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World Health Organization Declares India Polio Free

ALLEN CHEN
1B CIVIL

On January 13, 2011, a single case of poliovirus was reported in India originating from the West Bengal region. Three years later, with no signs of the virus among the population, India has completely eradicated polio. This March, the World Health Organization (WHO) will make a formal announcement officially deeming India polio-free. The WHO takes a country off of the list of polio endemic countries after one year without any cases, and classifies a polio-free country as one that has had no reports of polio for three years.

The idea of a polio-free India was considered a nearly impossible task when the initiative to eliminate worldwide polio began in 1988, when India had nearly 30 000 cases of the virus. In 2009, India had the highest number of polio cases in the world. India has reduced polio prevalence through many effective vaccination programs as well as overcoming several key obstacles.

Eliminating polio in India was a joint effort by WHO, UNICEF, Rotary International, US Centers for Disease Control and the Bill and Melinda Gates Foundation with the Indian government. This process has not been without challenges. The task of eliminating polio in India was challenged by a high population, a staggering birthrate and extreme population density



A health worker gives a vaccination as part of India's anti polio campaign Pippa Ranger/DFID

in some areas and lower density, isolated settlements in other rural parts of the country. Additionally, there have been situations when people have actively refused vaccination. The virus has been known to have multiple strains, which complicates the distribution and manufacturing of vaccines. Another common and major problem has been poor sanitation, which has

been counteracted through encouragement of hand washing and hygienic living, as well as the construction of more effective sewage and water quality control systems.

Educating the general public about polio has been another key factor in its complete eradication. Communicating the information throughout a country of many different cultures and languages was a task

which required impeccable organization on the part of the government.

Overall, efforts have been relentless. According to WHO, a single round of polio vaccinations in India has involved around "640 000 vaccination booths, 2.3 million vaccinators, 200 million doses of vaccine, 6.3 million ice packs, 191 million homes visited and 172 million children immunized."

Although India is now free of polio, issues still lie ahead. In an increasingly connected world, India now faces the problem of viral transmission through migration into the country. The primary issue is with migrants from countries that are still polio endemic: Pakistan, Afghanistan, and Nigeria. Endemic regions are regions where there has been a constant presence of polio. A few other countries have reported cases after being polio-free for some time. The overall objective of the organizations actively fighting polio is to have no more cases reported by 2015, which would thereby lead to a polio-free world by 2018.

Polio, also known as poliovirus, is a virus (hence poliovirus) that attacks the nervous system. The virus can severely impair movement and has caused paralysis, deformation, and in some cases, death. Oftentimes, symptoms can initially be nonexistent. In India, the main victims of polio were young children under the age of five, who were often infected through contaminated water.

Kicking off the New Year in Sherbrooke: Congress 2014

A Review of the Canadian Federation of Engineering Students' Annual General Meeting

LUCAS HUDSON
3B MECHATRONICS

During the first week of school, a few of you may have noticed a classmate or two missing from your lectures only to see them mysteriously appear in the next week of class. Lo and behold, your classmates weren't tired of course overviews and syllabuses. Myself and seven others were in Orford, Québec, attending the Canadian Federation of Engineering Students' (CFES) annual general meeting (AGM) Congress. The conference, hosted by Sherbrooke University, not only acts as the organizations' AGM but also provides an opportunity for engineering students from across the country to collaborate and learn from industry partners, sponsors and fellow students.

Over the first three days of the five day conference, delegates introduced themselves to each other during evenings of mixer events, hosted in downtown Magog and on Sherbrooke campus. During the day, delegates attended a variety of student-run seminars relating to a diverse set of topics. From how to run a society election to how to deal with the media, every session brought forth new ideas from schools large and small and from students with different back-

grounds. The most interesting session to me was the governance session, where "large schools" from across Canada convened and discussed issues experienced by schools coast-to-coast. Topics at this session encompassed many ideas from the benefits of full-time staff to society fees and governance structures. Though, those things may sound boring to some, I find the most intriguing part of many of my conversations at Congress the ones where I get to learn how other schools operate and run.

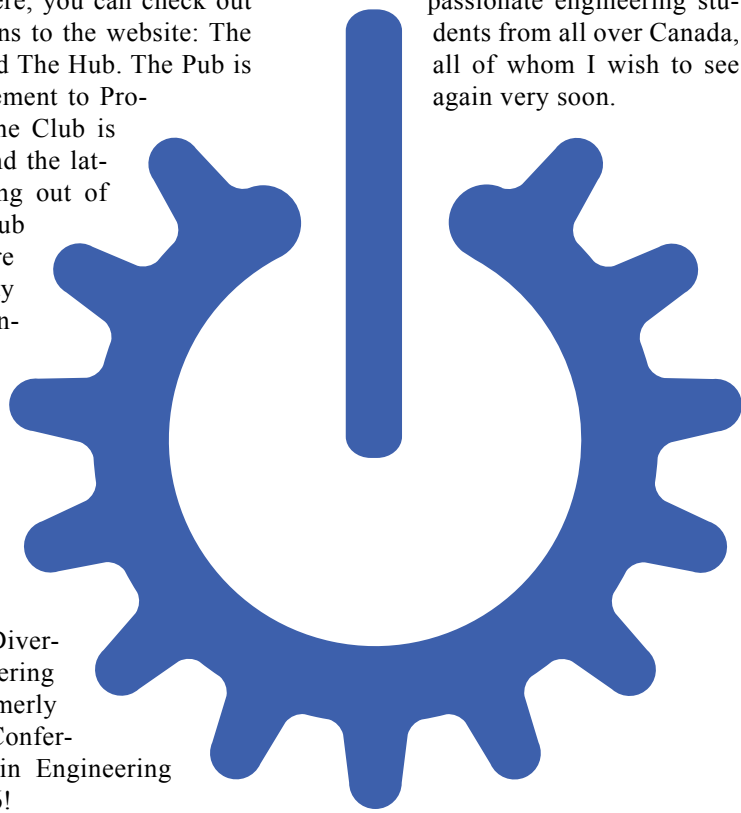
After sessions completed on the morning of the third day, Claire Lewis from SNC Lavalin talked about Ethics and Compliance, an apt topic coming from an employer of recent, significant corruption scandals. Mrs. Lewis' words were not those of doubt or cover up, but of reconciliation and compassion. She talked about a culture shift from within SNC Lavalin, which she stressed must start from the top. She also rejected the notion of the "culture of corruption," commenting that international contracts can be conducted without bribes, backdoor deals and under-the-table negotiation.

The remaining time at Congress consisted of two plenary sessions, the equivalent to our Engineering Society council meetings, elections, and bidding, as well

as a career fair. I was not able to attend enough of plenary to effectively describe what was passed and what was significant, but if anyone wants to learn more about what went on, minutes should be available on the CFES website, cfes.ca. While you are there, you can check out three new additions to the website: The Pub, The Club and The Hub. The Pub is the online replacement to Project Magazine. The Club is where you can find the latest updates coming out of CFES and the Hub is a forum where student society executives can interact and share ideas.

One last notable thing that came out of Congress was the successful bid by Waterloo to host the CFES Conference on Diversity in Engineering (CFES CED), formerly the National Conference of Women in Engineering (NCWiE), in 2016!

Thank you to the University of Waterloo and the Faculty of Engineering for sending eight, lucky delegates to this great conference. It was an experience that will affect my decisions in the years to come and has introduced me to many passionate engineering students from all over Canada, all of whom I wish to see again very soon.



ATTENTION FIRST YEARS! WE WANT YOU!!

Also, My Journey To Editor-In-Chief and What is to Come



SPENSER GOOD
EDITOR-IN-CHIEF

I am honoured and, I must admit, somewhat surprised to be writing my first Letter from the Editor as Editor-in-Chief (EIC) of *The Iron Warrior*. I have many plans and aspiration for the next four months, and I will get to them later in this letter. Firstly, however, I want to make a couple notes on how it feels to be EIC, and I want to extend thanks to those who have allowed me this opportunity. For all first years reading this, feel free to skip to paragraph six if this looks TLDR, but please do not skip this article entirely.

I am honoured to be EIC for obvious reasons. *The Iron Warrior* has been the voice of the engineering community at this University for 34 years, and has done an outstanding job in educating, opining, reporting, and presenting content focused on not only the University, but the world. To include myself in the list of esteemed students who have ran this paper in the past is both humbling and somewhat intimidating. I plan to continue to uphold the quality and reputation of *The Iron Warrior*. I am also thrilled to be EIC because I consider myself to be a passionate writer. I hope that, as I have done for years as a ski instructor, I am able to pass on my passion for a skill to other students at the University.

Now I have to explain why I am surprised to have obtained this position. I have written for this newspaper since my 1A term in Mechanical Engineering, and I am currently working on my 3B term. Besides the staple Nanos of this group, I think I may be the most tenured member of *The Iron Warrior* staff. I also believe I may have been the most troublesome one. I am a firm believer in the value of free speech, I think that the quest for political correctness is leading us down a dangerous path to where expressing one's own opinion cannot be done without fear of insulting somebody else. This core principle of mine has, in previous terms, gotten this newspaper into some trouble, and I also believe it may have tarnished my name somewhat to the eyes of some of *The Iron Warrior* staff. I have never really apologized for these escapades that have insulted others, but now I will. I concede that now, perhaps more than ever, opinionated writing straddles a line between honest and hard hitting, and offensive. In the past, without meaning any offense, I have crossed this line. I apologize to those that I offended and to those that had to deal with it. It is this past writing style that led me to believe that my chances of obtaining a higher position with the newspaper to be low. For giving me a chance to run this newspaper after these missteps, I want to thank former EICs Farzi Yusufali, Jacob Terry, Roy Lee, and in particular Lucas Hudson, who first approached me with this opportunity. It is Farzi and Roy, after all, who had to be con-

stantly wary of my writing and approach me when things seemed dangerous. I also want to note that all four of these editors did an incredible job running this paper, and I hope that I can come close to their achievements on their respective terms.

On the note of political correctness, I do want to be clear that my writing has softened up in the last two terms, and I have had no run-ins of significance since my 2A term. I am confident that I now have a filter for the offensive and the "this-goes-too-far" kind of articles. On the note of political correctness, however, I want to state that I am still going to strongly promote opinionated pieces in this newspaper. Getting people talking about global and on-campus issues is important because it encourages participation in a system that is based upon it. When it comes to straddling the so-called line I mentioned above, I can only say that instances of me rejecting an opinion article will be extremely rare unless it is untrue or contains prejudice, vulgarity or extremely sensitive topics (ie. religion). For those former editors who may be sweating after reading this, don't worry, you will be consulted before release.

The issue of opinion provides a segue to my next topic, and this is passion for writing. My passion for writing is deepest when I get to express my opinion, but others are different, and I STRONGLY encourage any of you who like to write to join *The Iron Warrior* staff, or at least attend a meeting (TUESDAYS E2-2347 5:30 PM). As engineering students, in co-op and school, we contribute to society in very important ways. However, our contributions often come through displays of logic, mathematics, and problem solving, things that, for most people anyways, do not stir the soul. I think it is important that all humans find a way to express themselves, and I want *The Iron Warrior* to provide an avenue of expression to those of you who seek it. Also, when we have impassioned writers our product becomes stronger because the content is created by people who care about it. I also want to stress that I am open to any suggestions in terms of what you may want to write, whether it be creative, opinionated, technology related, informative or comedic.

I also want to make an appeal to ALL FIRST YEAR STUDENTS, we want you (second years too)! Our staff is overwhelmingly composed of more senior students, and if *The Iron Warrior* is to continue we will need you to carry the torch in the future. Creating this paper may be challenging, and often stressful, but it is also a lot of fun. You will meet people with similar passions and interests that are welcoming, unpretentious, funny (or at least try to be), and passionate. Also, one of the most satisfying aspects of my entire university career has been picking up *The Iron Warrior* on every second Wednesday and proudly admiring my own work. I hope that some of you first years will decide to give yourself the opportunity to un-

derstand what I mean. Also, I want to stress that if you feel too overwhelmed to regularly contribute, just come to meetings and write when you please. One of the greatest advantages of being a contributor to *The Iron Warrior* over other extracurricular activities is that you can largely participate when you feel you have the time. Just come to a meeting and see where it goes from there, this is all I ask.

Moving on, I want to elaborate on the improvements to the paper I want to see made this term. I want to stress my technical skills are somewhat lacking. So in terms of modifications to the website or improving how we produce the newspaper electronically, I will likely stay with status quo. My main project will be improving *The Iron Warrior* office. For such a storied newspaper, the office is in pitiful shape. Thanks to Michael Laanvere, Andrew McMahon, Krishna Iyer, Farzi Yusufali, and my sister, Kinsey, we have already reorganized and cleaned the office to a state that looks much better than it did. There is much work to be done, however. I am hoping to gather some alumni memorabilia and use it to improve the aesthetics of the room, as well as organize the wealth of junk we have in the office so that we are a more welcoming place to strangers and passers by. Beyond this, I hope to create checklists to streamline the editing and production process to limit mistakes in the future. These are my goals, but I would also love to hear your thoughts, feel free to email me at iwarrior@uwaterloo.ca with questions, words or advice.

Before I sign off I have a few more things to say. In the next four issues, I plan for my letters to be more about life related things. I plan to dedicate one to someone who I care about and is now gone. I plan to write one about Canada. In another I will focus on how worrying can be both the most important tool in your life (if controlled correctly) and also the most damaging. In my final issue, I will talk about why, even as the last of the veterans pass on, we can never forget the lessons that mankind learned from the Second World War. While I define opinionated writing as straddling a line between offensive and honest, I define writing these letters as straddling a line between relatable and self indulgent. I hope that my first letter, and my future ones, will be standing firmly on the right side of that line. If not, make sure to tell me I sound like a pompous ass. Also, a quick word on what will be my sign off note: HOLD FAST. My father is a former heart attack and marathon survivor (even more impressively, in that order), and he wears an identity tag when he runs that says in bold capital letters: HOLD FAST. A statement also featured in *Master and Commander* starring Russel Crowe. I think to my Dad, and definitely to myself, it means to never give up, a message so clichéd but also so important. Anyways, thanks to my staff for their support, and to you the reader, enjoy this first issue of *The Iron Warrior* and HOLD FAST!

