in our skin.
Now imagine the same scenario, but with fake blood all over your back. Thanks to Noah “Notes” Pacheco, the walls of my house last year looked like *Scream* had fun with the entirety of the partygoers.
Now, you ladies—or gents, I don’t judge—for the love of God, please, no feathers or glitter. That shit gets everywhere! And then there are those of us who completely do not consider anything when designing our costumes and simply go for it.

Remember my ABC outfit last year for the GNCTR Kegger?
Yes, you do! ;)
Last year, for FSK II, my housemates and I decided to be characters from Disney’s *Recess*. You all remember that show growing up, right? Well, I ended up getting stuck with Mikey. To perfect this costume, my housemates (with the help of some dancing lubricant) bleached my hair for what I thought would be my first and last time doing so.
Except when the bleach was washed out, we found that my hair had been fried and turned to straw from the bleach’s being left in too long. It was so destroyed that even full of conditioner, I could not run my hands through my hair. It looked and felt like I had Donald Trump’s hair 3D-printed and put on my head.
So, the decision was made to buzz it off. That was a worse mistake than letting my intoxicated roommates bleach my hair! When I came into school the next day, the callsign “Not So Slim Shady” was quickly assigned to me, and I will now forever bear that golden costume design flaw on my flightsuit.
Regardless of what costume you end up deciding to do for FSK II, or what shenanigans you get yourself into for the entirety of your career as a C-Eng student, remember to go big and own whatever you do! This is blond Jordan “Not So Slim Shady” Stumpf signing off. Stay classy C-Eng!

COLUMNS

WHADDAYA KNOW, ASKBAE IS BACK FOR ROUND TWO



Well, shit... AskBae slept through all of September, whoops.

Hello again C-Eng! After a long hibernation, Bae is back! If you need shitty advice on how to run your shell of a life and you want to Ask Bae, drop a wire to askbaeirontimes@gmail.com.

Already, questions are pouring in from you overachieving first years, and our first question this month comes from Francis First-year:

“ Dear Bae,

I am finding it difficult to be thankful for all of the amazing things I have gotten due to my first world privilege. My parents have told me they're going to get rid of my weekly allowance if I don't find a way to be thankful. What do I do, Bae?”

Well, Francis... October is the month to be thankful! Here are a few things you can do:



1. Show your thankfulness by taking one for the team and eating all the black wine gums. Nobody likes that shit.

2. Invite as many people as you can to a large Thanksgiving feast. Make sure to invite people that need to thank you for being

so modest and so humble for hosting such a glamorous event. Personally ask each and every one of them to thank you.

3. Remove all your clothing and lay out on a lawn for 24 hours (if you don't have a lawn, your neighbour's will work.) This way, you are closer to your true form and can truly discover what it means to be thankful.

4. Take a shot for Harambe. He took one for you. Be thankful, you little bitch.



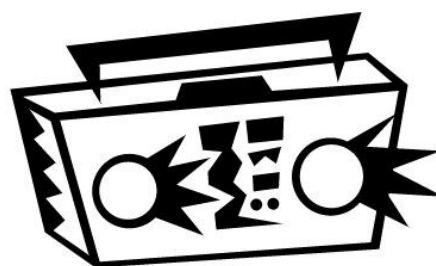
5. Praise Lahara! Praise, praise Lahara!

6. Make hand turkeys and give them to your friends and family. Everyone loves crafts.

7. Depending on what type of deity your parents are, they may prefer burnt offerings, or perhaps even live offerings! Either way, a sacrifice is a great way to show people that you care. Especially if there are goats involved.

8. Get a mixtape with only James Blunt's award-win-

ning song, “You're Beautiful” and carry a boom box around à la 90s to show your sensitive side, and how much you care about other humans.



If, after all of this, you still haven't been able to show that your entitled ass is thankful, Francis, I think you may have some bigger problems. Like a disgusting ego. Get that checked.

For people who aren't entitled twats like Francis, these helpful hints can make your Thanksgiving full of love and sacrifice. Go get 'em, tiger.

- Bae ♡



How to Deal With PESD

(Post EngFrosh Stress Disorder)

by Aldous Rice-Leech
- SOFT I -



1. Just breathe. Remember that you will never have to see Thomas twerk ever again.

2. Avoid members of the other teams at all cost. EngFrosh may be over, but the bitter rivalries you've formed will last throughout the next 4, or 5, or maybe 6 years.

3. Sign up to be a facilitator next year. It's called exposure therapy: The more times you do something, the less traumatic it becomes.

4. Remember: Scavenger hunt only ends when you do. Keep searching!

5. Above all, remember that OttawaU's restraining orders are temporary; there's always a second chance!



COLUMNS

YOU MEAN TO TELL ME THAT STEREOTYPES EXIST FOR A REASON?!



Kevan MacKay
- ENG PHYS III -

How the **BiG BANG** *My Life* Changed THEORY (Yes, the show.)

This is something I’ve never told anyone until now. The reason I haven’t up until this point is because, quite frankly, I’m slightly embarrassed by it. The single greatest influence in deciding the career path I chose was CBS’s The Big Bang Theory. I kid you not. That’s like taking dating advice from Two and a Half Men.

But it’s true, this show had more of an impact on what I’m doing with my life than basically everything, except maybe my parents. So before you start drawing conclusions too soon, I want to make it clear that I think the show is largely garbage.

Sorry if that’s 2edgy4you, but I’ve watched at least 7 full seasons of the show with my family and I am very comfortable stating that the show has very little in the way anything resembling substance.

The show’s biggest flaws consist of too many shoe-horned pop-culture references, a smart character

saying something the target audience isn’t likely to understand but knows they’re supposed to laugh at, and Jim Parsons having to carry the entire cast. It’s weak, it’s sloppy, and it’s the opposite of what it’s supposed to be: intelligent. But yet, somehow it convinced me to go into physics.

Mainstream media programs centered around the STEM fields are really hard to effectively pull off. You have lots of amazing sci-fi shows like Star Trek, Star Gate and Doctor Who, but those lack broad appeal and we instinctively label them as something exclusively for the nerds.

They set too high a barrier of entry for the standard TV viewer with

lots of high-tech jargon. Most of the time you’ll end up with soap-operas set in hospitals or the ridiculous “hacking” you see in cop shows. Those types of shows aren’t centered around the science though, because the mainstream audience doesn’t want that—they want straightforward entertainment (which is fine, don’t get me wrong.)

That’s why The Big Bang Theory evolved from four nerds and their attractive neighbour to generic relationship sitcom #43. We may love to circlejerk all our engineering jokes, but we only find them funny because we’re exposed to math and calculations on an everyday basis. It’s very hard to make a show that can cater to both the mainstream audience and a well-informed audience without making the content either too dumbed down or intimidatingly complex.

So we end up with series like The Big Bang Theory, a show that panders to so many different demographics that you wouldn’t have to change anything about the title or premise to make the porn parody.

And yes. I looked.

But that’s beside the point. How did this show that I (supposedly) hate affect one of the most important decisions in my life? Well, the answer to that question is why I wanted to write this article in the first place.

I wanted to write about the importance of portraying science, math, medicine, commerce, art, or WHATEVER in media. Because it’s the shows on TV today that are going to subconsciously affect how young kids view their future careers.

I can tell you just how true that is firsthand. I wanted to be a dentist since as long as I can remember. I just really, really liked all the cool tools they got to use. Who wouldn’t want to work with a chair that has a built-in sink?

