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Concrete Toboggan Team Wins Five Awards at GNCTR



Rami Mansour

Waterloo Concrete Toboggan Team poses with their innovative toboggan at Mount Seymour in Vancouver, British Columbia

ANDREW FISHER
4B CIVIL

From January 23 to 27, the University of Waterloo Concrete Toboggan Team took part in one of the longest standing engineering competitions, The Great Northern Concrete Toboggan Race (GNCTR). Teams of undergraduate engineering students from universities across Canada design, construct, and race a toboggan that must hold 5 students, have a concrete sliding surface, a steering system, a braking apparatus, a protective roll-cage, and must be less than 300 pounds. The 2013 Concrete Toboggan Team has been preparing for this event for almost two years.

The team, comprised of civil and mechanical engineering students, decided to start from scratch with the toboggan design; breaking away from the norm to try something new. The design team, led by Captain Rami Mansour, decided on a wide track layout with a leg powered braking system, as well as a steering system located at the toboggan's centre of mass (traditionally steering has been located near the back of the toboggan). This design did not come easy; as the braking design had to be changed half way through the design process due to unanticipated rule changes, this restricted the orientation of the riders. Fifteen different concrete mixes were tested to develop a lightweight and sustainable mix for the concrete skis. The optimized mix contained recycled glass, polymer fibers, slag, flyash and

silica fume. Unfortunately, with a weight restriction in place, many corners had to be cut (literally), as the team tried to reduce the toboggans ever increasing mass. In the end, a toboggan weighing in at 295 pounds was constructed.

This year, the competition was held in Vancouver, British Columbia. Special thanks go to the Sandford Fleming Foundation for their contribution to the team's travel expenses. The competition consisted of four main judging categories: team spirit, toboggan design, technical justification, and race day. There was much spirit in the air during each day of the competition with team cheers, dances, and themed costumes. A total of 22 schools from across Canada participated in the competition, the largest in history. The Waterloo team chose Warrior Kart (an adaptation of Mario Kart) as their theme, and the team's homemade costumes included Bowser, Yoshi, Koopa and Toad. These handmade costumes made by Spirit Captain Cara Waddel drew much attention and praise. The team's consistent cheering of the well recognized "Water Water Water" became a staple at the competition. Although the team's efforts were strong, a mid-pack finish in team spirit was the result.

There was much speculation as to who would conquer the technical design category. The truly innovative toboggan design, which was unlike any other toboggans in recent history, was a huge risk for the team, as it could either be a benefit or detriment to Waterloo's final score. In the end, the team

was awarded 2nd place in braking design and 2nd in toboggan originality. A big shout-out goes to Graham Wulff who was responsible for the braking design. This resulted in a 4th place overall finish for Waterloo in the toboggan design category.

The technical justification category was based off of the team's technical report, technical exhibit and presentation. A full day was dedicated to a technical exhibition in which teams showed off their toboggans to both the judges and the public. Exhibits not only showcased the toboggans, but also the team's theme and technical processes. Waterloo's exhibit drew much attention with the setup of Mario Kart on N64. In the end, the team's technical report and technical display were both awarded 1st place. The overall technical exhibit earned 2nd place for the team. These resulted in a 1st place overall finish in the technical justification category.

Going into race day the team had very high hopes. After coming from a successful technical exhibition, there was nothing stopping the team...except the hill. Much to the team's surprise, the race hill did not have the anticipated characteristics. Competitions in the past utilized ski hills groomed with a solid base and steep incline. The race hill at Mount Seymour was a toboggan hill, with a flat grade, increasing in elevation at points on the hill, with very heavy, wet snow. As a result of the poor conditions, 10 out of the 22 teams stopped halfway down the hill, including Waterloo. This was a deep blow especially after spending two years on design

and construction. With determination to finish the run, teammates joined the toboggan and pushed it the rest of the way to the finish line allowing the team to showcase the effective braking system. The teams that succeeded on the hill utilized concrete slabs or wide skies with large surface areas. Those with smaller skies like Waterloo, did not have enough surface area to navigate over the heavy wet snow. In the end, Waterloo tied for 12th place in the race day category with the 10 other schools that did not finish.

All awards were presented at the closing ceremonies on the last day of the competition. The winner of GNCTR 2013 was Western University, with University of Toronto, and Dalhousie University coming 2nd and 3rd respectively. Due to a low race day score, Waterloo ended up 12th place overall, but was thrilled with our six awards in the other categories; the highest number of awards earned since the team won the competition in 2008. Overall the team felt the competition was a huge success and is proud to bring these results back to Waterloo.

Everyone on the team had a fantastic time and those in the class of 2015 are excited to begin preparations for the 2015 GNCTR competition. If you are a student interested in joining this highly spirited, award winning team, please contact the 2015 captains Scott Klinger (sklinger@uwaterloo.ca) or Jared Murphy (jc2murph@uwaterloo.ca). The team is looking for new recruits, as many of the current members are graduating.

Letter From the Editor

Breaking News: Feds Signs Agreement with University to Take Full Control of SLC for Compensation of Fed Hall



ANDREW FISHER
EDITOR-IN-CHIEF

Welcome to Issue 2 of The Iron Warrior! This issue is packed with 24 pages of content so there should be something which will spark your interest. My favourite article of the issue goes to 'The Effect of Cats on the Environment' by Nina Feng for her interesting take on how those loveable creatures we see on the internet are really menaces to the natural world. Runners up go to 'Silicon Nano-Particles Key to Extracting Hydrogen' by Brian So and 'Top Places to Study on Campus' by Wade Wilson and Edward Blake. I'd like to thank my copy editors for their hard work as well as my layout editor, Natasha Phidd, for helping layout half of the paper this past weekend. Thanks and enjoy the issue!

Breaking News: As of Monday February 4, 2013, the Federation of Students (Feds) signed an agreement with the University to take full management control of the Student Life Center (SLC) for compensation of the University's take-over of Federation (Fed) Hall.

For those of you in first-year, or those who just don't quite remember the details, Fed Hall is the building north of Ring Road across from the University Club and parking lot M. The building was built in 1984 and paid for entirely by students through an approved fee increase. The building was owned and operated by Feds. Its primary use was a bigger venue to host events which could not fit in the Bombshelter Pub.

In 2003, a fight broke out drawing negative attention by local papers. As a result, concerned citizens demanded the University take action. The Director of Food Services at the time personally shut down Fed Hall and Bomber, only allowing them to open with the administration's approval. Feds sued the University for \$11 million due to license violations, later to settle out of court. In 2004, the new Feds executive was forced to remove the clause in the agreement which prevented the university from reasonably withholding lease renewal.

In 2011, the University was short on space and announced they would not renew the Feds lease on the building. This meant the University took over full control of the building, without any compensation to the students who paid close to \$1.5 million to build it in the first place. There were no alternative proposals or options presented with this 'ultimatum'.

Since 2011, the Feds executive has been working out an agreement with the University to ensure proper compensation is received for the University take-over of Fed Hall.

As of Monday, an agreement was finally reached and signed by both parties mak-

ing the SLC management change official. Some highlights of the agreement include:

1. Full management oversight control of the Student Life Centre.
2. A 49-year operating agreement with the ability to renew.
3. Limited permissions required from the University of Waterloo for the Federation of Students to improve the Student Life Centre.
4. The removal of University vending machines once the Federation of Students starts to operate the Student Life Centre, and control of a 24 hour convenience outlet.
5. The ability to negotiate and redistribute all leases within the building once the term is over in order to meet the needs of students.

More details regarding the agreement and operation of the SLC will be released in the next few weeks.

With this agreement comes the end of a two year battle with administration spanning two executive teams which consumed hundreds of hours and dollars just to come to a consensus. Was it really worth it? For me it is a 60% yes.