THE IRON WARRIOR

The Newspaper of the University of Waterloo Engineering Society

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Send your submissions to iwarrior@uwaterloo.ca

Winter 2014 Publication Schedule: January 22, February 5, February 26, March 12, March 26

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.

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Panama Canal Expansion in Danger of Coming to a Halt

Building Consortium Underbid Threatens Progress



**MICHAEL
LAANVERE**
3B MECHANICAL

The Panama Canal is a 77 kilometre long shipping channel that was completed in 1914 and connects the Atlantic and Pacific Oceans. It remains one of the largest and most difficult engineering project to ever be completed. Currently there are major civil works being done to expand the canal which will double the canal's capacity. The \$5.25 billion project began in 2007 and is expected to be completed in 2015, although that date is now in question.

The current builders of the new locks are threatening to halt work due to a dispute of \$1.6 billion of cost overruns. The Panama Canal Authority, a semi-autonomous organisation responsible for the Panama Canal, are refusing to pay the money and have stated that they are following the contract and so should the builders.

The builders are a consortium of contractors from Spain, Italy, Belgium, and Panama called the Grupo Unidos por el Canal (GUPC). Sacry, a Spanish company, heads the consortium and have argued that the Canal Authority's geological studies were faulty and have forced them to go over budget.

The GUPC won the contract to build a third set of locks, which is just one part of the overall expansion project, in 2009 for \$3.2 billion. This was considerably lower than any other bid and lower than

the reference figure of \$3.48 billion set by the Panama Canal Authority.

Months ago correspondences were leaked between the US Embassy in Panama and the American contractor that bid for the job: Bechtel. Bechtel warned that the bid from the GUPC wasn't enough to even pay for pouring the concrete and that the GUPC would be forced to renegotiate the contract.

There are some suspicions that in Spain, Sacry secures contracts by bidding at a low price and then making up the money with addendum and unexpected cost overruns. It is possible that is what is being done here.

The Panama Canal Authority have stated that if the GUPC decide to halt work and break the contract that they will be able to use the surety bonds they would receive to pay for another contractor to complete the works.

The referendum for the expansion project was approved by the Panamanian people with 77 per cent of the vote. The Panama Canal Authority is financially independent of the government of Panama and is paying for the project.

Five per cent of the world's trade goes through the Panama Canal every year, and the expansion will likely see that number increase as global trade routes will shift. This is because the expansion will double the maximum allowable size of ships to pass which would allow the world's largest cargo-carrying vessels access to the Canal. The Panama Canal Authority made \$2.2 billion in tolls in 2012. The expansion

should see that number more than double.

Two-thirds of the traffic through the canal is either going from or going to the US. The expansion will allow not only more ships to go through but also allow much larger ships to pass. This is expected to have a large impact on US ports and US port authorities are expected to spend \$46 billion in the next few years to improve infrastructure in order to meet the new demand. Liverpool has even been contemplating an upgrade in expectation of the new demand.

The Panama Canal has been named one of the seven wonders of the modern world by the American Society of Civil Engineers. It is one of the greatest civil engineering triumphs and by far the largest American engineering project to ever be completed at the time. Work began in 1881 by the French. In 1889 the French company went bankrupt spending \$287 million (equivalent to \$6.7 billion now) and losing 22 000 lives to accidents and disease. In 1903 the US obtained the lease to the area and began construction which would last for 10 more years and claim 5 600 more lives.

Initially the canal was to be built at sea level just as the Suez Canal was, and this was how the French began the project. Further geological surveying, though, made a system of locks more feasible than a sea level canal. This would lead to the creation of the largest man-made lake and largest dam in the world at the time.

Construction of the canal not only saw the creation of an engineering marvel but

also the birth of a nation. During the year the Americans began construction the then-Province of Panama revolted from Colombia and declared independence. During the revolt US Warships stationed at the canal blocked and delayed Colombian troop ships sent to put down the rebellion. The United States were the first country to recognize the Republic of Panama in 1903. The US remained in control of the canal until December 31, 1999 when control was handed over to the Republic of Panama.

It took 37 years for the Canal to be built; from the beginning of construction by the French to the completion by the Americans. The Panama Canal represents not only a 12 600 kilometre saving shortcut but also a symbol of American civil engineering. By completing the monstrous undertaking that the French had failed at, the US showed the world that at that time they were the leaders in the engineering world.

This year marks the 100 year anniversary of the completion of the canal. The expansion project is 72 per cent complete but unless the GUPC and the Panama Canal Authority can come to agreement, the project will come to a grinding halt. The GUPC set an ultimatum date of January 20 which will come to pass before this article is released so by the time you read this either the expansion will be stopped at the cost of thousands of jobs and millions in unseen tolls, or construction will continue as planned and the 100th anniversary of the Panama Canal can be marked with a brand new set of locks.



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The 8 Month Co-op



KATE HEYMANS
4B CHEMICAL

You may have been finding the job of your dreams or you may be scraping the bottom of the metaphorical JobMine barrel but the fact is that you have probably seen (and considered) an eight month co-op term. Or you're in one of those unlucky programs that has to do an eight month co-op and you're considering splitting it into two four month terms.

As a Chemical Engineering student, eight month co-op terms are not integrated in our program, yet they seem to be becoming more prevalent. For my third work term I was tempted into accepting an eight month co-op term from a very reputable company with the promise that it would be awesome. It was a great experience but if I could go back in time, I would tell my past self to refuse.

1. I did not learn more at that eight month job than I have in some of my four month jobs.

2. I could have gotten a similar job at a similar company without having to spend eight months at that company.

3. For anyone considering running for a student leader position (I'm looking at all the future EngSoc Presidents and Vice-Presidents, EngFOC etc.), disappearing for eight months makes it really difficult to get back into the regular student life.

4. If you wanted to go on an exchange abroad, it sucks trying to fit that into your streaming schedule on top of the eight month co-op term.

At the same time, I can't deny that there were a few advantages

1. I didn't have to waste time

applying on JobMine again.

2. I got to be more involved in the company and see projects all the way through.

3. I got a full-time job offer from this company three years later without even interviewing.

I regret my eight month co-op term but my advice to you? Whatever you choose, rock it.

If you've decided to get an eight month, take that opportunity to really become a part of that company's life. You have the time to become an essential resource which will definitely get you a job in the long-term. You also have enough time to go try things outside of your initial job scope, so go look at the department next door and take a stab at that wacky project that no one seems to want.

If you've decided you want to stick to your normal streaming or you want to get two four month work terms instead, go for it. Try to make sure that you're still getting the most out of each co-op term individually and out of the school term in between. Whatever reason you had to choose four months instead of the eight month, do your best to enjoy it.

At the end of the day, your decision won't make or break your university experience but it's important to realize that it will make a difference.

Also there a few administrative things I should mention:

For anyone considering work in Alberta for the long term, APEGGA, unlike PEO, only considers pre-graduation experience after your fifth academic term (3A) as valid experience to get your P. Eng. So try to do your co-op terms after 3A rather than before.

If you're dependent on the student health and dental program, make sure you notify so that you can maintain your coverage.

E7, RidgidWare, and Elections!



DAVID BIRNBAUM
PRESIDENT

Hello wonderful people, and welcome! (back!)

With only five IW articles left in my executive career, I am happy to say that there are some pretty exciting things happening this term!

Engineering 7!!! I am sure that most of you have heard about the Faculty's plans for a brand new, world class engineering building. I sit as the undergraduate student representative on two different committees related to designing and allocating the space in Engineering 7. Although no numbers are confirmed, I can say with confidence that pretty much the entire first floor is dedicated to undergraduate students. There will be study space, a second C&D, and an electronic components shop to name a few.

Speaking of the electronic components shop, the Engineering Society is currently in the process of creating RidgidWare, which will serve as a one stop shop for all of your electronics needs. It will have an inventory of common components and will also be a place where you can go talk to knowledgeable people about your needs, as well as take advantage of discounts with bulk orders of components.

We are hoping to have the doors to RidgidWare open in March, so keep an eye out for that!

Also something of much importance is the Engineering Town Hall which is happening today (Wednesday) at 4:45 in E5 3106. The Dean and Associate Deans will be updating all of the students on the Faculty's progression in line with their goals set out for 2015.

On a more Engineering Society specific note: we recently formed a Governance Review Committee that will be looking into the current structure of the Society and providing recommendations for changes. The committee is tasked with specifically looking into incorporation, general meetings, and a board of directors for the Society.

Nominations are now open for my replacement! If you are interested in providing your vision to the Society, and leading it for the next 16 months, you should definitely consider running! Please feel free to ask me any questions about the position. Remember to keep an eye open for the nomination period for the VP positions as well, which are coming soon!

That is all I have to update on at the moment, if there are any questions or concerns, feel free to email me at president.a@engsoc.uwaterloo.ca.

Thanks, and see you in two weeks on these here pages!

Budget, Coverall Day, and More!



KEVIN MCNAMARA
VP FINANCE

Hello A-Soc! Welcome back to everyone who was on co-op, and welcome to all the first and fourth years who have joined us! Here's a few updates on finance related things:

Budget: We have an EngSoc Budget for the term! A big thank you to all of the directors who budgeted efficiently and submitted their budgets on time. If you are interested in knowing where your \$14.72 EngSoc fee is going to be spent over the term, take a look at the budget allocations (which are included on this page). Each line represents a specific cost/event/service/directorship, and how much money they have been allocated for the term. The largest chunk of the budget (fixed costs) goes towards operating the Engineering Society Office (CPH 1327), so make sure that we can offer everything that you need! If you have any budget related questions, I encourage you to send me an email at vpfinance.a@engsoc.uwaterloo.ca, or speak to me in the EngSoc Office!

Novelties: It is open for the term! There's a lot of cool new items that we have not had before, including a sweet EngSoc logo t-shirt for \$20. Stop by between 11:30 and 1:30 to take a browse through what is available. Novelties is the one place on campus where you can find a ton of great Waterloo Engineering swag, such as clothing, glassware, mugs, patches, and buttons! If you have any suggestions for items that you would like to see in Novelties, let me know! Waterloo Engineering Onesie day is going to happen this term, so keep an eye out for details on that!

Coverall Day: Coverall day is back, and

this time it is twice as awesome! Coveralls will be on sale in CPH foyer Thursday and Friday (that's January 23 and 24) from 11:30-1:30 for the awesome price of \$80, which includes coveralls and two patches. If you would just like coveralls and no patches they will be \$70. For an extra \$5 you can get two lines of text embroidered on the shoulder. Also, if you need help sewing on patches, there will be a Patch Sewing Day taking place at the same time in POETS!

Engineering Capital Improvements Fund (ECIF): ECIF is an awesome way get EngSoc to improve your student space around engineering. In the past, purchases such as POETS patio furniture, improvements to the CPH foyer, and LCD screens for advertising have been made. If you have an idea for a purchase that could be made to go towards Engineering student space, let me know or fill out the form on the website (<http://engsoc.uwaterloo.ca/ecif>).

Sponsorship: Once again, EngSoc will be sponsoring student teams and clubs this term. The way that this works is that student teams and clubs can apply to be sponsored by EngSoc and give a short presentation about the group to the Sponsorship Committee (which consists of six student members and myself). The committee then allocates money to the groups from the budget. This can be used to help pay for parts for a student team, competition fees and various other things. If you are a member of a student team or club who would be interested in sponsorship, keep an eye out for the call for submissions which will be within the next few weeks.

That's all for this week! As always, if you have any questions related to EngSoc and finances, send me an email to vpfinance.a@engsoc.uwaterloo.ca, or drop by the EngSoc Office!

Waterloo Engineering Society 'A' - Winter 2014 Budget	
Item	Budgeted
Estimated Income	
Student Fees	\$ 54,464.00
Orifice Sales	\$ 300.00
Total Income	\$ 54,764.00
Estimated Expenses	
Fixed Costs	
Bank Charges/Payroll/Utilities/Office	\$ 25,382.91
ECIF	\$ 2,723.20
Sponsorship	\$ 5,000.00
Misc. Expenses	\$ 5,654.02
Iron Warrior	\$ 544.64
Orientation Week	\$ 3,106.68
Total Fixed Costs	\$ 42,411.45
Executive	
Executive	\$ 1,000.00
President	\$ 1,000.00
VP Finance	\$ 125.00
Total Executive	\$ 2,125.00
President	
Chief Returning Officer	\$ 611.15
POETS Manager	\$ 585.00
Speaker	\$ 2,500.00
President Total	\$ 3,696.15
VP Education	
Academic Rep Advisor	\$ 50.00
VP Education Total	\$ 50.00
VP External	
Charities	\$ 50.00
Charity Bottle Drive	\$ 8.00
First Year Mentoring	\$ 253.29
Outreach Commissioner	
Bus Push	\$ 825.00
CANstruction	\$ 122.00
Education Outreach	\$ 76.00
Engineering a Difference	\$ 225.00
Environmental (Spring Cleanup)	\$ 410.00
Minor Hockey Team	\$ 350.00
Mac Eng Musical	\$ 230.00
NEM - Rube Goldberg Machine	\$ 63.00
Women In Engineering	\$ 303.00
VP External Total	\$ 2,915.29
VP Internal	
Student Services Commissioner	
Mental Health Awareness - Puppies	\$ 100.00
Mental Health Awareness	\$ 335.60
Resume Critiques	\$ 300.00
Electronics Workshop	\$ 209.50
Textbook Library	\$ 50.00
Student Services Total	\$ 995.10
Student Life Commissioner	
All You Can Eat Week	\$ 50.00
Amazing Race	\$ 105.00
Arts	\$ 89.00
Athletics	\$ 395.00
Cardboard Boat Racing	\$ 210.00
Curling	\$ 490.00
EngPlay	\$ 60.00
Exchange	\$ 120.00
Frost Week	\$ 155.00
Genius Bowl	\$ 350.00
GLOW Liason	\$ 137.00
Jazz Band	\$ 530.00
Music	\$ 472.00
p**5	\$ 600.00
Patch Sewing Day	\$ 70.00
Pi Day	\$ 61.50
Running Club	\$ 50.00
Speed Dating	\$ 50.00
TalEng	\$ 145.00
Spirit 2014	\$ 100.00
Spirit 2015	\$ 100.00
Spirit 2016	\$ 100.00
Spirit 2017	\$ 100.00
Spirit 2018	\$ 100.00
Winter Fun	\$ 30.00
Student Life Total	\$ 4,669.50
VP Internal Total	\$ 5,664.60
Net	\$ (2,098.49)

Looking for Interview Guidance?