Plus, it was a straightforward, easy answer to give adults when they asked you what you wanted to do when you grew up. It’s also the kind of job that makes people a lot of money, so I wasn’t likely to receive many condescending “oh, that’s nice” remarks from anyone.

But when I entered Grade 10, I realized that I didn’t want to spend the next 4 decades of my professional life cleaning people’s teeth. It isn’t my intention to disparage anyone who is, was, or wants to become a dentist, but the realization that I didn’t want anything to do with the profession was one of the biggest wake-ups I’ve experienced in my entire life. And that wake-up was caused by Sheldon Cooper patronizing his fellow post-docs about physics gibberish in the very fake cafeteria of the very real California

SHELDON QUOTES

I can't be impossible — I exist! I believe what you meant to say is — 'I give up, he's improbable'.

I don't need sleep, I need answers. I need to determine where, in this swamp of unbalanced formulas, squatteth the toad of truth.

My existence is a continuum, so I've been what I am at each point in the implied time period.

I'm quite aware of the way humans usually reproduce, which is messy, unsanitary and involves loud and unnecessary appeals to a deity.

You have to check your messages. The leaving of a message is one half of a social construct, which is completed by the checking of the message. If that contract breaks down, then all social contracts break down, and we descend into anarchy.

Interesting. Sex works even better than chocolate to modify behavior. I wonder if anyone else has stumbled onto this?

If outside is so good, why has mankind spent thousands of years trying to perfect inside?

They were threatened by my intelligence and too stupid to know that's why they hated me.

COLUMNS

THE MOST CANADIAN REVIEW OF '16 WOULD ALSO BE AN APPROPRIATE TITLE

Institute of Technology.

I was watching these characters talk about things I barely knew anything about: lasers, string theory, quantum mechanics—all terms I'd heard of but couldn't for the life of me explain. And I felt dumb. These nerds may be socially awkward, but at least they know how to do multi-variable calculus.

Me? I was just socially awkward. Spoiler: Not much progress in that department.

I hated the idea of not knowing about the things they talked about, so I went out and bought books. Science 1001. Science in 100 Key Breakthroughs. Quantum: A Guide for the Perplexed. The God Particle. I won't pretend like I understood those books then, and three years into my degree, I sometimes feel like I barely know more than I did back then.

But they were a start. Those books got me interested in science. They got me curious, asking questions I didn't think I'd ever be asking. So, in my last year of high school, I decided I wanted to enroll in engineering physics and I have not once regretted it. I adore physics.

Last semester, I had an optics textbook from 2007 that is now out of date because LIGO successfully proved the existence of gravitational waves. That is both extremely scary and exciting at the same time. I'm at the point where I get genuinely excited when I learn how to use a new button on my calculator. All because I didn't want to be just another Penny.



Now, as much as I and everybody like to jump on the hate bandwagon for the show, there had to have been something that kept me watching, even if just casually. And there are elements about the show

that deserve some genuine respect. The best examples are all the equations you see on the whiteboards in the background of the show, all of which are written by David Saltzberg, a professor of physics and astronomy at UCLA. There is a surprising number of clever science jokes hidden in the (always correct) formulas the show is filled with.

The other big one is the show's casting Mayim Bialek as neuroscientist Amy. You know, actual neuroscientist Mayim Bialek, Ph.D who got name dropped on the show as herself BEFORE going to star in it. Her inclusion was a much needed change to the show to make up for the less-than-ideal dumb blonde cliché the show built its success off of.

Even elements like Jim Parson's portrayal of the genius Sheldon is more accurate than you'd think. As ridiculous as his persona can be, it's not as far from the truth as you'd think. Sir Isaac Newton is one of the most well-respected and brilliant physicists to ever live. He was also a tremendous asshole who beefed with everyone from Leibniz to Sir Robert Hooke.

And for real, the episode with James Earle Jones guest-starring is one of the best sitcom episodes I've ever seen.

So, for as many grievances I have with the show, it still managed to be one of the most positive influences in my life, believe it or not. The influence that media has on kids is more powerful than you'd think. And hopefully the inclusion of more smart female characters in the show's later seasons was able to act as a positive influence for younger female viewers.

This article has been largely anecdotal, and maybe I'm putting too much weight in my personal experiences, but I felt it was worth sharing. So, whether it be Bill Nye, The Magic School Bus, or even a sitcom that should not have lasted as long as it has, don't underestimate the power of that show you use to babysit your kids.

The Great Poutine Review of '16



Noah Pacheco
- AERO D III -

Ladies and gentlemen and everyone in between, we have a crisis on our hands. There are four places one may acquire poutine on campus. For a person with incredibly bad indecisiveness, this is a catastrophe. So, over the past week I have made it by sole purpose to track down these prestigious poutine-producing places and finally find the one true champion... for the greater good of the people.

GOLDEN FRIES

Price: \$8.50
Quantity: Large
Notes: Gravy real good. Hint of chicken flavours? Cheese was nice and warm. Not too stringy. Soggy fries but freshly cut potatoes used. Not much line up/wait time?
Rating: 6.5/10



SMOKE'S POUTINERIE

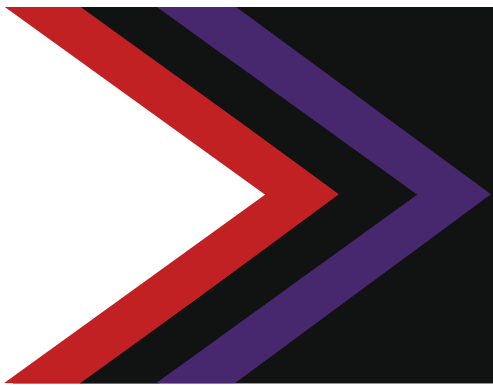
Price: \$6.99
Quantity: Large
Notes: Reaaaaally fucking hot. Ow. Uneven curd to fry distribution. Fries are okay. Gravy is good. Curds are good but not too warm or cheesy. LONG-ASS LINES.
Rating: 5/10

OLIVER'S

Price: \$5.50
Quantity: Medium
Notes: Soft baked fries. Wow. Really good quality potatoes used. Fresh cheese curds used. Subtle, not too overpowering. Chicken gravy similar to Golden Fries. Blends really well with the baked fries. Could use a little more, though. Lot of fries untouched by neither cheese nor gravy. Not too bad of a wait for a sit down.
Rating: 7.5/10

FRESH FOOD COMPANY

Price: \$13.94 (Dinner)
Quantity: Unlimited (Buffet)
Notes: Must request for it. Not real cheese curds (mozzarella from pizza.) Gravy is okay. Fries are bleh. Wait time is bad. Honestly, not worth going to res caf just for poutine.
Rating: 2.5/10



GALLERY

ENGFROSH 2016: AFFECTIONATELY KNOWN AS DABFROSH





11



COLUMNS

CAN CONFIRM, FSK II IS BEST FSK



Andre “Blackout” Lawrence
- AERO B II -

Picking Out the Perfect Halloween Costume



October has arrived, and if you’re a first year, you have just experienced your very first FSK.

But that was in the past. Forget that ever happened, because you have yet to experience your very first second FSK!!

I am almost certain that I can speak for everybody when I say that, unlike most movie sequels, the second FSK is waaaay better than the first. Oh, and did I forget to mention that it’s a costume party? Damn straight, it is!! It’s HALLOWEEN!

Costumes, parties, drinking responsibly, more costumes, more responsible drinking, and don’t forget the costumes. If it hasn’t been made clear yet, costumes are by far the largest part of FSK II and Halloween in general.

Seconded, of course, only by responsible drinking.