Although Fed Hall was a building paid for by students, I think it has been underutilized the past few years. Some of the major events which occur in Fed hall on a regular basis are Orientation Week events, Frost Week concerts, and the famous SciBall. Although this may seem like a huge detriment to those involved in running these events to lose Fed Hall, the University still allows students to book out the space if required. Although it comes at a much higher price than before, the building has not been lost entirely (yet). It is expected that the University will be renovating Fed hall to accommodate offices for Food Services, most likely eliminating student access to the second floor of the building. However it has been stated that the open space on the main floor will remain intact for student use, but also for external bookings such as weddings, receptions, and conferences.

Although students will slowly be phased out of Fed Hall access, we have potentially gained more by Feds taking over the SLC. Feds now has secured management in a central student hub on campus which students use on a daily basis. To go from a building used by students 4 to 12 times a year to one that is used every day is a huge upgrade in the short term perspective.

With the agreement, Feds can now make changes to the makeup of the SLC, whereas before it was either extremely time consuming if not impossible. This is one of the major benefits to the agreement. The SLC Management Board consisted of both University staff and student representatives. Normally the students on the board would create a majority in any decision, however with busy schedules; many members did not always attend, shifting the opinion to favour that of the University, making it very difficult for things to

get passed. With the new agreement, this board will no longer exist, eliminating a huge hurdle for approvals.

Although Feds will have a much easier time making changes within the SLC, what do they actually have the power to change? As it stands, the major University owned services in the building are the Housing Office, Watcard Office and Campus Tech store on the basement floor. There are also numerous external companies such who have leases with the SLC such as SOS Physiotherapy and Campus Dentist. Once these lease agreements come up for renewal, Feds now has full control as to if they will be renewed. Feds can choose to not sign a renewal agreement should there be a need for more space for Feds and students. This is a huge advantage in the long run; however its benefits will likely not be seen in many years, depending on how long the original lease contracts were set for.

One of the major discussion items that will come from this agreement will involve the food venues in the SLC. As it stands, the University owns all food operations in the SLC except Wasabi, Campus Bubble, Federation Xpress, and the Bombshelter Pub. The University venues have full control of their space as it stands, since the addition to the building in which they are located was paid for entirely by the University. There are also other agreements in place which prevent Feds from opening businesses which would compete directly with Waterloo Food Services, therefore allowing them to maintain their for-profit monopoly on campus. If there are any voids in what food services offers, Feds will have a much easier time getting the venue set up in the SLC, however it will still require many approvals from the University.

After going through these options, in my opinion not a lot has changed with how Feds will run the SLC. Feds will still run the same services they have before, they can't change what is currently being operated in the building until the lease agreements come up for renewal, and any major changes to food venues still require a full University approval. So is this really good compensation for the \$1.5 million students invested into Fed Hall? I'm not so sure. If Feds can readjust how they operate their services in the SLC to reduce overhead cost and boost profits to earn back the \$1.5 million in student fees lost with Fed Hall, then I will be more satisfied with the agreement. However, this is not likely to happen anytime soon, especially with an executive team whose goals for the organization change yearly as new people take on the roles. I think the University was able to get away unscathed with this agreement. They were able to take over a full building they never had access to before, by giving up a small amount of control in how the SLC is managed. Only time will tell if this agreement was worthwhile, but at the present, I feel the University took better advantage of the situation.

THE IRON WARRIOR

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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.

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Waterloo Engineering Students Compete At OEC



Jamie Feldman

Waterloo competitors finish the weekend at the closing ceremonies banquet dinner



ALESSIA DANELON
4B MECHANICAL

From February 1 to 3, 2013, McMaster University hosted the Ontario Engineering Competition. This is the largest engineering competition held in Canada, hosting 16 schools in 6 competitions. With over 100 competitors in attendance it was an exciting and very competitive environ-

ment. The theme of the competition was "Complete Engineering."

Our school was represented in all 6 of the competitions, and we performed especially well in the Technical Debates where competitors, Jeric Paulig and Matthew Michael placed 3rd. Many of our students worked very hard over the weekend to solve problems about mining in Northern Canada, designing model wind turbines, programming robots, showing off an innovative customizable interface and presenting cutting edge topics in the field

of geomagnetic disturbances and deep brain stimulation. It was really a weekend where one could observe the brilliant minds we have in our generation across the province, and Waterloo was showcased quite well.

The highlight of the weekend was keynote speaker, Mark Chamberlain, a University of Waterloo graduate. He spoke of the engineer's obligation to ethics, the environment, and society. Chamberlain was an excellent speaker and gave great examples of how easy it can often be to

compromise society or the environment for economics and greater profits. Yet Chamberlain always came back to the main point, that we as engineers have an obligation to our world to take care of it as technology advances. It was a harsh truth, that hopefully resonated with the competitors as strongly as it resonated in the passion of Mark Chamberlain's voice.

The weekend was very educational overall, from the competitions to presentations to sponsors and judges. It was a positive experience for all of our competitors.

First Years Ignite Their Inner Spark at FYIC

LAURA COLEMAN & DHRUV GULIANI
1N MECHANICAL
1N MECHATRONICS

On January 18, 2013, a group of first year engineering students travelled with EngSoc representatives to Lakehead University in Thunder Bay for the First Year's Integration Conference organized by Essco. Expecting a formal and very structured environment, we were surprised to begin interacting with other first years from across the province within our first few hours at the hotel. From trading patches to complaining about tough courses and work load, the first few hours served as a sneak peak to the fantastic relationships that could be developed over the next few days with people who were

all, just like us, interested in impacting the world on a large scale.

Daytime events included guest speakers and team building activities which were both mentally and physically engaging. We learned more about the PEO and how to obtain your P.Eng. We heard a political figure speak of the impact that an engineer's problem solving perspective can have in the political community. We must not limit ourselves to the technical fields that we study in University because what we are taught is more than how to take apart an engine, or program an operating system, but rather how to tackle a completely new and complex problem. It was inspirational and eye opening to hear these perspectives. This coupled with hearing about other schools' Engineering Societies made us feel encouraged to be

involved with our Engineering Society over the next few years, striving to make Waterloo Engineering an even better environment than it is.

The weekend was about acceptance and realizing the value in diversity. We were brought together with people from all over Ontario; people with very different perspectives and values, people in all sorts of engineering disciplines. However, these differences didn't matter when we were trying to bear the cold while tubing down a hill, trying to strike down all the bowling pins with one hit, or running through the unknown campus of Lakehead trying to complete a scavenger hunt. This was the time for collaboration and team spirit, which we are proud to say Waterloo displayed to the highest extent.

It only took those three days to expand our ever growing group of friends in our field, and best of all they were from all over the province, not only from our own school. Throughout the weekend we mingled with students from other universities, making friends and exchanging contact information. This was more than just a solid networking opportunity though. FYIC became the spark that ignited a desire in the many students that attended to become more involved in the vast engineering community we had discovered. It is also this same fire we plan to bring to not only our own engineering class at Waterloo, but those there now and those to come. We will work together and with others to bring all we can to the Waterloo Engineering Society and the students.

Management Engineers Excite at IIE Conference

MOLLY BECKEL
4B MANAGEMENT

Once again, Management Engineering has had an exciting performance at the annual Institute of Industrial Engineering Student conference. This year the conference was held at Concordia, in Montreal, Quebec. After a long and strenuous 11-hour bus journey, the team arrived and set about preparing for the competition. Waterloo participated in all of the conference competitions: technical paper, simulation,

theoretical competition, and case study.

The technical paper entries were sponsored by the Sanford Fleming Foundation to cover travel expenses. Megan Maguire and Melissa Deziel presented their respective papers, with Megan taking home second place in the competition.