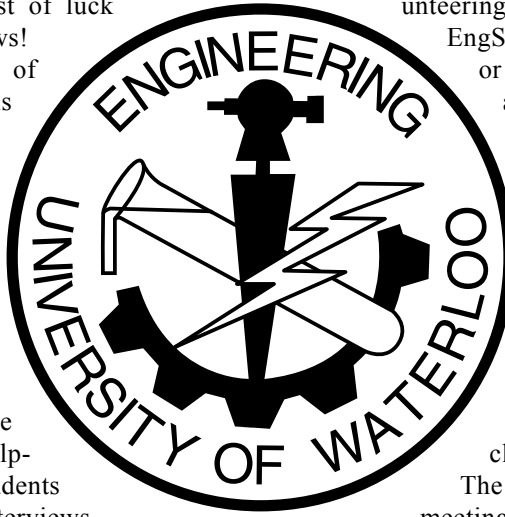
DREW DUTTON
VP EDUCATION

Welcome back everyone, and a very warm welcome to the first years and fourth years joining us for their first time! I hope that with classes now well under way you are feeling settled in and happy to be back in Waterloo for another great Winter term.

I know we're only just back to the books, but it is that time of the term already...job application time! Hopefully you've found some interesting jobs to apply to on JobMine during the first round of postings that closed yesterday. The second round of postings is active this Friday, January 24 at 7:00 a.m. and will be open until Monday, January 27 at 11:59 p.m. Make sure your resumes are

well polished. Best of luck with your interviews!

On the subject of interviews, this Tuesday, January 28 from 4:30 p.m. to 6:30 p.m. the Engineering Society will be hosting an Interview Skills Workshop! This workshop will be geared towards helping engineering students prepare for their interviews. Students will be paired with an upper year student for a mock interview. The upper year will critique and provide suggestions on how to improve your interview performance. Volunteers are needed! If you are interested in vol-



unteering, please stop by the EngSoc office to see me or send me an email at vpeducation.a@engsoc.uwaterloo.ca. Location is TBA.

This term our EngSoc Academic Rep Director, Josh Kalpin, and I will host a total of three meetings with class Academic Reps. The objective of these meetings will be to review

the role of Academic Reps within each department, gauge relationships between Reps and their department, investigate methods for improvement, provide advice on how to mediate effectively between the class and professors and to assist in developing relationships between Academic Reps. Naturally, Academic Reps from upper years know the ins and outs of their departments best. We hope that they will have an abundance of pertinent information to share with the younger years once we put them in touch.

Once again, welcome back! I wish everyone the best of success this term. If you have any questions or concerns, please don't hesitate to contact me.

HOW TO GET INVOLVED THIS WINTER!

A Wonderful Winter Ahead!



ANNAMARIA REDA
BRENDAN O'HANLON
VPS INTERNAL

Hello everyone, and welcome back to another school term! I'm super excited to be back, and I hope you are as well!

Events: We've already kicked off the first few weeks with some awesome events and there are so many more to come. There are so many ways to keep up to date on the upcoming events and services our directors have been working so hard on! You can check out the white board outside of the Orifice (CPH 1327), look out for posters on our boards, join the mailing list or visit engsoc.uwaterloo.ca/events. Remember that coming out to events are a great study break as well as an awesome way to meet people!

Getting Informed: Although I mentioned a whole bunch of ways for you to get informed on what the Engineering Society is up to, we are always looking for ways to improve our communication with the student body. If you have any suggestions on how your class reps or

the executives can better inform you on initiatives, events and services, please let us know!

Care Bear Thank You's: Have you ever wanted to thank someone for helping you on that assignment, or volunteering for an event? The Engineering Society is starting a new Care Bear thank you initiative this term! By signing up the person you want to thank on the bit.ly/EngSocCareBear form, they will be entered into a draw to win some free candy! I just want to note that the responses sent on this form are completely anonymous, and will only be seen by the VP Internal and Student Life Commissioner.

Tickets, Tickets, Tickets: We understand that it is sometimes difficult to make it to the Orifice or CPH Foyer to purchase tickets for some of our events like EngPlay and Semi-Formal. That's why this term will providing tickets to your class reps to bring the tickets to you!

If you have any questions, or are looking to get involved somehow this term, send me an e-mail at vpinternal.a@engsoc.uwaterloo.ca. I would love to hear from you!



LEILA MEEMA-COLEMAN
VP EXTERNAL

Yay, winter term!!! Winter term is the most exciting term for VP External because there are SO MANY OUTREACH ACTIVITIES! So, I'm going to use this article to outline all of the amazing events you can get involved with this term! If any of these events tickle your fancy and you would like more information on how to get involved, send me an e-mail at vpexternal.a@engsoc.uwaterloo.ca.

CANstruction: People have always told you to not play with your food, but not this time! Join us to build a six foot tall structure out of cans at Conestoga mall, with all the food used being donated to the Waterloo Food Bank!

Education Outreach: Want to inspire the next generation of engineers?? We will be volunteering at a children's museum in Kitchener three times this term running fun and exciting engineering experiments to get them amped up for science and engineering!

Bus Push: It's called bus push but it's actually PULLING a bus from the University all the way down King street to Kitchener collecting donations for the

Happy and Single Foundation. This super fun event draws a big crowd and is a great way to get involved in the community!!

Rube Goldberg Machine: For National Engineering Month we will be participating in a provincial wide Rube Goldberg machine contest! A Rube Goldberg machine is a series of complex tasks that completes a simple objective so we need all the tinkering, creative engineering types out to help us build the biggest, baddest machine!



Engineering a Difference: If volunteering is your passion then engineering a difference is for you! Exciting opportunities will be running throughout the term working with non-profit organizations in our surrounding community!

Spring Clean-up: Everything needs a bit of spring clean-up! We will be helping out the community and showing our pride in our engineering space! Come out and help clean up!

In addition to all of this we will also be making new friends this term with McMaster by attending the fabulous McMaster Mac Eng Musical! On top of that we are working with Architecture to get them back home and visit us at one of our events!

That's all for me for now but stay tuned for more events, more fun, and more goats (#goatteam14) in my next article!

Upcoming Events Calendar

Wednesday January 22	Thursday January 23	Friday January 24	Saturday January 25	Sunday January 26	Monday January 27	Tuesday January 28	Check out up-to-the-day event postings on the EngSoc website at engsoc.uwaterloo.ca
Change for Change Presidential Nominations Hot Chocolate Wednesdays 15:30 - 16:30 Townhall Meeting 16:45 - 18:30 Exchange Potluck 17:00 - 19:30 2016 Pizza & Movie 18:00 - 21:00 Tobogganing & Hot Chocolate 20:00 - 23:30	Change for Change Presidential Nominations Leather Jacket Day 10:00 - 16:00, SCH Coverall Day 11:30 - 13:30 Patch Sewing Day 16:00 - 18:00 Running Club 18:00 - 19:00 Alumni Speaker 18:30 - 19:30, E5 5106 GLOW Pizza Night 19:30 - 21:30	Change for Change Presidential Nominations Gradcomm Event #2 11:00 - 02:00 Coverall Day 11:30 - 13:30	Department Olympiad	All-You-Can-Eat Week Engineering Outreach - THEMUSEUM 09:00 - 15:00	All-You-Can-Eat Week Presidential Campaigning Goblal Cafés 11:30 - 13:30	All-You-Can-Eat Week Presidential Campaigning Interview Skills Workshop 16:30 - 18:30 Running Club 18:00 - 19:00	
Wednesday January 29	Thursday January 30	Friday January 31	Saturday February 1	Sunday February 2	Monday February 3	Tuesday February 4	
All-You-Can-Eat Week Presidential Campaigning Hot Chocolate Wednesdays 15:30 - 16:30 EngSoc Meeting #2 18:00 - 21:00	All-You-Can-Eat Week Presidential Campaigning Running Club 18:00 - 19:00 Speeding Dating 19:00 - 21:00	All-You-Can-Eat Week Presidential Campaigning First Year Mentoring Social 19:00 - 22:00	Presidential Voting 2017 Olympiad 14:00 - 18:00	Presidential Voting Ski/Snowboard Trip	Presidential Voting Goblal Cafés 11:30 - 13:30	Presidential Voting Running Club 18:00 - 19:00	 

Point Vs. Counterpoint

Did York University Respond Correctly to Student's Opposition to Mixed Gender Group?

POINT

JOSHUA KALPIN
3A SOFTWARE

Canada takes pride and is known for its multiculturalism and tolerance of many different beliefs. So much so, that our Charter of Rights and Freedoms was enacted to protect these beliefs. Furthermore, the charter also includes the guarantee of sexual and racial equality amongst Canadian citizens. So, what happens when two of these clash? Well, this happened recently at York University when a student taking a sociology class asked to be excused from a group project because his beliefs said he was not allowed to work with women. The professor teaching the course, Dr. Paul Grayson, disallowed the request, while the Dean of Arts demanded that he accommodate the student. In this instance, the professor got this delicate ruling correct and the university is completely in the wrong.

First, although the charter grants the right to have any religious belief that one wishes, there have been a number of court rulings that have defined some of the technicalities behind this. In this case, we can refer to the ruling *Syndicat Northcrest v. Amselem*. In this ruling, precedent was set so that if the courts believe that a practice that someone has is attached to their religion, they then may ask if that belief follows the charter. In relation to the York case, the student agreed to comply with Professor Grayson's decision to have him still complete the group project. Since the student did not dispute the decision, the belief was not strong enough to justify enforcing it under the charter, which was the primary argument by the university to allow for it.

Second, the university argued that because Professor Grayson allowed another student who happened to be out of the country to be exempt from this assignment, that the religious accommodation should be allowed. The key problem with this assertion is that the circumstances are completely different. Since the course in question is offered online, it is assumed that the course can be taken remotely. In this case, there was an exception to that and it was handled appropriately. Having a belief that one can't work with women is contradictory to attending a university, especially one with over 70 per cent of its populace being female like York is.

Third, as many have opined, what would the decision have been if the student said that his beliefs said he could not work with Asian people or with Muslims? If this was the case, the circumstances would not be any different. The student's religious beliefs would still be discriminatory against a group of individuals (albeit a race or religion and not gender). Regardless of what the student believed, there is no place in public institutions for religious beliefs to be

considered discriminatory against another group of people.

Another thing to consider with this controversy is how Professor Grayson came to his decision to disallow the religious accommodation for his course.

Professor Grayson first consulted both Orthodox Judaic and Islamic religious leaders to determine whether either of those religions, which he thought the student could be a part of based on his name, had rules that followed his request. Neither religion forbade interaction with women, just specific circumstances in regards to body contact. The course being taught was a sociology course, not first aid or athletics course. Therefore, this request appeared to be outside the normal beliefs of either of the suspected religions of the student.

Additionally, Professor Grayson consulted with his departmental colleagues on the issue to ensure that he was not biased in the situation. His department overwhelmingly agreed with the decision and as a whole the department passed a resolution that stated that "accommodations for students will not be made if they contribute to material or symbolic marginalizations of other students, faculty or teaching assistants."

So the question remains of why the university, even after due process by Professor Grayson and the student agreeing to accept the professor's decision, still demanded that the accommodation be met. Furthermore, this begs the question of how far should schools and other institutions go to accommodate similar religious beliefs in this nature.

In this case, the sociology department at York University got it right. What if there was a world-class surgeon that was one of a few people in the world that could perform a life saving surgery and he refused to operate on anyone that wasn't white and Christian? Would the hospital that he worked at accommodate him just because he was an exceptional surgeon or would they refuse to let him continue working there? If this occurred in Canada and the accommodation was allowed, heads would roll at the hospital. So regardless of the circumstances, these accommodations are completely inappropriate in Canada, even with people twisting the charter to protect them.

To conclude, Professor Paul Grayson was completely correct in disallowing one of his students to be exempt from a group project because his beliefs did not allow him to work with women. Using religion as the basis for discrimination is not protected under the charter and considering that the student accepted Professor Grayson's decision, should not be protected as a strong belief. Allowing for any accommodations that are discriminatory in nature is contrary to what makes Canada a tolerant and great place to live.

MEAGAN CARDNO
2N NANOTECHNOLOGY

Before beginning, I must allow for a disclaimer concerning the opinion that I am about to discuss. I wholly oppose any and all forms of sexism, and I do not condone any sort of action that propagates sexist ideas or stereotypes. At the same time, I am also supportive of religious equality and respecting the faith of others, especially when they wish to continue practicing in public environments. However, there are times when these two issues can appear to be contradictory—one such case being the recent ethical struggle concerning a York University student's request to be excused from a mandatory group project, claiming that his religious beliefs did not allow for him to interact in such a manner with women. While the professor of the course wished to refuse the student's request, the Dean of the Faculty thought that York University was obliged to accommodate the student's request.