So, to help those of you who are hopelessly confused when it comes to putting costumes together, here is a list of 10 tips that will help you pick out the perfect Halloween costume.



TIP 1:

Find your Halloween spirit animal. Finding a creature or character that resonates with your “inner wavelength” will make your Halloween and FSK experience one to remember. It also makes it easier to play the part and stay in character.

TIP 2:

Money IS an object, so don’t waste it. Buying an expensive costume always seems like a good idea in the moment, but expensive, paid-for costumes are almost never multi-purpose and are a b**ch to modify.

You’ll buy it, wear it once, and wish you’d spent the money on something more useful. Which brings me to my next tip...

TIP 3:

Be creative. Don’t be afraid to make your own costume. Making your own costume gives you full artistic freedom. You get to make the costume that works for you and makes you look the best.

Making your costume is very cost-effective and homemade costumes are easier to modify from year to year, or party to party.

Take me for example. I went to FSK II as “The Chocolate Angel” [pictured left], my wings broke, and I transformed into “The Nutella God” [pictured right] on Halloween day.

Which brings me to my NEXT tip...

TIP 4:

NO FEATHERS! They get everywhere, break off super easy, and piss off the Flightsuit Committee who has to graciously deal with your feathery mess.

If you ever want to attend another FSK again, take this tip seriously...

TRUST ME, I know.

TIP 5:

Puns are fun. Going for punny costumes is an all-time classic. They are almost always cost-effective and are a great way to make people laugh and/or cringe.

TIP 6:

Group costumes are the bomb! Dressing up and coordinating with a group of your friends is a perfect way to feed off of each other’s energy throughout the night.

Whether you choose to be Jesus and his 12 apostles, or the Powerpuff Girls, group costumes are always a good choice.

TIP 7:

Simplicity is best. If you’re going to make or buy a costume, make sure that it isn’t high maintenance. The last thing you want to be doing is spending the entire night fixing your costume instead of having a good time.

TIP 8:

Makeup is a must. Whether it’s gory fake blood, lipstick and blush, or gold paint, using make up (and not just on your face) adds an element of flare to your costume.

But if you do use make up, especially paint, be sure to give yourself a thorough cleaning before bedtime, no matter how “disoriented” you might be. You know... from eating all that candy.

TIP 9:

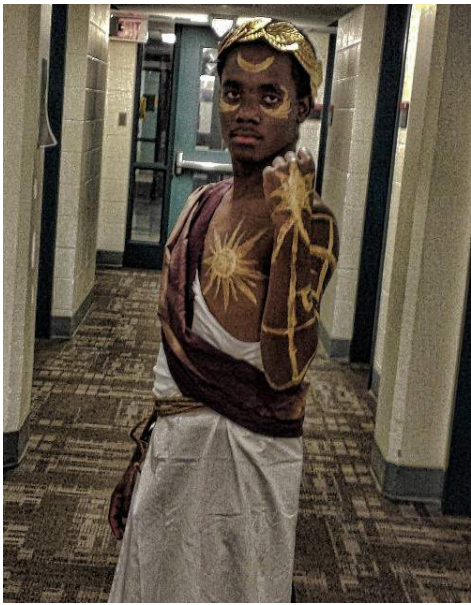
Props, props, props! Props give their accompanying costumes a hell of a lot more character. When trying to decide on what props to use with your costume, it is always a good idea to make the cup that you use for the night (to hold your water) match your costume.

If you’re a Viking, bring a giant wooden mug. If you’re a Greek god, a golden chalice. You get the picture.

TIP 10:

Make sure your costume is appropriate for the weather. Or at least make that it can be modified to fit the weather conditions. If there is one thing that you take away from this list please let it be this tip. October is NOT a warm month. Believe me when I tell you that walking back to Carleton wearing a ballerina top, gym shorts, a bed sheet for a skirt and flip flops is NOT PLEASANT (photo left).

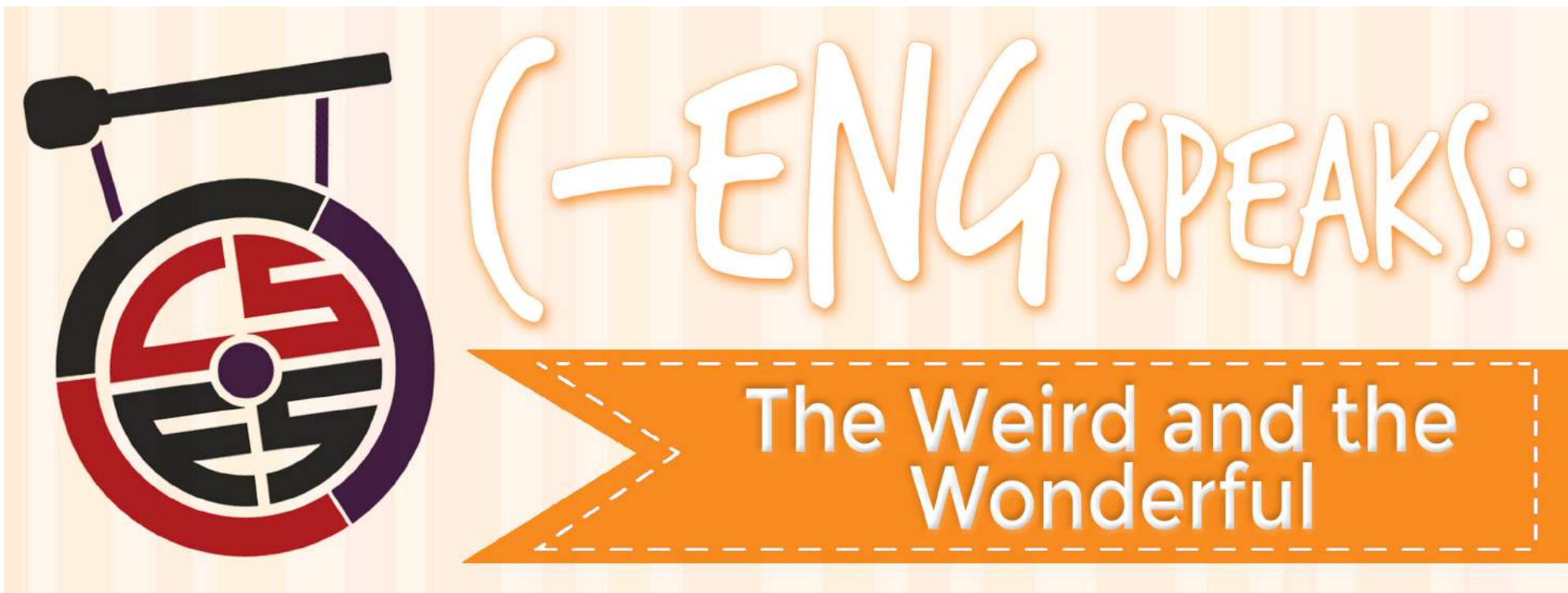
Take the time this year to find that perfect Halloween costume. Using these 10 tips will make standing out of the crowd 10 times easier, and if you take what I said to heart, it should ensure that your night goes off without a hitch. This year I’m going to take my own advice and modify my pre-existing costume. That’s right, “The Nutella God” is coming back, bigger, better and BRIGHTER than ever with a whole lot more Holy Hazelnut goodness to share. ;) Happy Halloween everyone! Please remember to drink responsibly.



COLUMNS



THE KETCHUP PRANK: VERY DIFFERENT RESULTS FOR GUYS VS. GIRLS



“What is the best prank you have ever pulled?”