One team from Waterloo made it through the rigorous simulation competition first round to the finalist round. Although Scott Walton, Kamal Aman, and myself didn't succeed in placing within the top three, we were considered to be the most entertain-

ing of the presentations.

In the theoretical competition, Dayo Olawo, Rehana Rajwani, Andrew Scott, and Maha Alam competed in a grueling 3 hour exam. In the case study, Sarah Sleiman, Sally Lee, Hobyung Lee, and Trevor Jenkins analyzed operations at Mega Blocks to optimize a toy-making production line.

Although the prestigious golden-I trophy will be missed (we won last year), the experience was well worth the 22 hours spent on the bus!



Point Vs. Counterpoint

Should the Waterloo Engineering Society remain a member of CFES?

POINT

COUNTERPOINT

SCOTT RANKIN
WATERLOO ENGINEERING ALUMNI

The Canadian Federation of Engineering Students (CFES) is a national organization that represents over 60,000 undergraduate engineering students by empowering members school societies, and enhancing the students experience in multiple ways.

Every undergraduate engineering student who pays their engineering society fee will be spending \$0.40 every year to be a member of CFES. The only question one would need to ask in order to justify whether EngSoc should remain a member of the CFES is whether the average student (you) get your \$0.40 worth.

Now, we could start making comparisons between the costs of CFES services to other budget items the Engineering Society spends money on, and list all the items where the money could be better spent, but this would spin us around in circular arguments. There are countless places for the Engineering Society to spend money, some having more benefits to EngSoc than CFES and some having fewer benefits. However EngSoc still spends money on all these items, why is this? It's because what makes a society great is both its depth and breadth of services. A great society can't be made from one or two select services that have the highest payback per cash input, if they did they would be appealing to only a select group of individuals.

The reason why EngSoc should remain part of the CFES is simply because it cannot obtain the same services CFES provides anywhere else. The biggest three among countless others are; national representation, leadership development, and national/international recognition.

The CFES is there to represent Canadian Engineering students to a variety of organizations, some of these organizations where if the CFES didn't exist you would have no other way of be represented. One of these groups includes Engineers Canada, a group that founded the CEAB (Canadian Engineering Accreditation Board), and is responsible for advocating on behalf of all Canadian Engineers. The CEAB is responsible for accrediting your school so that they are recognized as an Engineering school and you can get licensed. Pretty important stuff! The only tie you have to the CEAB is through the CFES. Therefore, the only way you can be represented at this level is by paying your CFES membership fee... unless you want to be that "guy" and not pay your fee but still reap the benefits of the representation that the CFES gives to all engineering students, but if all the CFES members schools did this then the CFES would dissolve, thus removing any and all representation.

The CFES hosts two major conferences throughout the year that are purely focused on Leadership development in key areas.

These conferences can be one of the best services that the CFES provides, or it can be one of the poorest, depending on the kind of leader each engineering society sends to the national conferences, and how much that leader brings back to you, the average student. While it is true that other groups that host student conferences also provide this service, those conferences are either not focused on the same topic or not as well developed. NCWIE (National

Conference for Women in Engineering) is a conference held in the Fall that focuses on Women's issues both in the engineering student body, and in the engineering profession; there is no other conference like this in Canada and it continues to gain success every year. Congress is the CFES's flagship event; it is a week-long leadership development conference targeted and bettering your Engineering Society leaders. This conference is intended to be a breeding group for EngSoc ideas. I myself have heard countless success stories from other student leaders of ideas they brought back to their schools that have affected even the most apathetic of students. If you're wondering why you're not seeing an impact from CFES conferences, maybe you shouldn't be thinking, "Why isn't CFES doing a better job?", and you should be thinking, "Why aren't my leaders bringing a n y -

thing back?"

Note:
C F E S
Congress
was hosted by Waterloo in January 2013, and was one of the most successful Congresses to date... What did your leaders bring back from it?

Finally, the real big ticket item is National/International recognition. If you are a student competing in the Ontario Engineering Competition on behalf of Waterloo and win your event (or come second) you will be invited to compete in the Canadian Engineering Competition (CEC), but this is only because your Engineering Society paid your CFES fees. CEC is a service provided by the CFES, and there have been times in the past where a school has been ineligible to compete in CEC (i.e. was not allowed to attend) because their school revoked its membership from

the CFES and stopped paying its membership fees. Even if you are not the type to compete, you should still want to see your school eligible to compete in the Canadian Engineering Competition. Oh and there is more! Over the past few years, the CFES

has been working with international engineering student groups to organize the first ever International Engineering Competition (IEC), hosted by, guess who? That's right, the CFES, but if Waterloo revoked its membership, it couldn't compete in the CEC in order to even be eligible to compete at IEC.

Ask yourself: is my \$0.40 worth all that?

You're damn right it is.

FARZI YUSUFALI
3T NANOTECHNOLOGY

As to whether EngSoc should remain a member of CFES, most of you will probably ask, "What is CFES?". That, in itself, proves my point. Why are we members of an organization that the average engineering student would never hear about in the five years spent in university?

While being a member of an organization for Canadian engineering students is not much of an issue as nothing bad can come of it, what might you say if you knew that part of your EngSoc fee went to fees paid to CFES? To be a member of CFES, each undergraduate student must pay \$0.40 every year in order to enjoy the perks of being a part of it. While

\$0.40 does not factor much in the grand

scheme of financial things, the amount of money as a collection of all the engineering undergraduate

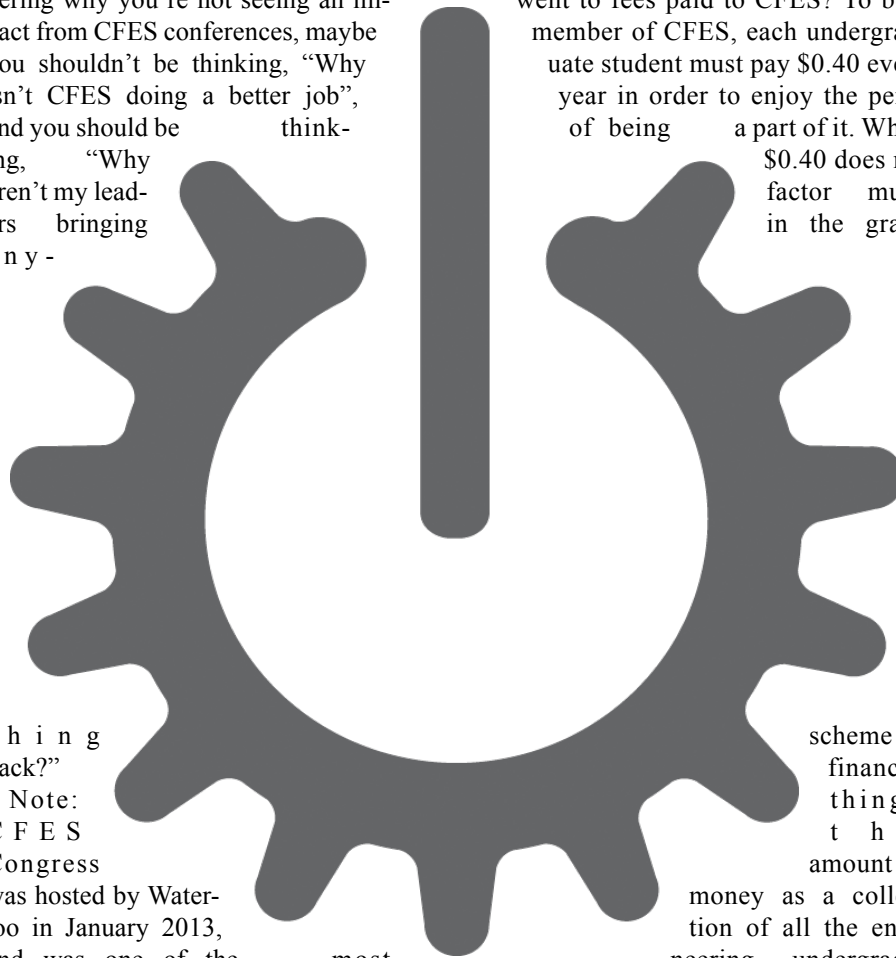
students paying this amount is quite substantial. To give you an idea, of the approximate 6000 students studying engineering at uWaterloo and a low approximation of roughly 70% of those students paying EngSoc fees, the amount of money collected, if not spent on CFES membership, would add up to just under \$1700 a year. Split over three terms, this comes up to an amount of \$560 of spending money for one term. With that money, some of that could be used for sponsorship allocations, subsidizing the costs of conferences (besides CFES Congress) and events, and allow for healthier funding to directorships held every term. While you might argue that this number is almost insignificant considering the much greater amounts of money being handled by EngSoc every term, it would still mean that you can see what your money buys when paying this fee every term.