At first glance, this scenario appears to be simply an example of a religious practice directly inhibiting equality for a minority group—a well-heard story when it comes to members of sexual and gender minorities, ethnicities, and religious beliefs. However, the situation is not as black-and-white as advocates for either group might believe. As previously mentioned, there are definite moments of contradiction when striving for equality, and the way we handle such moments is a very important matter in achieving equality for all. Delicacy is crucial—immediately declaring one side as wrong only pleases a portion of those involved, and ostracizes the rest.

This exchange is rather extraordinary when one considers the ways the parties involved reacted at different points in the exchange. When refused his request, the student supposedly was very understanding and polite about the matter, accepting his responsibility to continue with the course and project. This is not the typical picture that we often see painted of religious individuals whose practices hinge on controversy. While it is impossible to speak on behalf of the student based solely on this fact, it does suggest that the student was in no way basing his request on some sort of misogynist mentality. Motivation is paramount in the ethics of anything—very different judgements are passed on people who attack in self-defence versus premeditated assault. Likewise, what issue should we have with the student's request if it is, as he described, based solely on religious grounds, and not because he views women as lesser people than men?

COUNTERPOINT

Despite the young man's complacency with the professor's decision, the Dean's decision that his request be granted also is a rather strange one. If both professor and student had agreed upon the decision, why drag out the affair any longer? The simple answer is that he likely saw the matter as one beyond the scope of an isolated event—it is an event that has reached the public eye, and as such needed to be dealt with in a way that could set an example for similar encounters in the future, and present a positive image of the university.

Obviously, York University does not want to portray itself as a culturally insensitive place, but by the same token it would not want to participate in blatant sexism. As such, the response should not be seen as the university just attempting to portray itself in a particular politically positive light, but rather as an act of open-mindedness, showing that just as much as the student was willing to understand and concede to the professor's point of view, the university was willing to understand and concede to the student's point of view.

Compromise is an important tactic in any sort of negotiation, as is attempting to understand the perspective of the opposing opinion. If we cannot talk maturely and diplomatically about issues, we cannot hope to discuss matters of more significance than mere school projects. Other controversial topics concerning religion desperately need to be addressed as well—ones with serious consequences, such as doctrines that prevent the performing of life-saving medical procedures, or belief systems that promote the abuse or mistreatment of our fellow human beings. Merely declaring these issues as "unacceptable" and fighting against the respective religion is not going to fix them. People have tried this tactic since the first time such issues have come to light; clearly, a new tactic is needed. Peaceful discussions and intelligent conversation should pave the way to universal equality.

Religion is always a difficult topic to handle and discuss, but that does not mean we can so hastily close conversations whenever it is brought up. There are many important discussions to be had that involve religion, including matters of equality for minorities. Although contradictions may make dealing with these issues seem impossible, but the key is to find an open, common ground on which matters can be discussed. Recognizing the existence and possible validity of both opinions is step one in establishing this—and this is exactly what York University achieves by seeking to permit the student's request.



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A New Name for Equality

Delving into the Complexity of Women's Rights



CHRISTY ROUAULT
3B GEOLOGICAL

Despite years of denial, the blanket term most commonly used to describe radical female protesters became a title that I could no longer ignore, as it seemed to affect every facet of my life. The image of tyrant women burning their bras in the 60's was so deeply entrenched in the collective mind that the very word feminism had become a personal insult, thrown around with derision and carelessness. Media, art, and society as a whole, led me to believe that gender inequalities were only a reality of third world countries and that a Canadian feminist was a scar on our population. In what could be described as a unified effort to squander any hope for equality, women's rights have been tossed aside as a cause that someone fought for eons ago when suffrage for women was still an issue, outrageously suggesting that equality was obtained with one law. I grew up in a small, white, middle class town in Alberta believing this, completely unaware of the enormity of the problem that was surrounding me and I was contributing to. It wasn't until I was eighteen that I realized I myself was a feminist, and that feminism was indeed a cause I wanted to be a part of. It is so simple, clear, and inoffensive; a movement to create equal rights for men and women.

The term was coined in the early 19th century, and finally entered North

American culture in the early twentieth century and has now had three waves. The first was led by protesters against slavery, who realized that the idea of a woman being a man's property was a form of slavery in itself. Then, feminism had an emphasis on women's suffrage and the rights of women to enter a contract and own property. It was an issue of fundamental rights for a woman's autonomy and self-sustainability. For the most part, it was not restricting or intrusive for men, applying only to changes for women. Although other issues appeared, most didn't fully surface until the second wave in the 1960's. Reproductive rights, including contraceptives and abortion, and an outcry against the social construction of sex emerged. When protection against sexual assault and domestic violence became key elements of the feminist movement, the grey area between stripping the rights of an accused offender and the protection of a self-proclaimed victim was reached. Feminism was criticized for focusing almost exclusively on middle class,

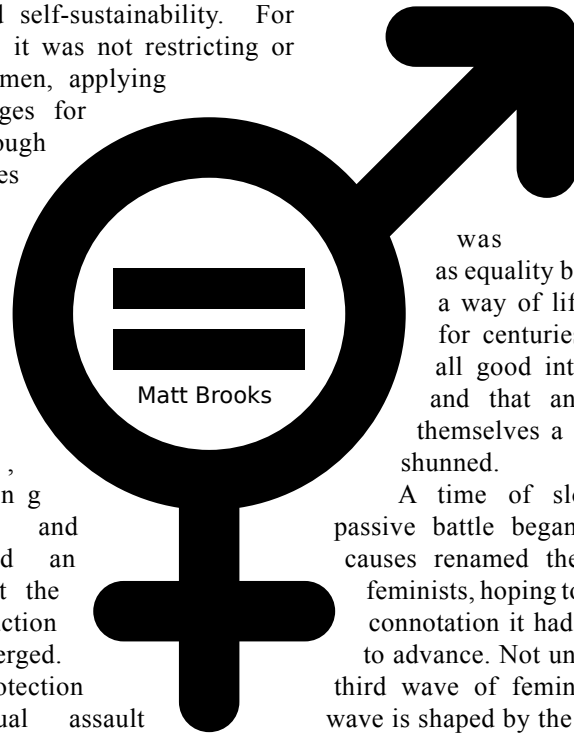
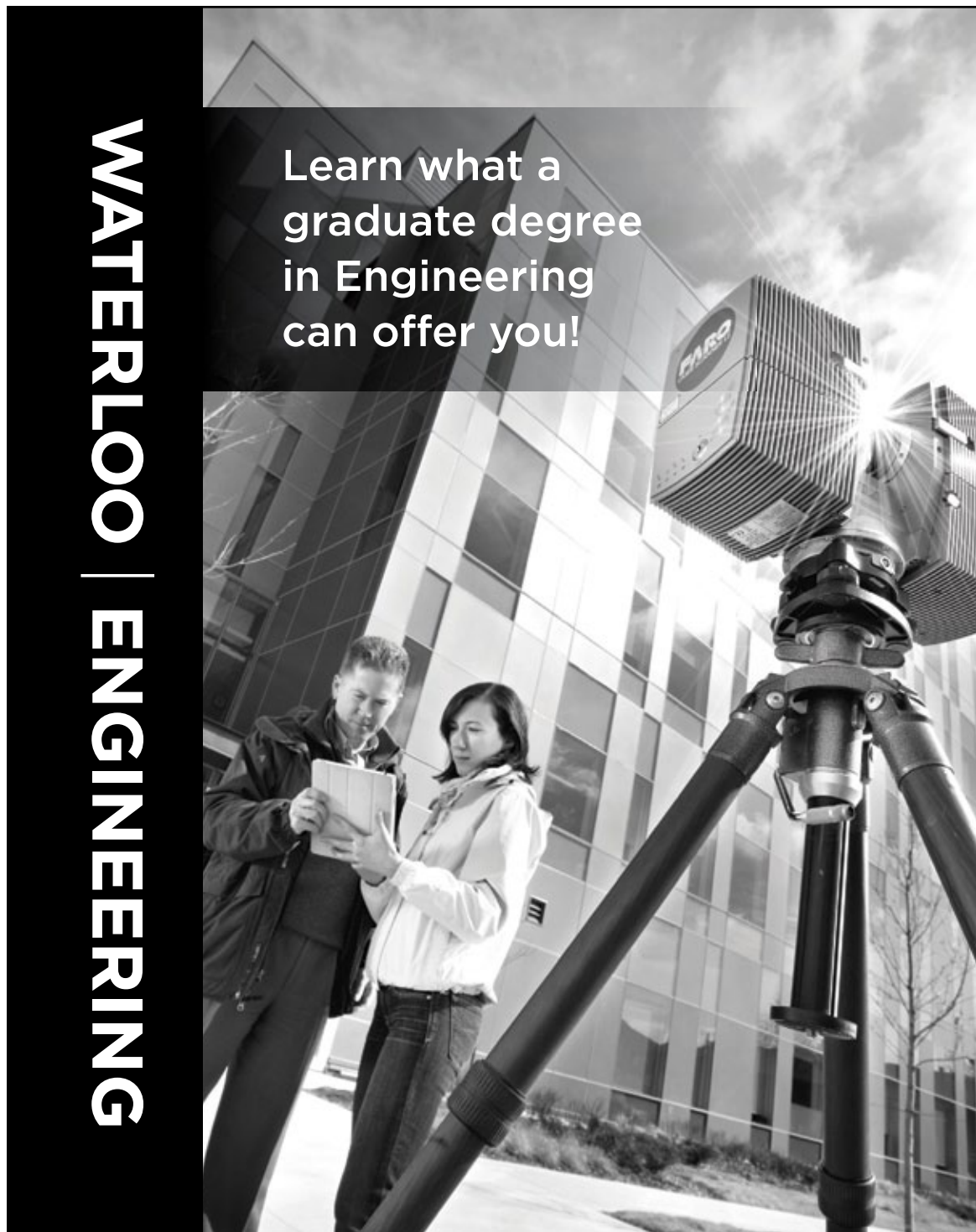
white, women, and neglected the equality struggle for different ages, races, classes, and less formally educated perspectives. As a society, in Canada, the intentions were lost and feminism became a reactionary movement, opposing rather than defending. Demands for equal wage and equal opportunity in the workplace have been perceived as a complete loss in the 60's and 70's.

These demands threatened the jobs and pay of existing employees, and the peaceful motion that was once thought of as equality became an attack on a way of life that had existed for centuries. It seemed that all good intentions were lost, and that anyone who called themselves a feminist would be shunned.

A time of slow progress and passive battle began. Most feminist causes renamed themselves as post-feminists, hoping to erase the negative connotation it had received, in order to advance. Not until the 90's did the third wave of feminism emerge. This wave is shaped by the questioning of the fundamental pillars of gender in societies all around the globe. A wide range of opinions exist on women's sexuality, social conditioning, gender roles and how to solve such a wide range of issues. Feminism shifted towards a concern for the way young boys are moulded and began treating micro issues from

their source rather than their symptom. The literature that our society grounds itself in, from Aristotle, to Machiavelli, to Martin Luther, was de-constructed and criticized for teaching patriarchal values. Concern for all people actively began. But mixed views and goals only tore the group further, crippling the term feminism to the general public and to young girls like myself.

It wasn't until I realized that these issues were affecting me and that the further I grew from a child to a woman the larger these problems would become. I had never considered that I would be explicitly told not to enroll in engineering by my peers because of my gender. The protection of bodily integrity became an active pursuit in my life, not knowing if it was worse to be named a tease or a slut. The more I learned about victim blaming, the more scared I was to walk on the street and the more I reflected on my twelve year old friends going on diets, the more I never wanted to have children. Life experience was harnessing my ambition and it became clear that this was no one person's fault. The blame could not be put on any group of individuals. Feminism is about pushing the world in the direction we want to go rather than backlashing against what has been done in the past. It is about the creation of opportunity, the protection of people, and the integrity of equality. Regardless of the size of each these problem, ranging from my enrollment in an engineering program to the sex trafficking across the world from me, this push for an equal environment is one that deserves an untainted and fully understood name.

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UW Robotics Competition



ANJIDA SRIPONGWORAKUL
3A MANAGEMENT

And...GO! The University had the pleasure to host the FIRST Lego West Ontario Championships on Saturday, January 11, 2014.

For Inspiration and Recognition of Science and Technology (FIRST), a non-profit organization, was founded in 1989 by inventor Dean Kamen to boost young people's interest in science and technology. FIRST's FLL (FIRST Lego League)

allows 9-14 year-olds to apply science and technology concepts and to work as a team under a coach to design, build, test, and program robots with Lego's Mindstorms to face themed challenges. This year's theme was Nature's Fury. FLL's top 10% in Western Ontario, 42 teams of students, had each prepared robots to brave obstacles and undergo rescue missions related to natural disasters. The competition was held at both MC and PAC. In MC teams of candidates were judged on three FLL categories of Project, Design, and Values. While PAC was where teams' robots competed and they displayed information on their teams and robots in their pits.

The candidates had a full, fun day learning from each others pits, working in teams, and competing in Robot Games. The competition was fueled by the energy and enthusiasm of the lovely, talented candidates and their coaches.

At the end of the day, the KIN-nects, a team from Oakville, took home the Champions' Award, 1st Place. Teams were also awarded in other categories such as Innovation and Strategy, Teamwork, and Programming.

Here's to next year's theme: Learning Unleashed, and to the growth of young talent in engineering, science and technology.

Smartwear The Next Tech Revolution?