Put Nicholas Cage’s face over my brother’s face in every framed picture in my parents’ house.



Rebecca Feddema
ACSE IV

Placed take-out ketchup packets along the edge of an inner toilet seat.



Noah Pacheco
AERO D III



Jonah Proulx
SOFT I

Well, this wasn’t exactly pulled by me, but last year at my high school for the famous end of the year “Grade 12 Prank”, a couple of my classmates decided to makeshift a slip-n-slide in the middle of the school hallway. Needless to say, our principal wasn’t very impressed! It was still rather funny, nonetheless!

“Describe something that happened to you for which you had no explanation.”

In my first year during the Fall Reading Week, I was almost by myself on the floor (you can imagine how scary this was because I lived in Glen.) I left my room to go throw something in the garbage chute, leaving the room door wide open so I didn’t have to take my keys with me. I got back and the door was closed with my door locked. This was like 2am, my roommate wasn’t there and I didn’t know anybody on my floor because, you know, we engineering kids hang out with other engineering kids (bad decision.) Both my res fellows were off campus, so I had no idea how this happened. Worst experience of my life; those dark Glengarry halls still haunt me in my dreams. The elevators weren’t working (big surprise) so I had to go down the stairs to get my door opened after. I still don’t know what happened. My opinion is that it was the spirit of some person that got killed in there.

Every pillow case in my parents’ house went missing for over a week.



Daniel Zachrisson
SREE A II





COLUMNS

AN ENTIRE CAKE FOR \$3, THOUGH

ADULTING *for Dummies*



Julia “Teabag” Psihramis
- ACSE IV -

GROCERIES

Congratulations, C-Eng, you’ve made it through your first month of school! Meanwhile, I’ve spent another month in co-op land where I pretend to have my life together while listening to my coworkers talk about back-yard patios and dinner parties. (Did you know that this is a great time of year to plant trees and shrubs?)

Last month, I discussed the ever-present issue of laundry, but by now you’re probably more concerned with the fact that you’ve noticed repeat meals in the residence dining hall or you’ve started to run low on all those Costco cans of soup your parents left you at the beginning of the year. Whatever your reason may be, you might soon find yourself raiding your local grocery store for food and this is the perfect time to talk about your next step towards becoming an adult.

From my extensive research in the realm of adulthood, I’ve found one common theme when adults talk about groceries: health. Adults love trying to find the newest healthy food or diet.

Sometimes they’ll discover this strange new vegetable that’s supposed to be full of antioxidants or vitamins. Other times they’ll decide they won’t eat anything processed or they’ll switch to being wheat-free.

That’s right guys, being a real adult means saying goodbye to grocery trips that consist of popcorn, chips, ice

cream, chocolate, ramen noodles and Kraft dinner.

Now you’re expected to buy things like eggplant and butternut squash instead, because being an adult means having a strange obsession with odd vegetables.

Forget white bread! As an adult, you’ll be expected to eat whole wheat, or gluten-free, or even that weird bread with all the seeds in it.

And don’t even get me started on pasta. Eating pasta is pretty much a daily occurrence for me but the realm of adulthood frowns upon eating such a carb-rich meal more than twice a week.

In a nutshell, if you want to eat like an adult, you’ll be expected to buy all that expensive produce that’s way harder to cook than the majority of university students are capable of (myself included.)

Like seriously, what university student knows the proper way to cook artichoke? And don’t forget that these fancy vegetables are all way more expensive than those frozen chicken nuggets you would normally be buying.

Not only that, but as an adult, it’s expected of you to walk right past the 50%-off baked goods without buying one! I’m sorry, but if being an adult means passing up the opportunity to buy an entire cake for \$3, I don’t think I’m ready to be an adult yet.

I mean, is life without dessert even worth living? And who among us can resist a good sale, especially when it’s for something as important as food?

So, since none of us are real adults yet, let me take this opportunity to make a suggestion for all of your grocery shopping trips this year. Sure, being healthy is important, but I’ll be the first person to admit that as soon as midterms start, my motivation to eat healthy goes right out the window.

At the same time, a diet of exclusively Kraft Dinner and ramen leaves something to be desired. That’s why

I’m suggesting that, as students, we should try to eat one adult meal per day, or at the very least, one per week.

That means real, fresh vegetables (not frozen ones you cheater!), a meat or meat alternative (for those vegetar-

ians out there) and something a little healthier than pasta to go with it.

Then, of course, finish it off with a big helping of your favourite ridiculous desert. After all, we can’t be expected to be too responsible just yet.

15 HEALTHY EATING HABITS THAT WORK

1. Eat foods you enjoy.

As studies continue to suggest, coming up with an eating regimen you can stick with is critical; if you cut out all the foods you like, you probably won't stick to your plan.

2. Portion sizes are key.

There's a psychological component to eating, so being conscious of losing weight and sticking to the right portion sizes is half the battle.

3. Pack your lunch.

One way to keep your daily caloric intake in check is to take control of your portion sizes by packing a lunch.

4. Pick foods with protein and fiber.

In a review of weight-loss studies, psychologists made the case to include high-protein and high-fiber foods in weight-loss plans because of the benefits of feeling full.

5. Go Mediterranean.

Studies have shown that a Mediterranean diet packed with veggies, olive oil, and fewer processed foods may help your heart and your brain.

6. Get calories from food, not liquids.

In a study of obese women, researchers found that swapping out sweetened drinks for water was linked with weight loss, independent from diet and exercise.

7. Be flexible.

Having options for what you can eat can make it easier to build that in to your life, as opposed to a diet that sticks to the same five meals every week.

8. Go with your gut...bacteria.

Researchers came up with a mathematical formula to help find the right eating plan for each person based on the microbes that live in a person's stomach.

9. Drink water before your meal.

People in a small study who drank at least 16 ounces of water 30 minutes before a meal lost 2.7 pounds more than those who did not.

10. Grocery shop when you're full.

Hungry shoppers are more likely to buy junk food than full shoppers.

11. Get a good night's sleep.

Our bodies tend to crave high-calorie food when we're tired, scientists have found — presumably because we need energy (or sleep).

12. Eat breakfast.

Evidence suggests that an early meal kick-starts your metabolism, the process that breaks down the food you eat into energy.

13. Don't snack after dinner.

One study found that young men ate on average 238 fewer calories when they made dinner their last meal of the day.

14. Avoid diet drinks.

Switching to diet drinks is a way to quickly cut calories, but one long-term study showed that it could actually lead to weight gain in the long run.

15. Don't go hungry.

A landmark study found that young men who went consistently hungry for 24 weeks ended up obsessing over food, and some even lost touch with reality.

REPORTS

ENGINEERING IN THE REAL WORLD: IT'S NOT ECOR 1010

Carleton Engineering Student Builds Schools for a Sustainable Future in Nicaragua

Parker Armstrong, an engineering student at Carleton University, traded classes for concrete this summer as he travelled to Nicaragua to complete an internship with the NGO SchoolBOX.

Parker worked alongside SchoolBOX's construction crew to build three classrooms in impoverished Nicaraguan communities, and to evaluate the sustainability of the organization's building programs.

Parker first became involved with SchoolBOX as a high school student from North Gower, Ontario, and became motivated to contribute to SchoolBOX's mission of "Making Education Possible" in even bigger ways.

Through his engineering internship this summer, he produced a report on the social, economic, and environmental sustainability of SchoolBOX's programs, specifically their Tools 4 Schools program, which has constructed 80 classrooms in Nicaragua to date.