After establishing that such a membership requires some investment from the undergraduate student every term, let's talk about what CFES offers the student body in exchange. According to the CFES constitution, the purpose of this governing body is to "solicit, represent, organize and exchange views, information and activities pertinent to the goals of the the members at a national level as to ensure their moral, intellectual, cultural, academic, social and economic well-being...". Since the goal is to maintain the overall well-being of its member societies, it would seem that this organization does not do so with respect

to uWaterloo since their impact on our society has not been felt by the average student. In addition, given the size of the Faculty of Engineering in Waterloo and the long-established order that the Society uses to govern itself, CFES does not serve its purpose as such since uWaterloo's Engineering Society can maintain its 'well-being' on its own. While one might argue for the support that CFES gives to smaller engineering societies for other schools across the country, the fact of the matter is that CFES cannot provide any additional support to members who are well-established. As such, while it may be nice that we remain members of this governing body, in the heart of it, uWaterloo Engineering does not have much to gain especially considering the allocation of student fees going to CFES.

While CFES does have certain responsibilities that more involved engineering students may see once or twice a year, like planning the Canadian Engineering Competition, running Congress every year, and publishing Project Magazine every year, there have been instances in the past of wavering resolve to uphold their position as representatives of Canadian engineering students attending the member schools. Besides the two events just mentioned, there hasn't been any other indication of CFES upholding its position as a representing the uWaterloo engineering society. For example, in February 2011, the engineering societies from Queen's, McGill and the University of Toronto made a formal statement of grievances addressed to the management of the organization. Overall, the complaints aimed at the Executive being unable to exert its leadership in cases where poor decisions being made (with one of them being the location (being the Yukon) for Congress 2012 thereby unnecessarily increasing costs for delegates), the use of CFES funds for the Officers' overseas travel, and the lack of direction that CFES has presented over the years in bettering the education and opportunities of Canadian engineering students. While CFES did respond to those grievances with corrections to the spending for overseas travel (for which CFES only funds partially), it was apparent that they could not directly refute the basis of the complaints. In much the same way that these three societies evaluated the real value that CFES provides, so too should Waterloo Engineering and debate the real value that this organization provides to the Engineering Society when serving its students.

While this seems like only the internal workings of CFES have been touched on, you have to ask yourself: how much did you know about CFES prior to reading this? For example, did you know that CFES offers courses (being CECs) to all engineering students teaching a subject relevant to engineering development? How about the Student Development Program that specializes in providing professional networking opportunities? In fact, how many times have you heard VP Externals over the years mention what CFES is doing (besides Congress)? The fact that their presence is, at best, rarely felt by the Waterloo's Engineering Society lends reason to wonder why this is the case and why we, as a Society, continue to invest our money into something that shows virtually non-existent returns to the average engineering student.



The Real World: Beyond Fourth Year



KEVIN VELOSO
4C SOFTWARE

THE GRADUATING WARRIOR

The Real World. It's something some people fear because they see grown-ups living in "The Real World" and that if they were to join them, they'll have to grow up as well. I think the fear of The Real World comes from not knowing what it is. Is it even a thing? I was not aware of the concept of "The Real World" until I entered university, only being told that it's where you go when you're done your undergrad. In this column, I bring the concept of The Real World into light and, hopefully, assuaging any fears that come from it.

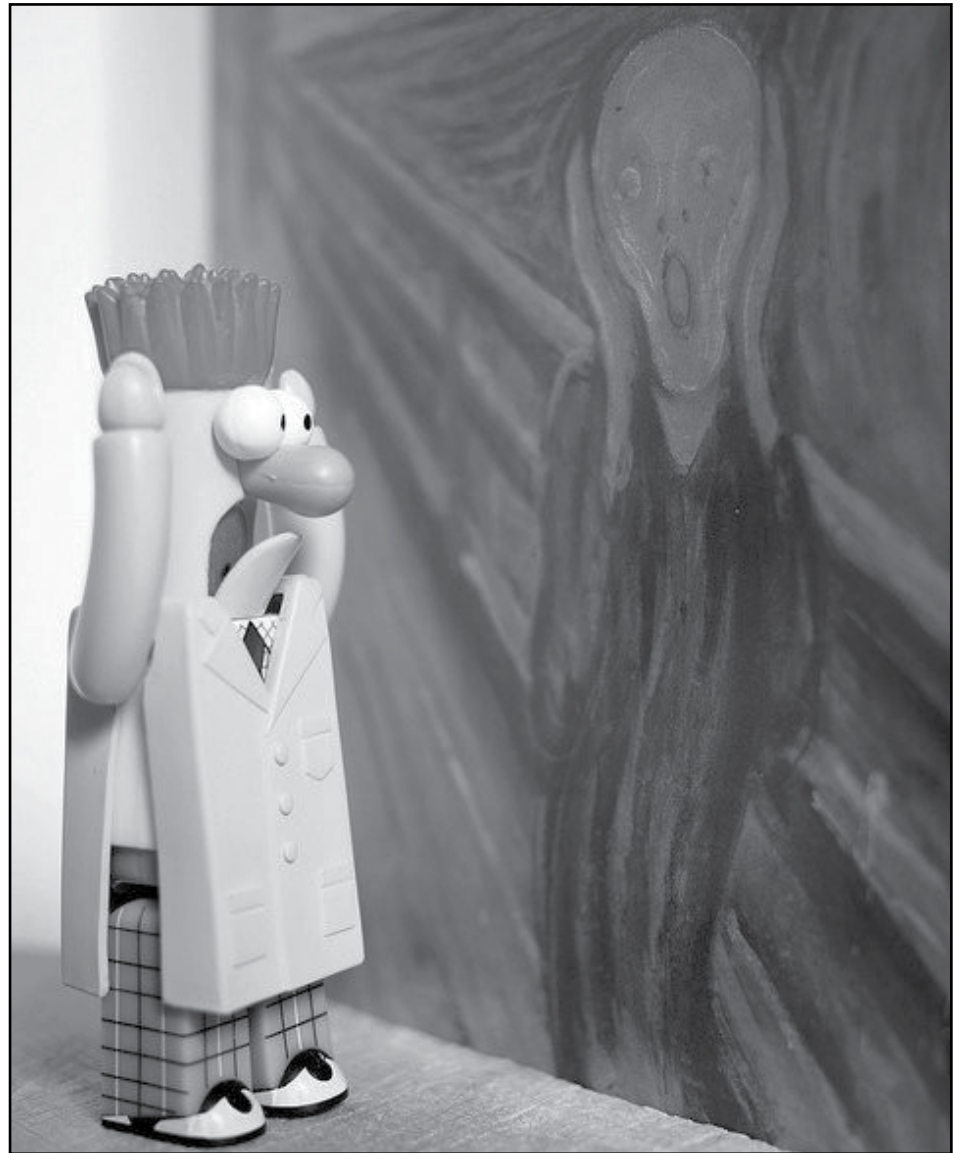
As mentioned before, The Real World is this hypothetical world graduates enter as soon as they finish their time in academia, whether it's finishing undergrad, grad studies, or higher. People are expected to find "big people jobs" (full-time jobs, contractor positions, or for most people, anything that's available) that feel like extended co-ops. For some, they realize they're living in The Real World as soon as they start their job and realize that they have their own office, that they're no longer treated as a co-op student, and have been assigned to a larger project than what they're used to. Others realize they're living in The Real World once they've left school for four months and realize they're not going back. Regardless of when you realize you're living in The Real World, it first starts with job hunting. I mentioned last issue that some fourth years are looking for jobs right now, or returning to a previous employer for a full-time position, going to grad school, or maybe they aren't looking yet. Some fourth years choose to focus on finishing 4B, trying to avoid the dreaded Senioritus. Look it up on Wikipedia; it's an actual thing. Others just hope for a pass, pursuing a job that isn't related to their program because co-op provided the opportunity to explore jobs outside their program. Finding a full-time job that is slightly unrelated to one's program still counts as entering The Real World.