CAMERON SOLTYS
1B MECHANICAL

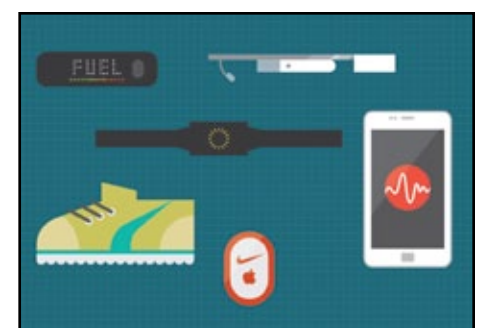
The technology industry is a fast paced, ever changing industry. One only needs to look as far as Blackberry—named Fortune Magazine's "Worlds Fastest Growing Company" in 2009—to see how quickly the titans can fall. Staying on top means being the first to exploit new technology and capitalize on consumer trends. Based on what was showcased at the recent Consumer Electronics Show (CES) quite a few companies have placed their bets on Smartwear.

Smartwear is the name given to a new group of technologies and products which integrate intelligent electronic devices into objects which consumers already carry on them. Currently most Smartwear comes in the form of watches and wristbands, but Google has taken on a far more daring project with their head-mounted computer Google Glass.

Most Smartwear which is available, or soon to be available, to the public is not very useful itself, but instead acts as a peripheral for a smartphone. This is not an unexpected or disagreeable choice; using your phone as the brain and screen for Smartwear helps keep cost, weight and size down. Considering the ubiquity of smartphones in modern society and their incessantly increasing importance in our lives this is not a trend which is likely to end.

At last year's CES, Fitbit—a site dedicated to helping people lead more active lives—displayed the Fitbit Flex, a \$100 bracelet which tracked a persons' workouts, calorie burning and sleep data. This year Sony showed off their Smartband, a bracelet much like the Flex, but boasting the more impressive ability to "Log Your Life." The Smartband tracks physical activity and sleep patterns just like the Flex but also keeps tabs on how you communicate with others, vibrates when your phone gets a call, and acts as a "Media Control" capable of changing your phone's volume or which song is playing.

Google Glass goes even further, offering itself not as a sensor for your phone, but as an alternate interface. While your phone is still needed for getting cellular internet and receiving texts or phone calls, Glass's heads-up-display allows you to tweet, Facebook, check email, take photos and browse the net hands free. But this is probably just a taste of what is to come. As computer electronics continue to get cheaper and Smartwear more mainstream, it is only a matter of time until other articles of clothing and accessories get a "smart" revamp.



utest.com

Google Glass, Smartband and Fitbit Flex are just the beginning of the Smartwear era.



Anjida Sripongworakul

42 teams filled the PAC on January 11 to compete in the FIRST Lego West Ontario Championships

Scientists Discover Man-Made Radiation in Upper Atmosphere



CAMERON SOLTYS
1B MECHANICAL

A team of Swiss scientists have published a paper in the scientific journal Nature Communications which shows that the stratosphere above Earth contains high levels of the radioisotopes caesium and plutonium as a result of human activities. Their findings come after atmospheric samples taken in 2010—intended to analyze the emissions of the then-erupting Icelandic volcano Eyjafjallajökull—were found to contain high concentrations of plutonium.

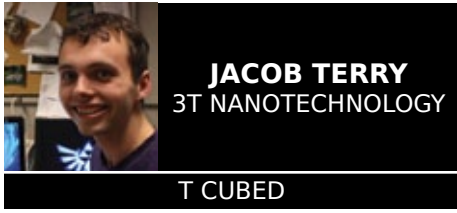
By analyzing other atmospheric samples taken from above Switzerland since 1970 and comparing the levels of caesium and plutonium, the team determined that the plutonium was deposited into the atmosphere between 1964 and 1982. This led the scientists to conclude that these radioisotopes are the result of "atmospheric nuclear testing in the 1950s and early 1960s" and the failed launch of a NASA satellite which used a plutonium-fueled thermionic generator for energy.

In the lower atmosphere the debris from atmospheric nuclear tests are quickly brought back to Earth by precipitation and gravity. Tests done in the 1960s and 1970s suggested that the debris which made it to the upper atmosphere only

remained for one to four years, but this new evidence shows that the amount of material in the upper atmosphere is much higher than expected.

While the concentration of plutonium is up to 1 500 times greater in the upper atmosphere than the lower atmosphere, the scientists say that there is no cause for concern. As the lead author of the paper, Dr. Jose Corcho Alvarado stresses "it is important to say that this is not dangerous for the population." In fact, the paper suggests that this discovery could actually be quite useful; the scientists hope their discovery will allow others to use the radioisotopes as markers to learn more about the movement of particles in the upper atmosphere.

Portability, Immersion and Games at CES 2014 and Beyond



The annual Consumer Electronics Show (CES) is one of the only times each year where one gets a peek at some of the more experimental and untested technologies under development in the technology industry. There is always an overwhelming number of demos and products shown during the show, but an interesting trend among the more popular concepts demonstrated was the increasingly compact devices designed for newer applications in portable environments, which aim to expand our perspectives on how consumer electronics principles can be applied to other industries and new concepts.

One of the familiar portable technologies last year was the Pebble smartwatch, which gained popularity in 2012 after a successful Kickstarter campaign. This year, it was announced that it now has a new family member in the Pebble Steel, a smartwatch from Pebble designed to appeal better to traditional watch-wearers. The Pebble Steel has a traditional metallic watchband instead of the plastic one, and a metallic casing for the screen, which allows for potential use in more professional environments than the low-end model, while still retaining the same e-ink display, operating system, and battery to allow for easier app development. It has received some varied initial opinions, as the price tag is \$100 more than the original model and some feel it is not yet competing with the quality of nicer wristwatches, but many feel it is a good start in beginning to develop smart watches

that are attractive and fashionable.

Pebble was started by Waterloo graduate Eric Migicovsky (Systems Design '09), and there was more Waterloo representation at CES as founders Stephen Lake and Aaron Grant (Mechatronics '12) of Thalmic Labs were able to attend and demonstrate their Myo gesture control armband, which will be shipping its first round of units early this year. While much of the functionality has been previewed at previous events, the event gave Thalmic the opportunity to show their device directly to technology media outlets like Engadget, and had a demonstration available where attendees could control a hovering robot with the Myo in a controlled environment. It has been exciting to watch how the Myo develops over time, and see the rise of a homegrown startup.

Along with Myo, the other big immersive wearable technology covered at the show was Oculus's new prototype of the Oculus Rift, named Crystal Cove, which received awards from many technology sites. The original Oculus Rift, a virtual reality headset shown last year at CES and released to developers, was an impressive demonstration of what was possible with virtual reality. It had limitations in that the view inside the headset had a mesh covering the screen, which took the viewer out of the intended immersion, and was hard to handle for long periods of time. In Crystal Cove, the meshing between elements of the screen has been diminished greatly, allowing for much greater immersion, and Oculus has attempted to reduce some of the blur when turning, so the view inside is easier to stomach over extended use. They have also added a position-tracking element to the headset, so that it can determine where your head is moving and reflect that in the

environment. Interestingly, Oculus notes in an interview with The Verge that while gamepad use is the current method for moving in the environment, they are hoping to allow the user to move around within the environment using full-body gestures. Potentially a collaboration with Thalmic to use the Myo as the limb component of the Oculus Rift environment is something they could look into in the future to improve immersion in the headset further.

Oculus does have a new partnership with Valve, who showed off their highly-anticipated Steam Machines with their partners at the show, and is looking to disrupt the gaming PC market with their new controller-based living room computers. Valve has been starting to pump out a lot of hardware in the last few weeks, but rumours of a virtual-reality system from Valve were subsided with news that Valve was sharing the information they were researching with Oculus as part of a collaboration. On the Crystal Cove prototype, Valve specifically contributed some of their position-tracking information to the system, as part of a collaboration it hopes will make it simpler to support virtual-reality modes in PC games. There is already a mode in Steam that can be enabled for experimental purposes that supports the Oculus Rift, so the Oculus Rift may have some serious support. It would just remain for developers to support it apart from just Valve, which leaves it with questionable future support. Valve's attempts to bring Steam to Mac, and now to Linux in preparation for SteamOS, have lacked much support outside of Valve's own games, but Oculus might have a tighter following of gamers that could warrant the support of the headset in more games on Steam.

On Valve's Steam Machines, many have

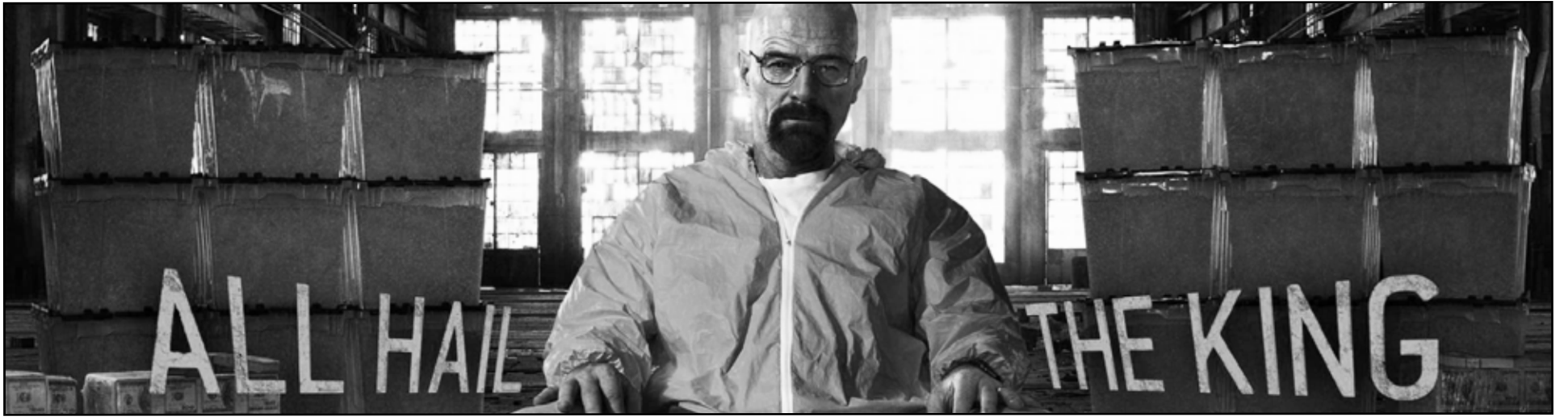
commented that the new platform is primarily intended to compete with consoles. An alternative way to see Valve's marketing position is as a way to convert gamers and developers to Linux (primarily SteamOS in this case) as a way for ensuring their own relevance. Microsoft and Apple have made inroads in encouraging their own gaming networks through Xbox Live and Game Center, and are hoping to push this further on their desktop operating systems after achieving some level of success on their other platforms. Gabe Newell, who leads Valve, has noted that the future of Steam is in SteamOS and Linux, but making a sudden shift to Linux may be challenging as developers won't want to support a historically unpopular platform and gamers want to go where the games are. By focusing on the living room, they find another platform for gamers to play on that doesn't replace their gaming PC yet, and PC gamers who don't use consoles will be able to play something that fits closer to their ideal of a living room experience than those offered by Nintendo, Microsoft or Sony. One of the key features in the machines is to stream games from Windows installations of Steam to the console, which is targeted at those who already have Steam installed. As more gamers purchase Steam Machines, developers can justify porting their games to Linux, and as the game library starts to get more competitive, gamers may just switch to SteamOS for their desktop gaming PCs, helping Valve stay in the game.

It's unlikely many of us will be able to see many of these technologies as they are all in fairly initial stages, but CES is always interesting for seeing what might be big in upcoming years. Our world could be a lot more portable and immersive very soon.



Starting top-left, clockwise: Myo armband, Pebble Steel wristwatch, Oculus Rift virtual reality headset and Valve's Steam Machine.

Golden Globes Highlights



Bryan Cranston: King of *Breaking Bad* and the Golden Globes

AMC



**ANJIDA
SRIPONGWORAKUL**
3A MANAGEMENT

"It's basically the story of how George Clooney would rather float away into space and die than spend one more minute with a woman his own age." Tina Fey's one-line jab at *Gravity*'s leading actor was one of the highlights of 71st Golden Globes on January 12, 2014, a night of full of surprises and unforgettable moments.

It's the Tina Fey-Amy Poehler duo's second year hosting the Globes, and they did not disappoint. The show ran for a little more than three hours with some little bumps along the way, but the hosts made sure the audience, in the room and at home, were entertained throughout. Highlights of their jokes included Poehler showing up dressed as Randy Mr. Golden Globes in a tuxedo and asking both Idris Elba and Harvey Weinstein if either were his father, Tina Fey's Michael Bay impersonation of his abrupt "can't do this" walk-out on stage blaming a teleprompter error at an event weeks earlier, and a lewd joke on supermodels and Leonardo DiCaprio that somehow had squeezed past the censors acting as an introduction for the actor.

The first shocking (or not so shocking, given the Globes' organizer, the Hollywood Foreign Press Association's favor for stars over critics' darlings) win of the night was Jennifer Lawrence, the public's favourite, taking home the Best Supporting Actress Award in Drama, for her role as *American Hustle*'s erratic housewife Rosalyn Rosenfeld. Many, myself included, argued that

newcomer Lupita Nyong'o, though fresh out of acting school, had given a powerful performance as *12 Years a Slave*'s tortured Patsey, a dutiful, hardworking slave who suffered at the hands of her brutal owners, and was far more deserving of this award. To Nyong'o's and the public's shock, however, she received the Best Supporting Actress award at Critics' Choice Movie Awards this past Thursday, January 16, 2014. There's no sure bets for the Oscars yet.

The show hit a rut when Jacqueline Bisset celebrated her win for Best Supporting Actress in a series, miniseries, or TV movie for her role as Lady Cremona in *Dancing on the Edge*, with a rambling, messy speech. The other awkward moments in the show resulted from the bizarre seating chart, which prolonged the times this year's winners, mostly seated in the back of the hall, took to reach the stage. By the time the cast of *Breaking Bad* had reached the stage to accept their well-deserved award for Best Drama, someone joked on Twitter that an episode of *Breaking Bad* had finished airing. Following the series' win, it was no less surprising, of course, when Bryan Cranston won his last *Breaking Bad* Golden Globe in Best Leading Actor in Drama for portraying the series' lead as chemistry teacher turned meth dealer Walter White. Robin Wright won the counterpart award in Drama for her role as Claire Underwood in *House of Cards*, leaving many fans disappointed that the *Orphan Black* talent, Tatiana Maslany, who had portrayed multiple clones on the show, each with a different personality and looks, should at least have a chance.