Parker's findings were that "SchoolBOX's social, economic and environmentally conscious building process [is] meeting its goals towards encouraging sustainability within the communities it is working in, along with the organization itself."

Parker credits his studies in Ar-



chitectural Conservation and Sustainability Engineering at Carleton University for providing him with important technical expertise, which he put into practice in Nicaragua, where only 56% of children graduate primary school according to UNICEF.

Parker designed the plans for a new bathroom built at the Mirna Martinez School, in the Valle de Las Americas, Nicaragua, that would conserve building materials, but provide spacious and clean facilities for the children and teachers to use.

He stressed the importance of having a humble attitude and working alongside communities to empower them and give them hope.

"A lot of times, communities feel they can never break out of poverty, but I hope the work that SchoolBOX is doing helps them to know they can have a better future".

Sarah Kerr, SchoolBOX's Executive Director, expressed her gratitude for Parker's contribution to the organization.

"His research, which intersects both engineering and development perspectives, is helping us to better achieve our mission. His work is already having a real-world impact in Nicaragua."

Parker is also partnering with a group of friends and members of the North Gower and Stittsville

area community to raise funds for SchoolBOX. The money they have raised so far will go towards the construction of another new bathroom using Parker's design.

Their larger goal is to raise enough money to build an entire classroom with SchoolBOX.

Parker and his friends are hosting a 'Paint Night' fundraiser for SchoolBOX in Ottawa this November. To learn more about this and other fundraising events, check the SchoolBOX Facebook page or visit the website at www.schoolbox.ca/events.



ABOUT SCHOOLBOX:

SchoolBOX is committed to 'Making Education Possible' for the children of Nicaragua. SchoolBOX implements cost effective programming by building schools, providing school supplies, libraries, and teacher training.

SchoolBOX has built 80 classrooms, and 46 washrooms in Nicaragua and serves over 17,487 students and teachers in 96 communities on an annual basis. Our community is united in love for the children we serve and the belief that education can defeat poverty.

SchoolBOX is comprised of thousands of people from different faiths and socioeconomic backgrounds. We empower educators and students, and they in turn empower their communities and change our world.

CONTACT:


Stephanie Rudyk Toepfer
Marketing & Community Outreach Manager
SchoolBOX Inc.
stephanie@schoolbox.ca
613-200-9777





CARLETON STUDENT
ENGINEERING SOCIETY
EVENTS CALENDAR

 Alexander's Office
3390 Mackenzie

 Open Monday-Friday
8:30 AM - 5:30 PM

 613-520-3616

 Open Fall & Winter
Academic Terms

OCTOBER



2016

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
26	27	28	29	30 FALL TEXTBOOK TRADE ENDS!	1 Panda Game	2
3	4 Engineering Jacket Fitting	5 Trivia Night @ Ollies	6	7	8	9
10 THANKSGIVING	11	12 CSES Fall General Meeting	13	14	15 EngFrosh Reunion	16
17 Yuk Yuks	18	19	#	21	22	23
24 Fall Reading Week (NO CLASS!)	25	26	27	28	29	30
31 Movember Shave-Off	1	2	3	4 Professional Engineers Ontario Student Conference Whirlwind Semi-Formal	5	6



CARLETON STUDENT ENGINEERING SOCIETY

3390 MACKENZIE BUILDING



/myCSES



@myCSES



@myCSES



myCSES.ca

WHAT IS CSES?

THE CARLETON STUDENT ENGINEERING SOCIETY HAS BEEN SERVING THE STUDENTS OF CARLETON ENGINEERING FOR MORE THAN **35** YEARS.

ITS GOAL IS TO PROVIDE ITS MEMBERS WITH ACADEMIC, PROFESSIONAL, AND SOCIAL RESOURCES TO HELP THEM MAKE THE MOST OF THEIR FOUR (OR MORE) YEARS AT CARLETON. IF YOU'RE AN UNDERGRADUATE STUDENT ENROLLED IN A STREAM OF ENGINEERING, YOU'RE A MEMBER OF CSES.



President
Julia Dalphy

Wow, what a crazy month September was! Hope everyone is now settling into their routine and has gotten a chance to visit CSES! This month, we look forward to seeing you at our Fall General Meeting, and will be continuing working together to make your C-Eng experience the best it can be! Also, Council has been working hard on CSES's Strategic Plan document, which we intend to prep over the course of the year and gain member feedback on at GMs. Stay tuned, and stay purple, C-Eng!



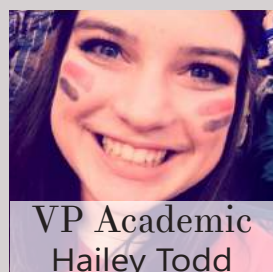
VP Finance
Cylina El-Bouchi

In my position as CSES VP Finance, I'm most looking forward to the SGF Applicants meetings and allocating funding for the month of October! I can't wait to give back to our members by funding student groups and projects that make their time in the C-Eng community so memorable!



VP Internal
Cameron Wong

Hey C-Eng, I hope you all had an awesome start to this school year! We are in the midst of election period, which leads up to the Fall General Meeting! I encourage you all to come out and see what's new with the CSES community, and get some free pizza!



VP Academic
Hailey Todd

This October we will be running our Carleton Engineering Competition! This will run on the first and third weekends of October—hope to see you competing or volunteering!

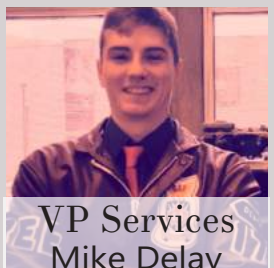
VP Publications
Update:

Hey everyone! Hope you're enjoying the FREE agenda and passports that we've been giving out all month! Now that school is in the swing of things, look out for the Iron Times every month, and for our Media Team taking flight! Also, hopefully everyone is following our social media by now to never miss a beat! (Bonus: hopefully by our next issue we will have a NEW VP Pubs, and you won't have to hear from Julia twice!)



VP Social
Céleste Lalande

Hi everyone! Hope you've all recovered from the Panda Game because October is just getting started! This month, as usual, we have an overflow of fun social events to come. Your favourite events such as Trivia and Yuk Yuks are back and better then ever! Last but not least, keep your eyes open for EngFrosh Reunion tickets where you could cheer on the Ottawa 67s in the presence of all your old teammates. If you have any questions about events, you can most likely find me roaming the halls of Mackenzie or sitting in the CSES Office. Talk to you later C-Eng!



VP Services
Mike Delay

Hey C-Eng! Over the past month, we have opened our office and begun running all our services! I hope you have checked out the Textbook Trade to get rid of your old textbooks and to find used textbooks for your courses. Coming in October, be sure to look out for the C-Eng sweater orders, including custom sweaters with name bars and a new look for breast cancer awareness! We will also be selling C-Eng hats starting in October.