Maybe The Real World sounds too dreary and that you would rather focus on the mentally stimulating adventure that is academia. For a lot of people, including your profs and TAs, they have found their passion in researching and developing new ideas related to their field of study, wanting to pursue graduate studies, or even a Ph.D in a particular subject. If you plan on staying in academia past your undergraduate career, congratulations! You

were in The Real World the whole time! The world of academia definitely counts as being part of The Real World, even if it's a different part of the world that your friends are in.

One viewpoint that I dislike hearing is that graduate school is the "snooze button" you hit so that you don't wake facing The Real World just yet, as if that's the route fourth years should take if they're unsure if they want to leave school. Some students pursue graduate studies after undergrad to have a better opportunity in getting R&D (research and development) positions (depends on your field of study, of course). Others pursue graduate studies to specialize in a field that will later help them get a Ph.D. If you're a fourth year that is in the position of choosing between finding a job in The Real World and going to graduate school, I would suggest looking at alternatives available in academia and in industry and see what suits you. For example, there may be some R&D jobs available that may only require a Bachelor's degree. Some companies may host, advertise, or participate in conferences related to your field of work, exchanging new ideas or methodologies discovered while working in the industry, allowing you to continue your pursuit of knowledge in your particular field. Or maybe some interesting positions you have seen that are outside of R&D require a graduate degree or higher. There are definitely more alternatives than what I've listed here.

If you're still under the belief that graduate school is that snooze button you need to hit to avoid leaving school (ex. maybe you're comfortable with staying in Waterloo and wouldn't mind staying a little longer), I would like to provide another perspective. First years can remember making the huge decision of which post-secondary institution to attend. Like fourth years, if they weren't local to the area, they probably had to make the inconvenient decision to move from their hometown to somewhere closer to campus. It's as if they had to enter a new world. Maybe not The Real World, but still a world different than what they're used to. Even if it's for five to seven years, it's still a large decision. Like fourth years, their friends may plan on moving to a different city or a different institution once they're done school, keeping in touch online or by visiting during the holidays. Like fourth years, they had a chance to preview their new world through information sessions (just like company-hosted info sessions!) or through online sources. Unlike fourth years, their friends probably weren't their roommates for several years for undergrad (although they might be; I don't know the



Mike2.com

You probably look more like Beaker than The Scream when thinking about the real world

future). Unlike fourth years, the experiences they had with their friends weren't like the characters you saw in *Single & Sexy*. The kind of ties fourth years have made during their undergrad are definitely not the same as the ones they've made in high school. If you're still under the belief that graduate school is that snooze button you need to hit to avoid leaving school (and graduate school isn't something you want to pursue), take a moment to remember the months before you started university.

Some people may overplan for The Real World, and blow that idea up way out of proportions. It may be difficult to think that you may be at a company for more than four months at a time, but some people think of the extreme and pretend that they're actually planning out the next 40 years. This kind of thinking reminds me of some obsessive teenagers in high school that think dating someone means potentially marrying them in the future, having ten kids, and teaching them how to

be an Overly Attached Girlfriend just like them. Finding ideal opportunities such as finding a good job and a good life partner can happen, and if it does, congratulations on potentially not dying alone! However, realistically, they might not happen, and maybe it's better to focus on where you'll find work after graduation, or which institution to do your graduate studies.

The Real World may be scary at first. If you were screaming in fear before reading this article, you probably now look more like Beaker in that photo than the character in *The Scream*. Again, as mentioned in my previous issue, if you're really, absolutely, positively petrified of what could potentially happen after graduation, or if you feel like you need a small nudge in the right direction, go seek career counselling, as they'll probably have better things to say than I do.

To the Engineering Class of 2013, congratulations on earning your iron rings. That's just one step closer to The Real World. Spooky spooky!

Opinion: Alberta to Form a College of Naturopathy



NANCY HUI
3A CIVIL

The Alberta government has announced the creation of a College of Naturopathic Doctors of Alberta to self-govern their profession, in light of increased interest in alternative medicine and the necessity of ensuring patient safety. There are currently an estimated 144 naturopathic doctors practicing in Alberta.

Is this a good step?

Naturopathy is a form of alternative medicine that discourages the use of surgery and drugs, while promoting a wide range of other treatments. Such treatments include acupuncture, colour therapy, homeopathy, reiki, and botanical medicine.

Regulation of naturopathy is, by itself, a good step. Practitioners should be held accountable to a professional standard, and follow guidelines on treatment safety.

But is that even possible under the College of Naturopathic Doctors of Alberta? Naturopathy covers an incredibly wide range of alternative medicines. There is no way in hell that anyone could draft regulations for all the practices that fall under the umbrella of naturopathy. Nor could any limitations on what does and does not constitute naturopathy be constructed. I can't imagine an organization that could effectively govern aura therapy, colour therapy, and veganism. The best they could do is enact some wishy-washy best practices guidelines.

The harm posed by legitimizing naturopathy outweighs the potential good.

It should be recognized that naturopaths generally shun modern drugs. That includes

vaccinations, surgery, modern cancer therapy, and the like. A patient who seeks the help of a naturopath is less likely to consult an actual doctor of modern medicine. Legitimizing naturopathic doctors endangers patients by suggesting that naturopathy is an acceptably effective substitute for conventional medicine.

Speaking of the term doctor - what are they doctors of? Philosophy? Deep medicinal thinking? I don't think any self-respecting educational institution would grant anyone the title of "Doctor of Acupuncture."

This isn't to say that all naturopathic treatments are bahooye. Vegetarianism is known to prolong lives. Some massage therapies are helpful for chronic pain. But giving up meat isn't gonna cure cancer or vaccinate you against Hepatitis.

All in all, recognizing and legitimizing naturopaths is not dangerous in itself,

but putting proponents of iris analysis and ozone therapy on the same level as other healthcare professionals is dangerous and suggests to the general public that naturopathy is an effective substitute to seeing a conventional doctor.



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A Peek At Disorientation Week



KEVIN VELOSO
4C SOFTWARE

Every year during early February, a week known as Disorientation Week is planned. Various events are advertised by the Graduation Committee (GradComm) that start from the beginning of the week and end on Saturday, leading up to the Iron Ring Stag (IRS) and more importantly, the Iron Ring Ceremony. During this week, and more notably at the end of the week, you may spot some very peculiar fourth years on campus. By the time this article is published, half the week will have gone by and the graduating class will be three days away from earning their Iron Ring! Most events planned for Disorientation Week would have happened as well, including the IRS slave auction and brewery tour. DUSTED is planned for the evening of this publication, followed by a scotch-tasting event the next day.