The true highlights of the night were the unexpected winners. The actor stepping up

to receive his Best Leading Actor in a Comedy/Musical award was none other than Leonardo DiCaprio, the public's and Hollywood's long mocked "always the bridesmaid, never the bride." DiCaprio, who had up until that point, often been nominated but had never won an award, received his first Globe for his role as Jordan Belfort in *The Wolf of Wall Street*. With a huge grin, pointing out the absurdity of the films categorized as Musical/Comedy in this year's Globes, DiCaprio thanked his fellow "comedians," Christian Bale (*American Hustle*), Bruce Dern (*Nebraska*), Oscar Issac (*Inside Llewyn Davis*), and Joaquin Phoenix (*her*) in his speech. The films featuring those actors, though some could be called a musical, at most loosely fit into the definition of "Comedy." Backstage, DiCaprio praised his Wolf director, Martin Scorsese, proud that he is "still this punk rock...at 71 years old...there's no one like him." Amy Adams, DiCaprio's female counterpart, the four time Oscar-nominated actress, received her first Globe that night for her role as Christian Bale's con partner, Sydney Prosser, in *American Hustle*, in a race against Oscar favorite, Meryl Streep (*August: Osage County*) and first time-nominee Julie Delpy (*Before Midnight*). Adams ended her tearful acceptance speech with a determined "You cannot play me out for talking about my daughter," taking time to pay tribute to her young daughter, Aviana. Amy Poehler, the host herself, won a Best Actress in a Comedy award for her role as *Parks and Recreation*'s Leslie Knope, to the public's glee, since she had never won before. To her win, Tina Fey replied, "I love you! There's a special place in hell for you!" in a not-so-subtle reference to the

Taylor Swift-related drama they were both involved in at last year's Golden Globes.

The expected winners followed. *Dallas Buyers' Club*'s Matthew McConaughey announced his comeback, loud and clear, with "All right, all right, all right," harking back to his days as a stoner in *Dazed and Confused*, as he received his Best Leading Actor award in Drama. His year of playing characters in a series of dark, dramatic films from *Mud*, *Killer Joe*, to *Dallas Buyers' Club*, rather than his usual streak of muscle flexing, romantic comedy heroes, had finally paid off. From the same film was Jared Leto, lead singer of the rock band 30 Seconds to Mars and occasional actor. Leto's been absent from films for six years when the script for *Dallas Buyers' Club*'s transsexual AIDS patient, Rayon, came his way. He thanked "the Rayons of the world," for inspiration before he left the stage, his Globe in hand. A similarly guaranteed win was Cate Blanchett's Best Leading Actress in a Drama award for her role as the modernized Blanche DuBois, a la *Streetcar Named Desire*, in Woody Allen's enjoyable *Blue Jasmine*. Blanchett turned in a spectacular performance, and it was unimaginable that the Globe should go to anyone else. Spike Jonze won a much deserving Best Screenplay award for his heart-wrenching, all-too-real *her*, a film about what it means to fall in love, about human relationships, and disconnectedness in our digitized time and age. Alfonso Cuarón received an undisputed Best Director nod for his work in the space epic, *Gravity*.

While *American Hustle*, a tangled, flashy web of flatly written characters playing each other in a storyline based on the Abscam scandal, received Best Motion Picture - Comedy/Musical, it was *12 Years a Slave* that took home the last award of the night, Best Motion Picture - Drama. The film, a moving account of slavery in antebellum United States, told its story through moments and scenes that haunt the audience's minds even after the credits roll.

This year's Golden Globes was best summed up in Tina Fey's closing words, "a beautiful mess we hoped it would be."

Oscar nominations, released this past Thursday, January 16, 2014, indicated that it is going to be an *American Hustle* vs. *Gravity* vs. *12 Years a Slave* kind of race. An honorable mention, a personal favorite of mine, a film snubbed by the Academy in all categories but two (Cinematography and Sound Mixing), is *Inside Llewyn Davis*, the Coen Brothers' musical story of a struggling folk singer, Llewyn Davis, starring the soulful Oscar Isaac in the titular role. Set in a 1960's Greenwich Village scene with eccentric characters and one stand-out performance of the year by a cat, this is the one film you shouldn't miss, Oscar-nominated or not.

The awards season is just beginning. Come March, we'll see if the unexpected triumphs over the expected at its finale, the Oscars.

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The Warrior Food Review: The New Honey in Town



SABRINA LI
3B ENVIRONMENT

THE WARRIOR FOOD REVIEW

Co-op has spoiled me with desserts. Back in Waterloo, I was looking for a dessert place on Yelp and came across this little gem. Honey Bake Shop is a fairly new pastry shop in Uptown Waterloo. It's hard to miss the store decorated with the retro mosaic banner. The store is well lit and looks a lot bigger from the outside, but inside is definitely a lot more limited. It wasn't busy on a Sunday afternoon and I got to pick where I wanted to sit.

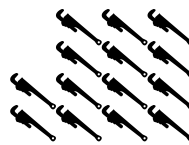
Apparently on weekends the selection is smaller than on weekdays. The shop carries its own handmade French macarons, however there were only two flavours available that day. They also had a variety of traditional and unique flavoured cupcakes

and in-store made gelato. Near the front display there were packaged pastry goods such as biscotties and cookies. Everything was vividly packaged and neatly decorated. Of course you can never judge a book by its cover, but let's admit we all do it – I wanted to try everything but unfortunately I didn't end up doing that. After much debate, I ended up getting a raspberry champagne cupcake and a blueberry macaron. The cupcake had a unique flavour, was moist and had just the right amount of icing and cake. I am not about sugar overdose and this cake was definitely not as sweet as your typical supermarket cupcake. I was slightly disappointed with the macarons. They were handmade in store, soft and flaky, but lacked the flavour and moisture. My friend liked them so maybe I'm just being picky.

You are probably looking at spending around \$2 for a cupcake and macarons and about \$2-\$10 on other packaged pastry goods. Stars are overrated so I will use

the iron TOOL instead. With five TOOLS representing the perfect score, here are my ratings:

Price
Selection
Environment
Service:



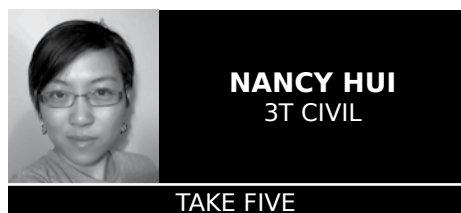
Suitable for: Groups of two to four people



Delicious treats from Honey Bake Shop

Sabrina Li

Take 5: Bird Brains



NANCY HUI
3T CIVIL

TAKE FIVE

When I was a kid in the late 90s, I was really into the *Animorphs* series by K.A. Applegate. It's a young-adult sci-fi series about teenagers who gain the power to morph into animals, and use it to fend off an invasion of parasitic, mind-controlling aliens. I imagined having the power to transform myself, and thought that the first animal whose DNA I'd assimilate into myself would be that of a bird, because I wanted to fly.

Here's five movies about birds, ordered by how much I enjoyed them.

Valiant (2005)

Valiant (Ewan McGregor) is a small wood pigeon with heroic aspirations to become a war messenger in 1944 Britain. However, his first mission is beset by difficulty in the form of General Von Talon (Tim Curry), a German falcon.

In *Mass Effect 2*, if you played FemShep and attempted to romance Garrus, you might have noticed that Bioware had difficulty animating turian-human kisses, since turians don't have lips. Displaying romantic interactions involving species without lips is a long-standing problem in animation, to which *Valiant* is not immune. I spent 76 minutes watching pigeon antics just for the emotional payoff of one, zoomed-out, peacetime pigeon kiss involving the only female pigeon who was not the protagonist's mother. The rest of *Valiant* was a wasteful execution of the premise: it's a war movie but we are never shown the tactical significance of the message Valiant carries. Is it a supplies requisition? A command to attack? A command to retreat? The pigeons sure don't know either. You should only watch this movie if you love McGregor's voice, you love pigeons, or you appreciate undemanding and formulaic plots. This is yet another movie where



the noble members of class Aves are the butt of many awful, children's movies, including but not limited to *Happy Feet*, *Happy Feet II*, *Surf's Up* and *Free Birds*.

Chicken Little (2005)

After his infamous overreaction to the Acorn Incident of 2004, Chicken Little (Zach Braff) is ostracized by everyone in Oakey Oaks, except fellow misfits Abby Mallard (Joan Cusack), Runt of the Litter (Steve Zahn), and Fish Out of Water (Dan Molina). Then pieces of the sky start falling again. Cue the Adele.

Well, uh, *Chicken Little* is more entertaining than *Valiant*, which doesn't say much. It better exploits the avian personality characteristics of its digital actors, and its skimpy storyline is backed by fairytale backstories. And there are some cute touches, such as the employment of chameleons as traffic signals. However I felt like I was watching a neutered version of *Shrek* that substituted preschool-friendly fable characters into roles that previously required a modicum of psychological darkness and character flaws that are more than punchlines. *Chicken Little* doesn't work because there isn't any emotional consequence or substantial humour to the follies of this cast of PG animals.

The Birds (1963)

Melanie Daniels (Tippi Hedren) meets prankster Mitch Brenner (Rod Taylor) while he is looking for lovebirds in a pet store. Intrigued and infuriated by their encounter, she visits his hometown of Bodega Bay. The town is then attacked by birds.

After having watched *Rear Window* I had high hopes for *The Birds*, but the birds are about as menacing as the professional squirrels from *Charlie and the Chocolate Factory*, and much less coordinated. Although Hitchcock fills his frames with feathered fiends, they are surprisingly ineffective at attacking anything. Sure, they get in everyone's hair and occasionally nip at exposed skin, but only a few attack at a time. It would have been much more effective for Hitchcock to have his seagull puppets dive-bomb the humans, kamikaze-style. There is one terrific discovery of a neighbour's body with his eyes pecked

out, but it seems that this birdocalypse could be overcome by wearing goggles and strong denim. Without any sense of danger, the carefully composed suspense falls flat.

March of the Penguins (2005)

Emperor penguins breed inland, to lay their eggs where the ice is the most solid. However their ancestral breeding grounds are 100 kilometres from the sea during the Antarctic winter, requiring the parents to alternately protect the eggs in -62 C temperatures and journey to the sea to hunt fish.

While watching this Oscar-winning documentary, I began feeling extremely inadequate. If faced with starvation whilst incubating an egg in blistering cold, and walking 100 kilometres to the sea to eat sushi, I think I'd probably die. Forget peregrine falcons, paranoid chickens, and monkey-eating eagles; through evolution, emperor penguins alone have conquered their icy domain and proven themselves the fiercest of avians.

The Black Swan (2010)

Nina (Natalie Portman) is a technically accomplished ballet dancer cast in the dual roles of the innocent White Swan and the seductive Black Swan. However, the director (Vincent Cassel) is unconvinced that Nina can embody the sensuality of the Black Swan, unlike her rival, Lily (Mila Kunis).

This Darren Aronofsky film explores the Madonna-whore complex in the contexts of identity and dissociation in the context an extremely effective and disturbing way. Physically, there are eyes going orange and legs bending the wrong way. Emotionally, there's a girl cracking violently under stress. You know how they recommend acting loudly, erratically (e.g. scuttling sideways like a crab and screaming) in prison or robbery situations to deter conflict? Acting unpredictably is a deterrence to others to engage you in conflict. Anyways, Nina's transformation into the Black Swan is properly terrifying without being explicit, unlike the gratuitous sex.

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The Curious Case of the Toronto Raptors



RONAUQ SABHARWAL
3B ENVIRONMENTAL

Before this season, the Toronto Raptors were one of the most intriguing teams in the NBA. They were at crossroads between winning now or tanking for Andrew Wiggins (a fan favourite and Toronto native) or another highly touted prospect from the 2014 Draft Class. The Raptors had just fired Bryan Colangelo, the GM that blessed T-dot with the ridiculous contracts of Andrea “Primo Pasta” Bargnani and Rudy “Black Hole” Gay. To replace Colangelo, the Raptors brass brought in former Executive of the Year Masai Ujiri to steer the team away from the mess that Colangelo and the previous management created.

What happened next was nothing short of a miracle. Ujiri got rid of Bargnani for Marcus Camby, Steve Novak and Quentin Richardson from the New York Knicks and brought in future picks, solidifying the future of the team. The

team seemed to be building for the future but had one key player to take care of, the aforementioned Rudy “Black Hole” Gay.

In the 18 games Gay started for the Raptors, he averaged 38 per cent from the field while commanding 30 per cent of Toronto’s possessions, ending them either with a shot, turnover or drawn foul. Only three players in the league history have used more than 30 per cent of their team’s possession and shot less than 40 per cent. In a league obsessed with player efficiency rating, Gay is an abomination, especially with his \$19 million salary.

The Raptors were 7-11 when the Gay trade happened, which gave every Raptors fan a reason to rejoice for more than one reason. Firstly, the Raptors were getting rid of the black hole that sucked the life out of offensive possessions and bricked enough shots to fund the renovation of Biology 1. Secondly, the Raptors were bringing in four solid rotation guys in Patrick Patterson, Chuck Hayes, Greivis Vasquez, and John Salmons, which would immediately strengthen the team’s depth at point guard and at

the forward position. Thirdly, from a fan’s perspective, it seemed that the team was waving the white flag on the season and was going to try the “Riggin’ for Wiggins” strategy, in other words basically purposely tanking for the much wanted future pro.