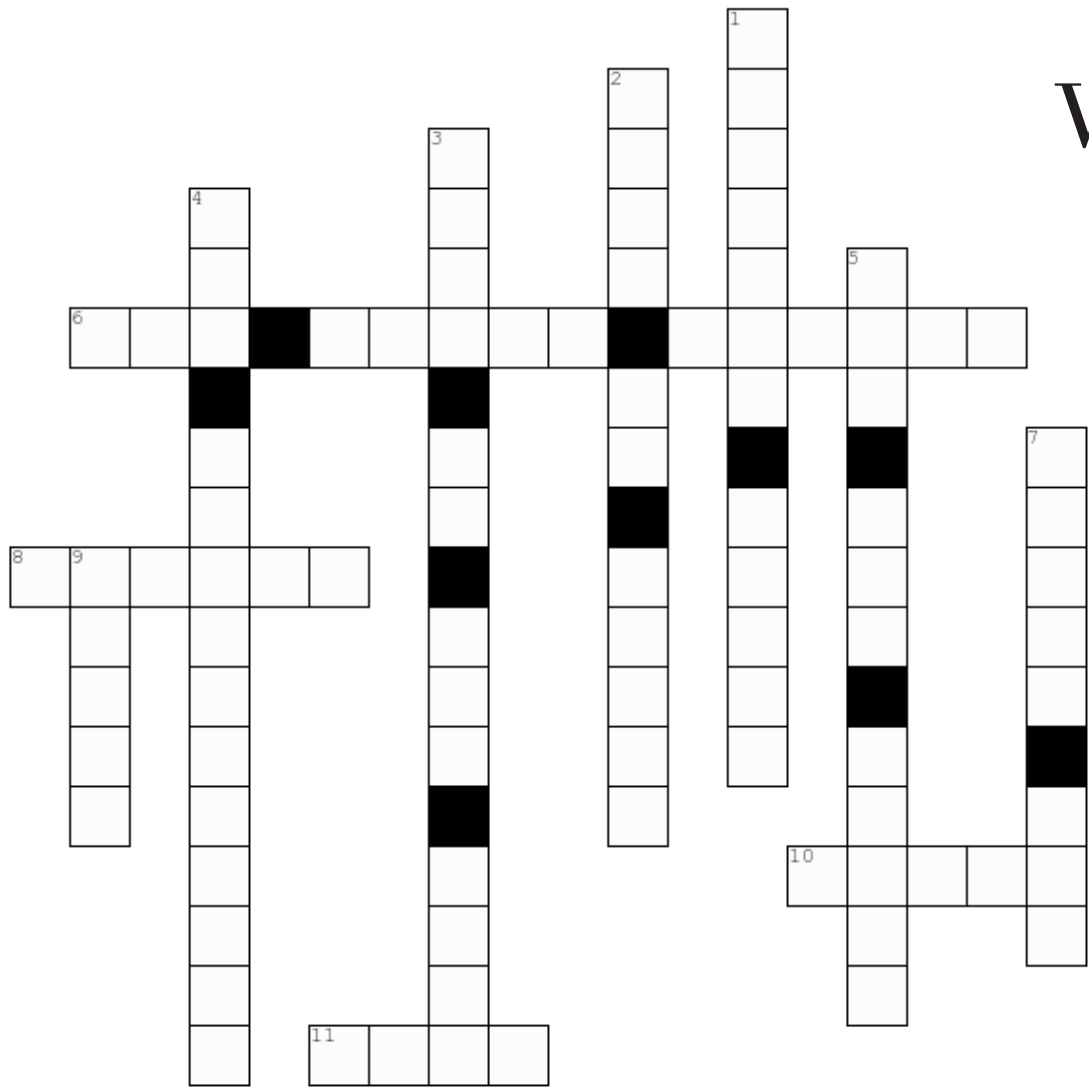
VP External
Yannick Brisebois

Hey guys!! Hope you had a great first month here at Carleton! October is going to be even better! Look out for conference applications opening up for TWO conferences happening in November. You can pick up an application form in the CSES office or apply online. Also looking forward to having our first ever C-Eng Breast Cancer Fundraiser, so watch out for more news and info soon! Have a good one C-Eng!!

DON'T BE A STRANGER! ANYONE INVOLVED IN CSES WOULD BE HAPPY TO TALK TO YOU ABOUT ANYTHING FROM DIRECTORSHIPS AND EVENT PLANNING TO VOLUNTEERING AT LEO'S LOUNGE, OR JUST SHOWING UP TO EVENTS. IT ALL PLAYS AN IMPORTANT ROLE IN MAKING ENGINEERING YOUR FAMILY AWAY FROM HOME. REMEMBER... EVERYTHING COUNTS FOR FLIGHTSUIT STAMPS.

DISTRACTIONS

THE TRUE TEST OF YOUR TIME IN CARLETON ENGINEERING



What's My Callsign?

ACROSS:

- 6. The most begrudged callsign of EngFrosh 2016
- 8. Introducing Apple's own sex toy!
- 10. Anointment with the holy beverage
- 11. Slam poetry double-entendre

DOWN:

- 1. Shit. Shit EVERYWHERE.
- 2. Taking flight over the staircase in res comm
- 3. Playing with fire in Leo's Lounge
- 4. "You saw NOTHING!"
- 5. Three shots of sweet, sweet acid
- 7. Candy, syrup, weiners
- 9. When lost and hungry, eat a spider

HORRORSCOPES

ARIES

ACTING RASHLY IS FINE AND DANDY UNTIL YOU'RE THE ONE WHO FALLS THROUGH THE FLOOR AND BREAKS THEIR LEG.

TAURUS

YOU MAY FINALLY FIND YOURSELF ABLE TO AFFORD THAT STAKE YOU'VE LONG BEEN CRAVING THIS MONTH.

GEMINI

A FAMILIAR FRIEND MAY SHOW UP UN-ANNOUNCED... DAMN, JUST WHEN YOU THOUGHT YOU'D SWORN OFF WITCHCRAFT FOR GOOD, TOO.

CANCER

YOU ENTER INTO A WORKING RELATIONSHIP WITH YOUR INNER DEMONS. THIS MAKES IT SIGNIFICANTLY EASIER TO SUPPRESS YOUR INEXPLICABLE BLOODLUST.

LEO

IF YOU CAN'T CONTENT YOURSELF WITH NOT BEING THE CENTRE OF ATTENTION THIS MONTH, YOU'RE JUST ASKING TO BE CHOSEN AS THE HUMAN SACRIFICE.

VIRGO

A MYSTERIOUS SERIES OF EVENTS LEAD YOU TO BELIEVE YOU MAY HAVE JUST UNWITTINGLY CONFIRMED THE EXISTENCE OF THE ILLUMINATI.

LIBRA

YOU'RE BLISSFULLY UNAWARE OF THE EFFECT YOUR PRESENCE HAS ON THE UNDERWORLD...

SCORPIO

GRAVE-DIGGING IS NEVER AS GOOD AN IDEA AS IT MAY SOUND INITIALLY. DO YOU WANT TO BE RESPONSIBLE FOR CAUSING THE ZOMBIE APOCALYPSE?

SAGITTARIUS

DON'T LET YOUR CURIOSITY GET THE BETTER OF YOU THIS MONTH. RELIGIOUS FANATICS DO NOT MAKE GOOD ENEMIES.

CAPRICORN

AT LEAST THE SKELETONS IN YOUR CLOSET AREN'T ACTUAL SKELETONS... YET.