One of the most notable events during Disorientation Week is the day before IRS. Professors of fourth year engineering classes are aware of this day, so most

of them cancel class for the day. With classes cancelled, fourth years make plans for the morning before IRS with the other students in their class. The day typically starts off with a type of breakfast-champagne party that is hosted at the house of one of the classmates, assisted by lower-year students (IRS slaves) who have offered their service in helping to set up this party. Afterwards, fourth years head to campus, a majority of which wear unusual costumes. These costumes can vary from comic book superheros and villains, to cartoon characters, to milk cartons, robots, and even cross-dressers. Classes typically choose a theme prior to this day so that everyone in the same class wears a costume following that theme.

By the time you arrive on campus, you may notice that a lot of pranks (mostly harmless) have been pulled throughout campus, mostly around the engineering buildings. Examples of pranks that have been pulled in prior years are decorating hallways and walkways with balloons, hanging huge banners along the roof of buildings, construction of a brick wall (2003 IRS), and a Trojan horse in the middle of the Davis Centre (2012 IRS). Fourth years may also visit your class on

this day! The visitations are normally tolerated, and in most cases, pre-approved by professors who are aware of visitations. For anyone concerned about how much disruption happens in class, it typically lasts for a minute, possibly more if subsequent fourth year classes come in and out, or if the professor and the fourth years have something specially arranged; lower-year lectures are still held, though. After making class visits, fourth years come together to watch the IRS clock roll over, displaying less than a day until their Iron Ring Ceremony! Most shenanigans stop by then as fourth years begin their PubCrawl.

Why dedicate an entire week to disorientation, and why do fourth years have an entire day full of pranks? The Iron Ring Ceremony is one of the most prestigious events that happens during the engineering undergraduate career. Receiving an iron ring not only serves as a reminder of the duties and obligations of an engineer, it also serves as an achievement that engineers receive after five to seven years of hard work. The costumes and harmless pranks pulled by fourth years act as their last set of shenanigans and antics before entering the workforce as responsible en-

gineers. Traditions are held during IRS to remind students that they've entered the world of responsibility. One tradition is the all-black attire required for IRS, with all non-black attire ripped off or removed before stepping into the venue. Some fourth years will wear their costumes one last time before having it torn off and discarded by their peers at the door. Like most large engineering events, the TOOL makes a visit to IRS, and as newly-ringed fourth years, they can finally touch the TOOL.

For lower years, it seems as though these traditional events are too far into the future, with the first and second years having over a thousand days until their own disorientation week. A lot of work has been put into planning these events, especially the Iron Ring Ceremony and the Iron Ring Stag. Fourth years take most of the day before IRS looking back at their time at Waterloo, visiting old professors who have helped them through undergrad and celebrating with their peers, most of which they've known and worked with since 1A. If fourth years are leaving the undergraduate life for the scary place known as the real world, they might as well go out with a bang!



Meg Bauman

On the Friday before IRS, graduating students dress up in themed costumes and engage in many shenanigans

Ursula Burns: Confidently Driving Xerox History A Tribute to Black History Month

JULIA KAVUMA
2T SYSTEMS DESIGN

The CEO of Xerox, Ursula Burns, has been driving the transformation and growth of this Fortune 500 company for longer than many recognize. Not always in the driver's seat, she followed a unique path to her current position at the top of the iconic brand.

Burns graduated with undergraduate and masters degrees in mechanical engineering. During the final part of her studies, she completed an internship with the Xerox Corporation, her introduction to a long relationship with the company. The key to her 30 year-long career was, in her words, that, "I saw what was possible for myself early."

The turning point in the Ursula Burns' story fell during a 1989 Xerox "caucus" on diversity. When she pointedly asserted her opinion that the company's diversity initiatives did not lower hiring standards, her superiors took notice. Called in for a meeting with the then president of marketing and customer operations, Wayne Hicks, Burns thought she may be reprimanded for her comments. Instead, she was asked to continue meeting with Hicks, who was inter-

ested in her curiosity for the company. He eventually asked her to become his Executive Assistant the next year.

"Why would I ever want to do that?" she wondered. But her acceptance to this "de facto leadership program" not only allowed her to learn the inner workings of the Xerox business, but also put her in the right places at the right times for her characteristic outspokenness and keen business insights to be noticed. It was not long before Xerox's CEO at the time, Paul Allaire, had Burns working in a similar position with him.

The result of Xerox's executive bootcamp had Burns leading key segments of the business as senior vice president and president through the 90's and 2000s. History was made when she succeeded Anne Mulcahy in June 2009 to lead Xerox, the first time one woman followed another as the CEO of a Fortune 500 company. Their combined leadership was key in maintaining the reputation of the company they both love.

Their tough love was necessary, as Xerox, while iconic, was dying slowly. Through its 100+ year tenure, the Xerox Corporation had established a brand synonymous with the photocopying technol-

ogy that it invented and pioneered. However, a shift to the digital world, among other factors left Xerox struggling to keep up. Xerox's move into the business process industry was their ticket to relevancy in the transforming landscape of the way information is produced, transferred, and consumed.

Burns championed the acquisition of Affiliated Computer Services (ACS) as she settled into her role as CEO. The merger showcased some of the innovative research conducted from the company's research hubs in Europe and California. Since 1993, Xerox has been developing the tools that it now uses to remain relevant in the digital world. Their machines not only capture, but understand information at a level beyond human capabilities. Coupled with ACS's data collection technologies, for services such as electronic toll collection, Xerox has not only managed to streamline, but has also simplified the data collection process. Xerox machines eliminated the need for transponders in each vehicle, with machines that can read its license plate and even detect minute details that may reveal if the vehicle was stolen.

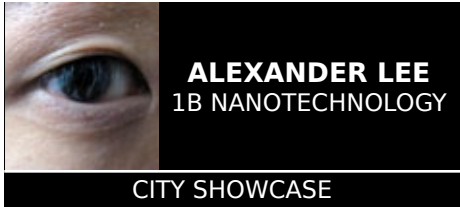
Xerox offers value to its customers, both through their tried and true machinery and

with unique service solutions for business process challenges provided by their diligent research. Burns describes the leadership style of the company to be "values-based," and this helped her earn her spot at the top. She says: "Know the values that influence your business decisions. Articulate the values often and loudly. Then, live by them - test every decision through the lens of your value system." Her leadership style demonstrates her commitment to Xerox and its clients, an image that has helped her to steer the company in the right direction.

As some pause this month to reflect upon the diversity that we sometimes take for granted, Burns' story serves as a reminder that she got to where she is just like any other CEO: through hard work, strong relationships and a dedication to grow and sell a brand that she cherishes. For Burns, "Where you are is not who you are." While she may have never imagined herself to be the first female, African-American CEO of a Fortune 500 company during her childhood in the Lower East Side of Manhattan, she never doubted that she would be successful.

That is the confidence that history is made from.

Throne of the Habsburgs: Vienna, Austria



Last issue, I highlighted the marvels of Istanbul, seat of the great Ottoman Empire, which, at its height, was one of the largest empires the world had ever seen. Yet, even at this pinnacle, the Turks were not the only power in the world - they were not even the only power in their immediate vicinity. The Holy Roman Empire and later the Austrian Empire were the Ottomans' bitterest rivals and for five centuries, they fought the Ottomans tooth and nail, for dominance of the Balkans and Hungary on the Eastern fringe of the Ottoman Empire. Throughout Austria's long, glorious history, Vienna served as its capital and thus became the premier cultural, economic, and scientific hub of central Europe. Under the guidance of the Habsburgs, one of the most powerful and prestigious royal families, the Austrian Empire increased in power and wealth, and as it did, so too did Vienna.