Then the Raptors surprised everybody and went 12-6 for the next 18 games, including wins over high powered teams Oklahoma City, Brooklyn, and Indy and a hard fought loss against the defending two time champions Miami Heat on their home court. Now sitting on top of the Atlantic Division, the Raptors are ranked third in the Eastern Conference. Their ascension to the top has more to do with the rest of the Eastern Conference self-combusting rather than their impressive play but even the most optimistic fans (including the Global Ambassador Drake) couldn’t have seen this turnaround coming.

Toronto has scored 105.8 points per 100 possessions since dealing Gay, nearly five points better than it managed with a Rudy-centric offence. Toronto is flinging the ball from side to side, one

pick-and-roll bleeding into the next on the opposite wing and bending opposing defenses until an opening emerges. The Raptors are passing the ball 30 more times and shooting three times more per game — an intended benefit of replacing Gay in the starting lineup with Terrence Ross.

The Raptors have passed the eye test (they are fun to watch again and genuinely like playing with one another) and their coach, Dwayne Casey, reigning Coach of the Month, has developed a game plan to let the younger players, Jonas Valanciunas and Terrance Ross, play with intensity both defensively and offensively. The team is playing with a new found intensity and could cause headaches for other teams, come playoffs time. The Raptors are nowhere close to a championship contender but the transformation over one season gives the fans and the city reason to believe. The team that started the season at a crossroads with its identity, seemed to have found it. As Aubrey “Drake The Global Ambassador” Graham would say, “Started from the bottom, now we here.”

Winterize Your Commute!

Ice and Corrosion Present Greatest Danger to Winter Bikers



KEVIN LIANG
4B CHEMICAL

BIKE SAFETY

As the days grow colder, the likelihood of hopping back on your bike seems to dwindle with each passing morning. The dark and cold, followed by poor road conditions would quickly turn any sane person towards a bus stop. But there are those of us out there that enjoy the added challenge of biking in the winter. Sure, it takes ten minutes to get dressed in the morning, but there is no other feeling like that brief moment of riding over a patch of black ice balanced on two wheels. I feel vulnerable to small stimuli; a slight breeze will knock me over, a small surge in my pedal stroke will cause my back end to spin out. This is a feeling that I sometimes chase. Other times, I just want to make it home in one piece.

Snow is not much of a concern. I actually seek untracked snow for

added grip. Ice, however, is not your friend. Morning melt is a sure sign of icy conditions in the evening. It’s important to brake early and slow down when cornering. The slightest lateral tilt can cause your bike to slip out from underneath you on especially icy roads. Keeping your bike vertical will help you stay balanced. If you want to feel more comfortable on the road, studded tires can greatly improve your traction on ice. Some people have never needed to use them, others swear by them. It comes down to personal preference and the conditions of your route. They are expensive starting at \$60 each for a base model. If you chose to get only one, it is recommended to put on the front wheel. If your rear tire slips, you can usually recover, but if the front wheel slips out from under you, you are almost guaranteed to go down.

The cold weather will affect your bike just as much as your body. Metal brake cables tighten up in the cold resulting in reduced braking power and responsiveness. Every time you hop on

your bike, make sure to give your brakes a test to get a feel of its responsiveness so you don’t caught off guard when you really need them. If you have rim brakes, you want to make sure that there isn’t any sand or grit on the brake shoes. This can wear out your rims prematurely. Especially in wet conditions, some brakes can produce a loud screeching sound. This is probably okay. If you can still brake hard enough to lock up the wheels there shouldn’t be a problem. If this cannot be achieved, then your brakes will need an adjustment. Just like how wet shoes will squeal on certain surfaces, some wet brakes will squeal.

Snow, salt, and ice accumulating on your frame and drivetrain will quickly cause corrosion if it is not properly looked after. It’s important to give your bike a quick cleaning after every snowy ride. Keep a soft brush by your door and brush off snow, salt, and ice from the underside of your down tube and underneath your bottom bracket. In addition, make sure to rid any buildup of debris from the derailleurs. You should

also be applying lube to the chain once or twice a week to make sure everything is rolling smoothly and reduce the wear on the cogs. Lube only needs to be applied to the rollers in between the links so removing the excess on the side of the chain with a paper towel will reduce the amount of grit buildup on the drivetrain. Even more important than any of this is to keep your bike inside when it’s not in use.

A winter of riding will wear down your bike at a quick rate. For this reason many winter commuters get a cheap winter beater bike. Even with one of those you will still need to be seen on the road. During the winter, it’s near impossible to not bike in the dark. Having a good pair of bike lights will not only improve your visibility on the road, it’s also the law.

If this is your first winter of commuting, know that you are not alone. The sight of those other tracks in the snow ahead of you is a constant reminder that others have endured the same hardships. And as you leave your own tracks, it’s a reminder to others to keep pedalling.

WORK REPORTS

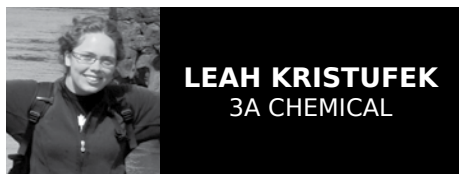
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2013: Your World In Review



LEAH KRISTUFEK
3A CHEMICAL

Between the antics of Mayor Rob Ford, the senate scandal and the British government decision to have default porn filters installed by internet providers, 2013 was arguably the year of bad politics. Beyond the political theatrics, the insecurity of national security was probably the biggest issue on peoples' minds. Edward Snowden disclosed classified NSA documents to news agencies worldwide about American surveillance across the world, and more importantly, in their own backyard. Finally, let's not forget the tragedies and bizarre weather that pushed the limit of Canadian disaster preparedness. This, is 2013 in review.

Bad Politics

"I do not use crack cocaine nor am I an addict of crack cocaine." This was the initial response of Toronto mayor Rob Ford when a video of him smoking crack cocaine was first reported by the *Toronto Star*. His sister rose to the occasion confirming that, "Robbie's not a drug addict... I know because I'm a former addict." However, her dear brother Robbie was eventually caught in his lie; police gained access to the original video and Rob Ford has since had his responsibilities considerably decreased. But bad Canadian politics doesn't stop there; 2013 saw Stephen Harper's (now former) Chief of Staff, Nigel Wright, reach out to interfere with the audit of Senator Mike Duffy's expenses. The senator, along with two of his colleagues, was in trouble for questionable expenses. Nigel Wright increased the furor when he wrote a cheque for more than \$90 000 to repay Duffy's questionable housing expenses. These actions, along with a number of lost emails with regard to the scandal, seriously call in to question the accountability of our government. At least they didn't feel the need to place filters on our home computers like British Prime Minister David Cameron. Filters to "block hardcore legal pornography" were in place by mid November amid controversy that they would also potentially block access to important sites. There are fears that the filters will prevent access to benign sites, such as those with information on LGBT lifestyles (lesbian, gay, bisexual and transgendered) and abortion, thus decreasing freedom of

information.

Security

In a sensational leak, NSA documents were released to worldwide media raising fears of surveillance in our own neighbourhoods by our own people. The infamous Edward Snowden saga continues to play out, with debates in the US surrounding his amnesty; so far the White House refuses to budge as Snowden remains in asylum in Russia. It would seem that no one is safe from being surveilled. With the continuing interconnectivity of our devices, many of us tied to our devices for everything from personal communication to banking are providing a wealth of data to be mined by interested agencies. Personal freedoms and security will continue to be an issue well into the future.

In the non-digital world, Canada continues to wait for replacement Sea King Helicopters. Named "The worst procurement in the history of Canada" by Defense Minister Peter MacKay, efforts to procure helicopters has been ongoing since 1990. Progress has been delayed endlessly by red tape and conflicting requirements.

Tragedies

April 24, 2013 marks the occurrence of a completely preventable tragedy that took over 1 000 lives. The collapse of Rana Plaza in the capitol of Bangladesh tore a hole in the complacency of western consumers...or did it? While work conditions in Bangladesh have not made an immediate leap towards improvement, big retailers, including Loblaw's, have signed a pact promising to properly inspect their manufacturing facilities. In October workers were given three months worth of wages in compensation for their loss of work. An estimated 550 people are eligible for long term compensation. It remains to be seen if better regulation by a few big retailers will result in wide spread changes.

On July 6, 2013 an unmanned train derailed in the Quebec town of Lac-Mégantic, decimating the downtown and killing 47 people. The disaster brought attention to a lack of transparency in how cargo is transported in Canada, as well as inconsistencies in railway company book keeping. The train at the center of the tragedy was parked for the night when it lost break power and set off down the slope eventually derailling in the quiet Quebec town. Cargo trains now require more than one engineer

for all trips and tank car trains with regulated commodities will no longer be left unattended on a main line. This tragic accident further fuels the debate whether transporting oil in pipe lines or by rail is the safer thing to do.

On August 21, 2013 the civil war in Syria reached new levels of atrocity when chemical weapons were dropped on highly populated cities. It is estimated that more than 1 300 civilians, including children, were killed in an attack on Ghouta, a region of Damascus, one of five areas hit by chemical weapons according to the UN. Several other locations have reported unconfirmed chemical

for first responders. Despite substantial water-log in the city, the Calgary Stampede went on relatively unabated, hosting more than a million visitors only weeks after the flooding. T-shirts carrying the slogan "Hell or High Water" were sold, successfully raising \$2.1 million for the Canadian Red Cross to support flood relief efforts.

Around the same time, on July 8th, Toronto was hit by a flash flood that dumped a record 126 mm of rain on Pearson Airport and stranded commuters. Astonishing photos from the event show Go Train passengers being rescued by boat, and commuters on



Ron Bulovs

The aftermath of the icestorm that ravaged the GTA

weapons attacks. The chemical Sarin was used. It is a nerve agent with the ability in high doses to paralyse the lungs of victims and is classified as a weapon of mass destruction. Chemical weapons attacks are only the latest terror in a conflict that has so far taken over | 100 000 lives.

Wild Weather

Precipitation everywhere! On June 20, 2013, flooding in Calgary reached disastrous proportions. 32 states of emergency were announced and over 100 000 people were evacuated. The Calgary Police Service kept people informed over Twitter, at one point even exceeding the maximum daily limit for tweets which caused them to be blocked. The use of Twitter during the flood has earned the Calgary Police Service an award for social media event management and caused Twitter to re-evaluate their policies

the Don Valley Parkway escaping their submerged cars through opened windows. Power outages were widespread but power was restored quickly. The same cannot be said for GTA residents and others across Canada in the wake the ice storm that began December 21. Despite nonstop efforts by Hydro Crews, many residents didn't get back online until early 2014. Costs for the ice storm are around \$250 million for the GTA region.

In a sunnier climate, Typhoon Haiyan made landfall in the Philippines on November 8. The storm is the strongest storm ever recorded at landfall. The body count is currently at approximately 6 201 dead although bodies are still being recovered. Lines of communication continue to be down and infrastructure in many regions has been completely decimated.

This has been your 2013 in review ladies and gents. Here's to a better 2014.



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The John Fisher Award and Roy Duxbury Award for Leadership are given to undergraduate students graduating in the Faculty of Engineering who have shown outstanding leadership throughout his or her academic career in activities that relate to Co-operative Engineering Education.

Nominations for these awards can originate from student groups, faculty members, or other individuals. 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 April 1, 2014.

The John Fisher and Roy Duxbury Awards consist of a Certificate plus a citation and an honorarium of \$2,000. The awards have been named in recognition of the outstanding contributions made toward SFF by its former Chairs, Dr. John Fisher & Dr. Roy Duxbury.

Nominations Must be Submitted to SFF Office Manager by April 1, 2014

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

TOP Wayz to Set Up Your Online Dating Profile



**WADE WILSON &
EDWARD BLAKE**
4Z HANDSOMENESS

It's 2014, and although this milestone has been declared every year for the past two decades, we are now comfortable raising the banner over the helicARRIER and calling it: online dating is officially socially acceptable. The only problem left is that as a reader of *The Iron Warrior*, in all likelihood you are not socially acceptable. Rest assured though, your boyz at Topz (with a Z) got you covered. We've been cyber-dating for years now and know how to get from the tubes to the lube. Yes, just follow our handy guide and you'll be showing off your peacock in no time.

Choose the Perfect Profile Photos

Just like in real-life dating, online the first filter is your peepers. You can judge a lot about a book by its cover: whether they're sensitive, how popular they are, how big their package is, and if they're likely to put out. As such, your job is to deceive people into thinking you're a viable partner. With an application like Tinder you have six chances, but with others you get fewer so you need to be crafty. The following are some marks you have to hit. Show that you are friendly and cuddly like babies and/or animals, by cuddling with babies and/or animals. Nothing says, "I may be a douchebag, but I have a heart of gold" more than having a cuddly little puppy snuggling up with a shirtless Abercrombie & Fitch wannabe. Be warned though, Wade Wilson tried this strategy once and ended up getting a visit from the federales. Now, a lot of people will tell you to show as much skin as possible. We will also tell you to show as much skin as you possibly can, after all beach albums are what keeps Facebook afloat. You also want to make sure you look your best, but we all know that you let yourself go ever

since Burger King opened. The solution is to post a photo from a few years ago when you were still attractive. Of course, if you never were attractive that's okay too. Edward Blake uses pictures of Wade Wilson on his online profiles, and accuses people who feel deceived of being racist. Racial guilt may just be the greatest seduction maneuver since pity. Finally, embrace heteronormality. Play up gender stereotypes by posting pictures of you acting like the characters on *Mad Men*. For example, Edward Blake shows his manliness through several pictures featuring athleticism, outdoorsmanship, and his penis. And remember, when you send your intimates don't be afraid to swap out your albino peacock with one of Wade Wilson's (of which there are a LOT online).