AQUARIUS

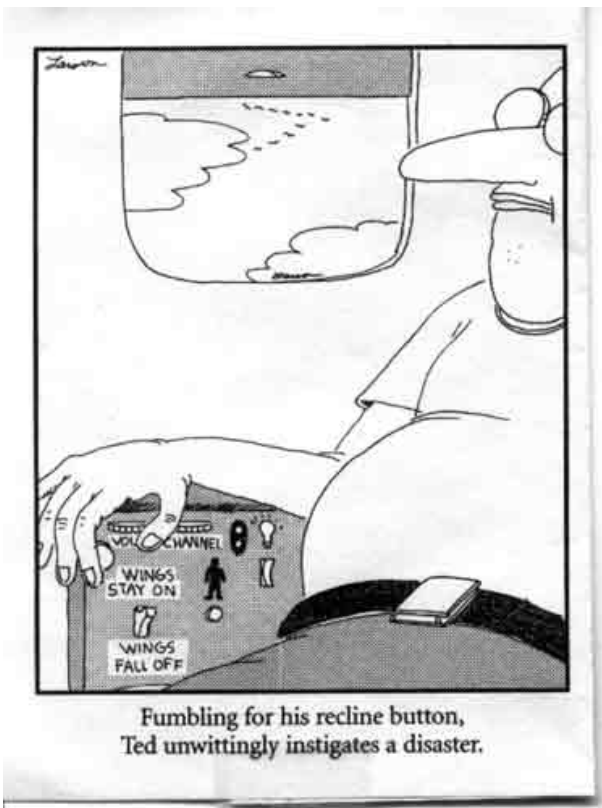
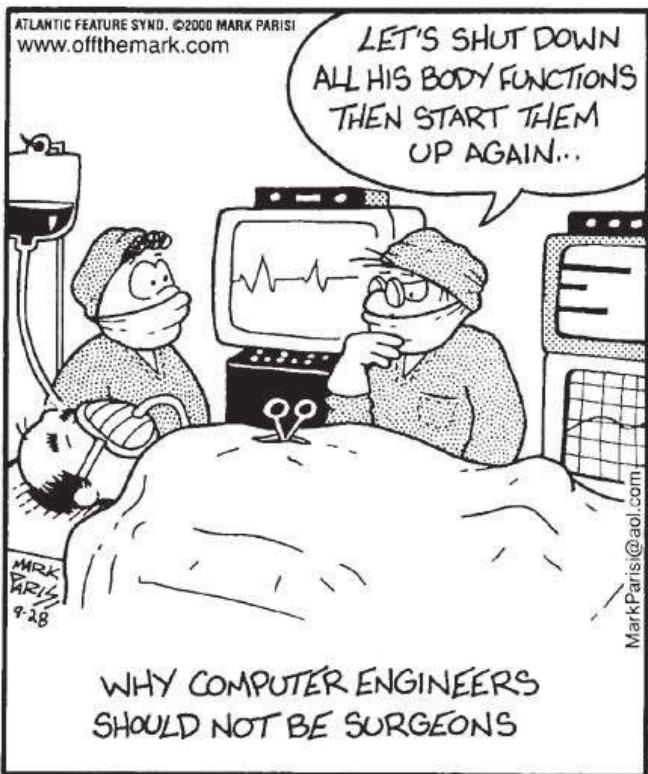
NARROWLY EVADE CONJURING LUCIFER HIMSELF BY STAYING THE FUCK AWAY FROM SATANIC RITUALS THIS MONTH. THEY'RE NOT MAKING THIS SHIT UP.

PISCES

YOU MAKE A NEW FRIEND THIS MONTH! TOO BAD YOU'RE ALONE IN BEING ABLE TO SEE DEAD PEOPLE...

DISTRACTIONS

I'M THE WORST THING TO HAPPEN TO THIS PAGE. SOMEONE USURP ME ALREADY.



GOOGLE RESULTS FOR "<x> GIRLS <y> CUPS"

	0	1	2	3	4	5	6	7
CUPS	0	1	2	3	4	5	6	7
GIRLS	0	3	375	9	0	0	0	0
1	7	7503	2007	10	5	3	6	2
2	9	29,05	247	7	14	13	2	1
3	7	6335	394	34	3	2	6	0
4	3	3513	34	0	63	0	0	0
5	1	9	5	3	0	0	3	0
6	3	1461	1	1	1	0	0	0
7	2	19	4	2	0	0	0	0

TEMPERATURE

60°C	EARTH'S HOTTEST
45°C	DUBAI HEAT WAVE
40°C	SOUTHERN US HEAT WAVE
35°C	NORTHERN US HEAT WAVE
30°C	BEACH WEATHER
25°C	WARM ROOM
20°C	ROOM TEMPERATURE
10°C	JACKET WEATHER
0°C	SNOW!
-5°C	COLD DAY (BOSTON)
-10°C	COLD DAY (MOSCOW)
-20°C	FUCKFUCKFUCKCOLD
-30°C	FUUUUUUUUUCK!
-40°C	SPT GOES "CLUNK"

GUIDE TO CONVERTING TO METRIC

THE KEY TO CONVERTING TO METRIC IS ESTABLISHING NEW REFERENCE POINTS. WHEN YOU HEAR "26°C," INSTEAD OF THINKING "THAT'S 79°F" YOU SHOULD THINK, "THAT'S WARMER THAN A HOUSE BUT COOL FOR SWIMMING." HERE ARE SOME HELPFUL TABLES OF REFERENCE POINTS:

LENGTH

1 cm	WIDTH OF MICROSD CARD
3 cm	LENGTH OF SD CARD
12 cm	CD DIAMETER
14 cm	PENIS
15 cm	BIC PEN
80 cm	DOORWAY WIDTH
1 m	LIGHTSABER BLADE
170 cm	SUMMER GLAU
200 cm	DARTH VADER
2.5m	CEILING
5m	CAR-LENGTH
16m 4m	HUMAN TOWER OF SERENITY CREW

SPEED

kph	m/s	
5	1.5	WALKING
13	3.5	JOGGING
25	7	SPRINTING
35	10	FASTEST HUMAN
45	13	HOUSECAT
55	15	RABBIT
75	20	RAPTOR
100	25	SLOW HIGHWAY
110	30	INTERSTATE (65 MPH)
120	35	SPEED YOU ACTUALLY GO WHEN IT SAYS "65"
140	40	RAPTOR ON HOVERBOARD

VOLUME

3mL	BLOOD IN A FIELD MOUSE
5mL	TEASPOON
30 mL	NASAL PASSAGES
40 mL	SHOT GLASS
350 mL	SODA CAN
500 mL	WATER BOTTLE
3 L	TWO-LITER BOTTLE
5 L	BLOOD IN HUMAN MALE
30 L	MILK CRATE
55 L	SUMMER GLAU
65 L	DENNIS KUCINICH
75 L	RON PAUL
200 L	FRIDGE

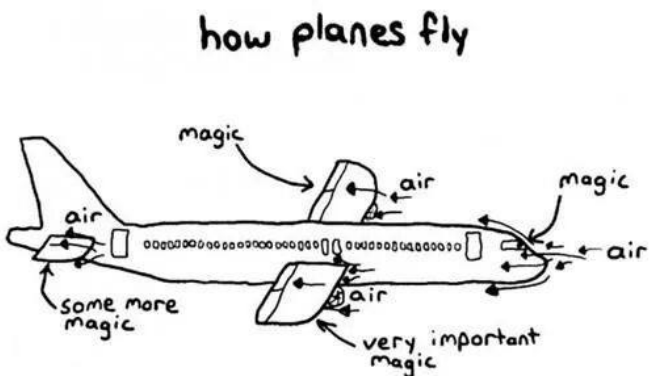
SO, WHEN IT'S BLOCKED, THE MUCUS IN YOUR NOSE COULD ABOUT FILL A SHOT GLASS.

RELATED: I'VE INVENTED THE WORST MIXED DRINK EVER.