Today, Vienna is still considered one of the greatest cities in the world. It consistently tops quality of life city rankings from many different publications. It is the number one site for international conventions and congresses and is a shining exemplar of urban planning concepts successfully realized. It is one of the most beautiful cities in the world and is a tourist magnet. Much of this is owed to Vienna's grand, illustrious past and its beckoning future. There are many things for an engineer to see in Vienna as it has seen so many cultural, scientific, and technological changes over its long lifespan. Some interesting features to check out include:

St. Rupert's Church

The oldest church in Vienna, St. Rupert's Church has stood for over a millennium, dating back to 740. St. Rupert's is a small, humble church compared to many of the more extravagant churches seen throughout Europe. However, it still covers an area of three hundred fifty square metres. It is a prime example of Romanesque architecture which was the primary style during the early medieval era. Romanesque architecture is primarily identified by its use of semi-circular arches, but also known for their enormous walls and elegant simplicity especially in comparison to the grandiosity of the gothic style that succeeded it. The church also features the oldest bells and stained glass window panes in Vienna.

St. Charles' Church

In stark contrast to St. Rupert's Church, St. Charles's Church is a standard of the Baroque style of the seventeenth and eighteenth centuries and is characterized by its enormous size, and awe-inspiring, overwhelming complexity, and decoration. Completed in 1737, the church covers an absolutely enormous 2200 square metres. The millennium difference between St. Rupert's Church and St. Charles's Church allowed for massive advances in technology, allowing for larger, more elaborate buildings, as well as more intricate styling. Engineers can appreciate the little advances and techniques used to make such large, breathtaking, majestic buildings.

Karlsplatz Stadtbahn Station

For those more interested in modern engineering feats, there is the Stadtbahn which is Vienna's light rail mass rapid transit system. Light Rail really took off



Cyril Cepissak

St. Charles' Church was completed in 1737 using partially altered plans

in Germany and Austria in the '60s and '70s, but fell out of favour during the '80s due to cost. However, the light rail from the past is still in use today. Built in 1899 and converted to Stadtbahn in 1961, Karlsplatz station used to be part of the Stadtbahn network, but no longer. It is a great example of functionality and elegance successfully fused. This is best represented by the exterior, which consists of marble built on a steel framework. The buildings today house a café and exhibition space for the Vienna Museum.

The Heeresgeschichtliches Museum

This museum, which I won't even try to spell again, is a military history museum. In fact, it claims to be the oldest

one in the world. The military is one of the places where engineers find employment and, in both war and peace, military engineers are invaluable to every aspect of defense as well as in logistics, relief, and rescue operations. The current structure housing the collections and exhibits was built in 1856 and the museum mainly covers Austria from the sixteenth century to World War Two. Advancements in technology and warfare have changed the role and nature of engineers over the centuries and this museum is a great place in order to see the changes firsthand.

Vienna is a beautiful city and an old city. It has many tales to tell and many it has yet to experience. This city deserves a place on any travelling engineer's bucket list.



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Arsenal Medical gets \$15.5M Grant to Develop Injectable Foam Bandages



NANCY HUI
3A CIVIL

In one scene in *Serenity*, a doctor squirts a bandage onto a wounded character's back using a hot glue gun-like device, sealing the wound. But what about bandages that you can inject into someone to stop internal bleeding?

The US Department of Defense's Defense Advanced Research Projects Agency awarded Arsenal Medical a \$15.5 million grant in December as part of its Wound Stasis program. Arsenal Medical is developing a technology that would serve as the first ever

method for slowing internal bleeding on battlefields. Currently, internal bleeding cannot be halted using conventional methods, in that field medics cannot tourniquet a whole abdomen or chest, and the chances of surviving a trip from the field to a medical facility with internal abdominal injuries and internal hemorrhaging are quite slim.

The technology is delivered to the injury via two liquid phase injections into the abdominal cavity. The injections are through the belly button, which minimizes the chances of injecting into a major artery. Once combined in the abdominal cavity, the two liquids expand to thirty times their original volume and harden into a solid, conforming to the internal shape of the abdomen. The hardened foam

then puts enough pressure on the injury site to reduce blood loss sixfold before a surgeon removes the block of foam and implements a more permanent solution to the wounds.

The difficulty in developing this foam technology lies in finding mixtures that would develop the proper properties to apply pressure to a wound. The foam cannot solidify before it has expanded sufficiently, nor can it take too long to form. It must be of the right hardness to apply pressure to bleeding, and it must be easily removable without damaging any organs. Arsenal Medical tested 1200 foams, finding 15 that met regulations for animal testing, but only one polyurethane foam that expanded correctly and did not mix with blood, but instead pushes it back towards the

site of bleeding.

Preliminary but promising test results were presented at the 2012 meeting of the American Association of the Surgery of Trauma in Kauai, Hawaii. The livers and large veins in pigs were cut, and then the foam was injected to stem bleeding. 72% of the injured pigs were still alive after three hours, compared to 8% without the foam. Afterwards, surgeons were able to remove the foam in sixty seconds.

The long-term effects of the technology after the foam is removed is still being studied. Arsenal Medical will be working with the U.S. Food and Drug Administration to have their technology approved for use in the field. Sean Maher not included.

3D Printing for the Everyday User



ZACHARY GRINGAS
1B NANOTECHNOLOGY

There have been many advances in technology over the past few years, but few of them show the magnitude of potential for mainstream applications as the invention of 3D printing. 3D printing is a multi-purpose form of additive manufacturing that has recently exploded in popularity for both personal and professional use.

Over the past few years, 3D printing has become a much more commonplace due to a dramatic decrease in price for both printers and printing. Because of that, we are seeing these machines starting to pop up all over the place, including at the University of Water-

loo's Architectural Campus for rapidly creating prototypes. New printers are constantly being developed for lower costs, including some with the ability to print themselves! Soon, everyone will be able to have one of these machines.

With their increasing popularity, companies have already started to take advantage of 3D printers for their products. Recently, Nokia released an entire 3D Autocad file of a phone case for their brand new Nokia Lumia. These files can be directly taken and printed out using a 3D printer. That's right; you now have the ability to print your own phone cases!

However, the uses extend far beyond the simple commercial use, becoming a quick favourite with professional companies. Advances in 3D printing allow for materials appropriate for manufacturing to be printed

straight from the printer, allowing them to rapidly manufacture a multitude of components from an army of printers.

As well, many professions are finding a home for the 3D printer right in their workspace. Movie props are now being printed, up to and including a 1:3 scale model Aston Martin used in the latest James Bond film. Prosthetics can be made easily using 3D printing as well as CAT scans in the medical industry.

And to put these printers even higher, in

a blend of technology and design, 3D printing has even become a form of art! Through sculptures on CAD and a variety of possible mediums to print in, even the artistic world is changing from this innovative technology.

It is very rare that a technology comes along with the ability to revolutionize our daily lives. However, with such a wide range of uses, and an increasing availability to the public, 3D printers might just change our daily lives within a handful of years.



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UN Calls for Israel's Withdrawal from West Bank



NINA FENG
RESEARCH TEAM

The United Nations has ordered Israel to cease the creation of Jewish settlements in Palestine, particularly in the West Bank area. This decision comes after decades of Israel forces occupying Palestinian land, establishing about 250 settlements with a population greater than 500,000 people. A panel of three judges from the Human Rights Council completed a six-month inquiry into the conflict, drawing on input from government officials, academics, civilian representatives, and diplomats, before presenting their findings to the UN in Geneva. In their report, it was determined that the Israeli activities are a violation of the Geneva Conventions and can be con-

sidered war crimes by the International Criminal Court (ICC). The transference of a country's civilians into occupied land is prohibited by international law. Accordingly, the UN has decided that Israeli settling activities must end immediately and all settlers must leave Palestine territory. Their presence is stated to have violated human rights by inhibiting the establishment of Palestinian infrastructure and communities, and disrupting civilian access to water, resources, housing, and education. For these crimes, Israel may have to face the ICC.