Generic Statements

Now that you have your pictures picked out, you have to actually say something about yourself. But let's face it: you aren't an interesting person. One of our favourite about-me sections read, "I can't describe myself in 500 words;" this is because the only things which set you apart are three words, two if you don't have a middle name. The following are some generic filler descriptions we actually found on Tinder just now: song lyrics (including "Tell me princess now when did you last let your heart decide.", "I'm trying to find my soulmate.", "I'm fun/nice/interesting/awesome.", "Just looking for an adventure.", "Get to know me and you'll find out who I really am.", "It's okay to let go of the past because there will always be something waiting for you in the future.", "Now accepting little spoon applications.", "Proud supporter of fun.", ";)", memes (including "much funny very laugh"), "It's the little things.", "Looks can be deceiving.", "Love [sports team].", "I value honesty above everything." "I'm random LOL ;)". In 1984, George Orwell describes an eyeless man behind opaque glasses who spouted mindless pabulum that was more



Here is Edward Blake's online profile picture, using a picture from the past, of someone else, doing something masculine.

like the quacking of a duck than the words of a conscious and thinking human. Listing books that you and literally everyone else who went to highschool in North America read to sound intelligent is another great one.

Pretend You're Above Online Dating

A lot of people still feel like online dating has a stigma associated with it. By playing into this insecurity, you are able to elevate yourself above the "online-daters" as a normal, well-adjusted person who could totally meet people in real life but are actually so successful and interesting that you have resorted to online dating services just as a matter of saving time. Feel free to make this explicit. Similarly, maybe you are just "trying it out for fun" or your "friend made this account" and of course you were powerless to stop them and not use the service. And just to send home that the other party should be ashamed of them-

selves for online-dating, be sure to clarify that you will lie to other people about how you met, since you think so little of their choices.

Now that you've got the tools to build your online profile, you may have noticed that this is the fewest points ever used in a Topz (with a Z) article. This is because just as with offline-dating, online seduction only pretends to be complicated and intensely strategic. In fact, this article could have been summarized in just the first point, but we really wanted to publish those about-me descriptions we found on Tinder. We're confident that if you use our guide you'll have at least eight dates next weekend, and next bi-week we'll teach you how to manage all eight simultaneously, making up excuses to leave the table and switching outfits in the bathroom; just make sure you don't show up to the wrong table dressed as Mrs. Doubtfire!

West Virginia Chemical Spill Reveals Dated Regulations

Disaster Raises Questions of Spill Preparedness



**ANDREW
MCMAHON**
3B ENVIRONMENTAL

On January 14, West Virginia officials slowly began to lift what turned out to be a five day ban on tap water. The ban was put in place after a chemical leak entered the water supply in the region. Up to 7 500 gallons (close to 30 000 litres) of 4-methylcyclohexane methanol (MCMH) leaked from a chemical storage facility operated by Freedom Industries. MCMH, which is used to "rinse" coal, discharged into the nearby Elk River which feeds the region's water treatment plant, resulting in widespread tap water contamination. The ban forced restaurants and businesses to close as residents were forced to use bottled water for everything from bathing to food preparation, and of course drinking.

Before water could be restored, a three step flushing process was required to rid water distribution systems of the contaminant. The process involved running hot water for 15 minutes, running cold water for five minutes, and finally rinsing out all household appliances that utilize tap water.

This spill took place in the Kanawha River Valley, or as it is more commonly known locally as Chemical Valley. This was the third major incident in

the area in the past five years. The first was the explosion of a pesticide waste tank owned by the Bayer CropScience Institute in August of 2008, then came a release of highly toxic phosgene at a DuPont facility in January of 2010, and finally the recent leak of 7 500 gallons of 4-methylcyclohexane methanol (MCMH) from a Freedom Industries storage facility.

One aspect of this story that really stood out was the fact that a chemical facility was constructed adjacent a major river directly upstream of a water treatment plant. In addition to the plant's location, the facility was not subject to federal inspections; in fact it hadn't been inspected since 1991. This exemption from inspection is legal in the state of West Virginia because the facility is deemed a storage site rather than a production facility.

Amongst all of the joy of the return of running water to the area, it seems odd to me that such a quick decision was made when so little is known about the contaminant in question. The orders were given to resume water usage once tests at the water treatment facility satisfied a maximum ppm value of MCMH in the water. The CDC did not have a standard for the chemical at the time of the spill and was forced to rely on an animal study that determined the lethal dose for rats. There has been very little study of this chemical conducted, largely because it was in use prior to 1976 when the United States introduced the Toxic Substances



Congresswoman Shelley Moore Capito surveills Elk River spill extent

Control Act. At the time of the Act's adoption, it was assumed that chemicals in use at that time could be deemed safe and may continue to be used without baseline testing and approvals. What this assumption allows is a lack of information about chemicals that have been used for decades because they are not subject to the rigorous testing and approvals associated with new chemicals introduced after 1976.

This chemical leak exposed two major flaws in the environmental regulations in West Virginia. First it exposed the

need for more inspections of sites where chemicals are not only produced but also stored. Second, it exposed a glaring lack of information present regarding certain chemicals that have been in use since before 1976. When the CDC was called upon to give direction, they made a decision on what were acceptable levels of contaminant in the water supply. I hope that the motives behind that decision were well justified and not an attempt to restore tap water as fast as possible, perhaps faster than is healthy for the residents of the affected region of West Virginia.

Olympic Men's Hockey Team Revealed



**ELIZABETH
SALSBERG**
2N NANOTECHNOLOGY

THE BENCHWARMER REPORT

Sochi 2014. We all know what's at stake: Canada's hockey pride. Forming the optimal squad to defend the gold from Vancouver was no easy task for Steve Yzerman and Hockey Canada, but the debate for Sochi is now over. With a country so rich in talent, Yzerman and crew could hardly go far wrong.

However, there were a few key points that they had in mind when picking the team. First off, in Sochi, the tournament will be held on international ice not the smaller NHL size ice. As such, players with skating ability were generally given greater consideration than those who specialize more in fancy puck-handling moves. They were also looking to get a good mix of veterans and younger players, and to make sure that the team would gel together nicely during the rather short tournament.

And so, without further a-do, if the Benchwarmer was head coach Mike Babcock, here's how the line-up would look:

FORWARDS

Chris Kunitz-Sidney Crosby-Steven Stamkos
Patrick Sharp-Jonathan Teows-Corey Perry
Jamie Benn-Ryan Getzlaf-Matt Duchene
Patrick Marleau-John Tavares-Jeff Carter
Extras: Patrice Bergeron, Rick Nash

This is one seriously potent offence. Sidney Crosby and Chris Kunitz play together on the Penguins, on arguably the most feared top line in the league. Bringing that over to the Olympics along with the goal-machine, Steven Stamkos, will make this line extremely difficult to deal with. Keep your fingers crossed that Stamkos will be recovered from

injury in time for the Olympics. They will be relied on to lead the way in scoring, though of course the second and third lines will need to be producing for Canada to succeed.

As second centre, Jonathan Teows brings a unique mix of strong offence and responsible defense to his forward line. Placing Patrick Sharp alongside his NHL captain is logical as these two don't need to look up to find each other on the ice. Corey Perry adds more scoring punch to this line—if he can reproduce his results from two seasons ago, this will be the most complete line on the roster, and quite likely, in the tournament.

Ryan Getzlaf is again, a very complete player, and an established leader with the Anaheim Ducks. Matt Duchene and Jamie Benn have both been red hot since the beginning of this season. This line brings scoring depth to the team and will be an integral part of the offence, especially if the other two lines do not manage to produce as expected.

The fourth line is an interesting one. John Tavares is an emerging young captain and

will no doubt move up the depth chart in time for the next Olympics. On the flip side, Patrick Marleau and Jeff Carter bring some more experience to the ice, both having been in scoring and defensive roles. Extras include faceoff god Patrice Bergeron, and big man scorer Rick Nash. Nash is a talented goal-scorer, but has not had the same point production this year as he has had in past years. Look for him to try to heat up to get more ice time these Olympics. Bergeron however, will be relied on to take big draws in the defensive zone and towards the end of the third period. He will play a key role in Team Canada's success or failure in defending the gold medal, particularly against highly powered offences such as Russia and the USA.

DEFENCE

Duncan Keith - Drew Doughty
Dan Hamhuis - Shea Weber
Jay Bouwmeester - Alex Pietrangelo
Marc-Edouard Vlasic - P.K. Subban

This defense core gives a great mix of offensive defensemen as well as the good old

stay-at-home D-men. Returning Olympians Duncan Keith and Drew Doughty will pick things up where they left off in Vancouver. Both have offensive jump yet can still be relied on to put defense first. Shea Weber and Dan Hamhuis will also be dangerous offensively, as will be Alex Pietrangelo and Jay Bouwmeester. Look for these guys to be firing off shots from the point like there's no tomorrow. Marc-Edouard Vlasic is extremely responsible in his own end and may be called upon in demanding defensive situations. P.K. Subban is no typical offence-first defensemen, as all Montreal fans will tell you. He's come through in the clutch multiple times and has the potential to be that overtime hero should such a situation arise. The drawback with Subban of course (as Habs coach Michel Therrien has repeatedly pointed out) is that he does have a tendency to be irresponsible in his own end. Perhaps pairing him with Vlasic will help him put this habit on hold at the Olympics.

GOALIES


Starter: Carey Price
Backup: Roberto Luongo
Extra: Mike Smith

Every self-respecting hockey fan knows that a team only goes as far as its goalie takes them. Though the Benchwarmer has criticized Carey Price in the past, he has undoubtedly found his game this season with a more-than-respectable .926 save percentage, fourth overall in the NHL. Roberto Luongo's numbers have not been as strong as Price's this season, but he brings the most international experience of any of the goalies on the roster and will certainly be put between the posts should Price lapse into one of his characteristic slumps. A bit of a surprise on the roster, Mike Smith has been a rock for the Phoenix Coyotes this season, and should his services be required, he will no doubt step up to the challenge.




Flickr/Tabercil

Sidney Crosby and Team Canada faces a tough task in Sochi



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The Iron Crossword

Baseball Metaphors

NANCY HUI
3T CIVIL

1	2	3	4		5	6	7	8	9		10	11	12	13
14					15						16			
17					18						19			
20					21						22			
23				24				25	26					
				27				28				29	30	31
32	33	34	35					36				37		
38							39					40		
41					42						43			
44				45				46	47					
				48				49			50	51	52	53
54	55	56						57			58			
59					60	61					62			
63					64						65			
66					67						68			

Down

- 1 Party enforcers
- 2 Raptor's nest
- 3 Old French currency
- 4 Dance resembling "sex on hardwood"
- 5 Possibly covert plan of action
- 6 One who violates part of Section 15 (1) of the Canadian Charter of Rights and Freedoms
- 7 Incompetent
- 8 Lana ___ Rey
- 9 Founded (abbv.)
- 10 Falsifying
- 11 Grey of tea?
- 12 Floating sheet of ice
- 13 Canvas adobe
- 22 Printer consumable
- 24 Currently
- 25 Check for inclement weather?
- 26 US tax agency
- 29 Float on a thermal
- 30 Tel ___, Israel
- 31 French mother
- 32 Eyelash infection
- 33 Operation team of 65-across
- 34 Reign
- 35 Sinuous fish
- 36 Young bear
- 37 Apple core? (abbv.)
- 39 USAF training program for commissioned officers
- 42 Past tense of 39-across
- 43 Foldup bed
- 45 45-down or 54-down: 50 per cent chance of success
- 46 Ominous ultimatum
- 47 Uses a weapon
- 48 Woefully harbours a crush
- 49 Clears all bases, or sex
- 50 Mugwort
- 51 The gem state
- 52 Lowest point
- 53 Purple flavour
- 54 See 45-down
- 55 Reverberate
- 56 Large crucifix
- 60 Rake
- 61 Epiphany exclamation

ACROSS

- 1 Float through the air
- 5 A remark to the audience
- 10 "Out of ___ field"
- 14 Zeus's consort
- 15 "If I were an enzyme, I'd be DNA helicase so I could unzip your ___."
- 16 New Haven university
- 19 ___ Warrior
- 20 Test to measure communication time between computers
- 21 Cheeky bite
- 22 Connection to 37-across
- 23 Group from which substitutes are selected
- 27 Cereal used for livestock feed
- 28 Indy's "lost" MacGuffin?
- 29 OS name in Steve Jonze's Her
- 32 ___ ball: a type of comedy
- 36 Opposite of het
- 37 A small bay
- 38 Opposite of false
- 39 A point in baseball

- 40 Two of these beats three of the same rank
- 41 Shout
- 42 "Mayor" Ford
- 43 A surprise that's thrown
- 44 A female sheep
- 45 Sombrero or fedora
- 46 <3?
- 48 Substituting, e.g. for a batter or a cruciverbalist
- 54 Worth
- 57 E.g. kimberlite, for diamonds
- 58 Hebrew month corresponding to February/March
- 59 Desktop symbol
- 60 Dromedary or Bactrian
- 62 Nothing at all!
- 63 Item of clothing thrown at Bush
- 64 In the front
- 65 Windjammer
- 66 Turfs
- 67 Pub projectile
- 68 Olden days

Sudoku

#2014-01

LUCAS HUDSON
3B MECHATRONICS

Easy

		4		7				
1		6		9				
9			5	4	6	7		
	9	7		3				5
			2		4			
6				7		8	4	
		9	8	1	3			7
			7			3		2
			4			9		

Medium

9				2		1		4
		4	6	3				
	1							6
7			1	9		4		
1			8	4				2
	4		3	2				9
8							9	
				1	7	5		
5	2		8					1

Hard

9								
1		5		6		2	3	
	8		3	4	5			7
	9	3			6			
		1				3		
			1			6	7	
3			7	5	2		6	
	5	9		1		7		8
								3

Issue 2 Deadline:


Friday, January 31 at 6:00 p.m.
Send your submissions to:
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Solutions for previous crosswords can be found on *The Iron Warrior's* website at iwarrior.uwaterloo.ca/distractions.



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