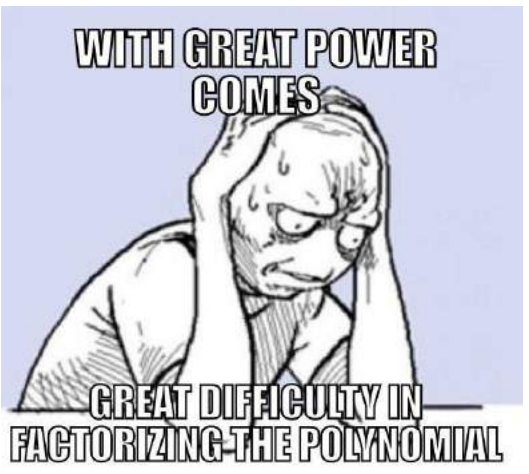
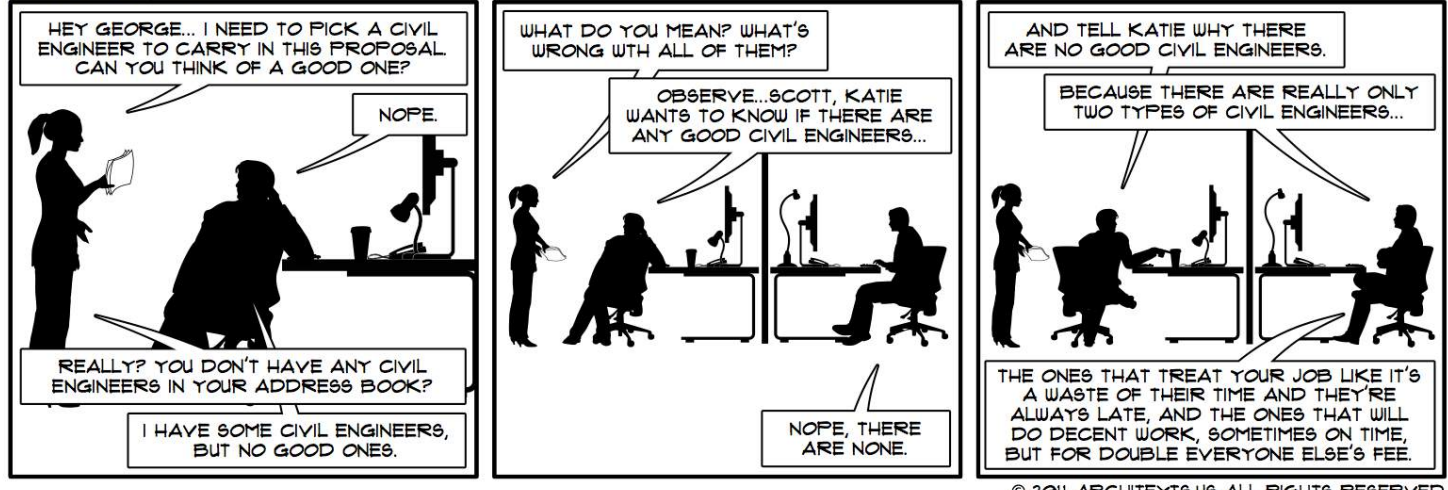
55+65+75 < 200

MASS

3g	PEANUT M&M
100g	CELL PHONE
500g	BOTTLED WATER
1 kg	ULTRAPORTABLE LAPTOP
2 kg	LIGHT-MEDIUM LAPTOP
3 kg	HEAVY LAPTOP
5 kg	LCD MONITOR
15 kg	CRT MONITOR
4 kg	CAT
4.1 kg	CAT (WITH CAPTION)
60 kg	LADY
70 kg	DUDE
150 kg	SHAQ
200 kg	YOUR MOM
220 kg	YOUR MOM (INCL. CHEAP JEWELRY)
223 kg	YOUR MOM (ALSO INCL. MAKEUP)



ARCHITEXTS



LAST CALL

SO. MUCH. INVOLVEMENT.

THE IRON MAN

JEFFREY "FRANK" TOLTON
- AERO B V -



C-Eng Involvement:

EngFrosh: Facil, Planning x3
Troitsky: Admiral x3, Team Captain x3
OEC: Participant (2015) /
Competitions Co-Chair (2017)
CEC 2015 Participant
GNCTR 2016 Safety
Leo's Manager x2

Hailing from: Brockville, ON

Your life described with a movie title:

The Gods Must Be Crazy

If you had to be a dessert, which dessert would you be and why?

Oatmeal raisin cookie, just to mess with those who want chocolate chip oatmeal cookies.

Describe your personal style in three words:

Cynical, pragmatic, opportunistic.

A song lyric that speaks to you on a spiritual level?

"Then let his arching wrecking ball proclaim: "I hate Winnipeg."

-One Great City, The Weakerthans

What's been your proudest moment to date?

I once picked up three peanuts side-by-side with chopsticks.

What holds the top spot on your bucket list?

To go to space.

If you were to meet Justin Trudeau, what would you say to him?

Hello.

You can get away with one crime. What is it?

Stealing a spaceship, because why the hell not?

If you had to give up one of your five senses, which one would it be and why?

Scent, because the world smells shitty enough as it is.

Hit me with your best six-word horror story:

Your browser history is now public.



USES FOR THE CHARLATAN

> Tape pages together to make an impromptu blanket for use on those chilly nights

> Make a papier-mâché Halloween costume

> Adequate substitute for dish rags (fact: still better than dollar store dish rags)

> Rip into tiny shreds for destructive stress relief

> Pretend to read in arts quad in an attempt to pick up artsies

> Alternatively, publicly condemn the displays of artsie entitlement contained within

> Use as disposable tablecloth to circumvent housemates making a fucking mess all over the table

> Fold into a paper plane (or crane, if you'd prefer)

> You could read it

THE IRON LADY

JULIA "SAFE SPACE" DALPHY
- ACSE V -



C-Eng Involvement:

EngFrosh: Facil, Head, GroupBro, Director
CSES: President, VP Internal, VP Academic, Secretary
CFES: National Councillor, VP Finance & Admin, National Capital Liaison, Admin
Troitsky: Admiral x2, Sub-Captain, Member
OEC: Competitions Co-Chair (2017)

Hailing from: The beautiful Ottawa, ON

Your life described with a movie title:

Alice in Wonderland

Describe your personal style in three words:

Versatile and simple

A song lyric that speaks to you on a spiritual level?

"I need home for a rest."

-Home for a Rest, Spirit of the West

What's been your proudest moment to date?

There are so many! Being thanked by anyone for volunteering always makes me proud. In recent history, probably winning with the Pirates and also seeing them pull up to the beach with their boat!

What holds the top spot on your bucket list?

Getting my Iron Ring is pretty high on the list. Beyond that, I've always REALLY wanted to hit up Iceland for some reason.

If you were to meet Justin Trudeau, what would you say to him?

I was always taught that if you have nothing nice to say, don't say anything at all. :)

You can get away with one crime. What is it?

Probably just robbing a Baskin Robbins at some point. I'm really not that high maintenance. ;)

If you had to give up one of your five senses, which one would it be and why?

Probably smell... it just seems like the least useful of the bunch.

Hit me with your best six-word horror story:

"You could always extend your degree?"

Editor-in-Chief

Cassidy Lang

VP Publications

Julia Dalphy, CSES President, also pictured above

Special Thanks To:

Every contributor, as well as every reader. It's because of you guys that this paper is the glorious tradition that it is. Stay rad, C-Eng!

- Footnotes -

Issue Made Possible By:

>40 dirty dishes/dishware throughout the whole damn house
45 plays of "The Raven Eyes" from The Agonist's new album
14 banana chocolate chunk Leo's muffins

Apologies:

To Connor: I changed the name of your company based on a Google search. I am literally the worst. All the mocking rights are yours.



THE ATTACK OF THE IRON TIMES: THIS NOVEMBER