Predictably, the findings have been praised by Palestinian officials and anti-settlement advocates, but dismissed by Israeli government officials who state that the Human Rights Council has always been biased and eager to paint a harsh picture of the country and its practices. It may be noted that Israel has already aban-

doned several settlements in the Gaza strip and some in the northern West Bank, an event that the council did not allegedly bring much attention to. Also, Palestinian groups have committed their own share of attacks on Israel. Many argue that the atrocities committed by other countries have been overlooked in order to attack Israel in particular. Israel has recently refused cooperation with a human rights review, the first nation to do so. Although most nations recognize the area as belonging to Palestine, it had previously been a part of Jordan, and its relinquishment from Jordanian rule had left some ambiguity to its current ownership. It is the belief of many that the two-state solution (the identification of Palestine and Israel as two separate states, with the West Bank being a part of Palestine) is the most practical and favourable solution to the conflict, but thus far Israel's actions have not helped in

coming to any agreement. Israeli officials believe that, instead, direct negotiations should occur to decide the issue. They reason that if the ownership of the land is still up for debate, then the classification of Israeli presence in the area as 'occupation' is also up for debate. The HRC's findings, however, are based on the stance that the rest of the members of the UN have taken: that the West Bank is indeed a part of Palestine and the encroachment of the land by Israeli groups is prohibited.

No matter the ownership of the land, the Israeli settlements are still an effective and unfair way to annex the land and impede Palestinian development and way of life. The UN decision comes as a way to hold the Israeli forces accountable for what they've been doing for far too long. However, without their cooperation, there may still be no end in sight to this decades-long conflict.

Harnessing the Power Behind Social Movements



FILZAH NASIR
RESEARCH TEAM

January 28 finally saw the return of MP's to Ottawa to begin the parliamentary session of the New Year. Coinciding with this date was a Global Day of Action, organized by Common Causes, which strives to bring together social justice, environmental, human rights and other progressive movements within Canada. There were rallies and demonstrations planned in over 20 cities across the country with the largest one being held in Ottawa. The events in Canada were also meant to express solidarity with the Idle No More movement.

One week into February, some might say it's a little too late to be talking about the milestones of 2012. But now that the New Year buzz has cooled off, it's important for us to look back at what really happened over the previous year. 2012 was a year of massive social movements in Canada. The year began with the Quebec student strike, the successful campaign by the student population of Quebec against a planned tuition hike. They managed to have an election called and forced the Province's Premier to resign. The year ended with Idle No More, a movement of Canada's Indigenous People to speak out against proposed funding cuts and treaty violations. The movement has drawn out hundreds of thousands of people and has gained international attention. Those were the most notable but there were also the protests in B.C. against the proposed Northern Gateway Pipeline, the ongoing struggle of the Ontario Teachers against the violation of their collective bargaining rights, and the demonstrations against the budget bill in the spring. That is an impressive list. Factor in that all of these movements were wholly Canadian – organized by Canadians against the actions of their own governments and the list becomes even more awe-inspiring. As a populace best known for general apathy, it's hard to believe everything all this happened in the same year.

But what was actually accomplished? People took to the streets in droves to protest government actions and make their voices heard, but comparing the numbers with the results: one can see that there is no correlation. In Quebec a new party was elected and the tuition hike was delayed. But the greater cause behind the strike, the fight for accessible education and a push back against

the corporatization of universities was mostly ignored. The results are even more disappointing for Idle No More. The Prime Minister and the Governor General separately met with First Nations Chiefs to discuss the movement but no final decisions or a plan for improvement was reached. Although Ontario has a new Premier, there has been no mention of repealing Bill 115. The Omnibus Bill was passed with no amendments and no final decision on the Northern Gateway pipeline has been reached.

So the question remains: why isn't the massive energy of the streets being translated into change? According to the media, the main problem of social movements today seems to be that they have no concrete demands. When people turn out to the streets in recent years, they are not necessarily protesting a government action or demanding the overturning of a law, they are often trying to counter a conservative right wing agenda in Canada and internationally as well. But while this does not necessarily mean that these movements are less likely to succeed, it does mean that they have to change the way they function. No protest, no matter how massive, will ever convince the Harper government, for example, that they need to completely change the platform that has given them their mandate. And in a sense that is what Idle No More was trying to accomplish. Activists, then must realize that they have to change the way they approach this situation. How

can we harness the energy of hundreds and thousands of protestors and turn it into real progressive change? Enter the world of organized politics.

Activists have traditionally shied away from organizations for a multitude of reasons, many of which are valid even today. The most important one of course is that political agendas are built on a platform of maximizing short-term economic growth with other concerns such as social services, environmental issues and human rights occasionally factored in. The level that a group chooses to factor these concerns into their agendas will dictate where they fall on the political spectrum. Most activists on the other hand see this entire system as problematic and do not believe that real social change is possible when it's only dealt with as a sidebar to the main concern of economic growth. And thus, activists do not enter organized politics based on principle. But as EWB'ers love to point out, you cannot change a system without entering it. During the provincial election in Quebec, CLASSE, one of the main groups organizing the strike refused to acknowledge the election and thus students were unable to coalesce around any single party. Unfortunately, there actually was a political party that truly represented the interests of the student strikers. Quebec Solidaire, the party whose spokesperson was arrested as part of the protests and whose platform promised free education for Quebec's students. By refusing to show their support for the party, the

student cause was actually hurt, as vote splitting and the FPTP electoral system resulted in them winning only 2 seats.

The situation in Quebec though, was unique. There is rarely ever a well established political party that truly represents the interests of the activists and progressive voices in the streets. This is why activists must take it upon themselves to form such parties or join existing ones. One of the major problems in our world is that power is mostly concentrated and restricted to a few political insiders. As protestors on the street we are asking them to acknowledge our concerns and use their power to change the system. But if we as activists, entered the world of organized politics, we stop asking to be acknowledged by those in power, we start trying to seize that power away from them. And that would be the first step to changing current power structures.

The pitfalls of organized politics are clear. It would involve activists entering a system which many of us see as corrupt and perhaps irreparable. It may involve a violation of principles for many of us. But while social movements are still useful, and even necessary, to hold governments accountable and express our discontent to the general public, they cannot be our only venue for creating change. One of main tenets of democracy is that if the people in power are not on the side of the majority, they should be replaced. But somebody needs to do the replacing: and it's time for activists to step up and change the system.

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THE FINER THINGS OF FINE ARTS

Likely the most ancient of the fine arts, music has been around for as long as humans have had mouths to speak and ears to listen. It has changed and developed so much over the course of history that an expert in the field can listen to a piece of music that they have never heard before and give you the time period it was composed in, and perhaps even the composer it sounds most like. This is because, like all forms of art, each piece is heavily influenced by the nature and skills of the artists themselves, and there are many hidden details and flavours hidden in the music that give certain composers a unique and trademark sound.

When it comes to 'classical' music, which likely is what comes to mind when 'music' and 'fine art' are coupled together, it is good to note that this usually refers to a very broad range of music that exceeds the true definition of 'classical'. Music is categorized by the time period it occurred in, like the simple, kingly melodies of the renaissance times. The composers from this time are not as widely known as others, and their ensembles were often rather small. This time period, however, was important historically, as it introduced many new concepts into music and even saw the beginning of opera.

The baroque time period that followed is fairly easy to distinguish, as its ensem-

bles contain far more strings than any other instrument, with the harpsichord as a very prominent instrument. It often featured many different but simultaneously moving melodies, known as a 'polyphonic' structure. Significant composers include Bach (extremely famous for his improvisational piece, 'Tocatta and Fugue'), Handel (his 'Messiah' is particularly fantastic), and Vivaldi (most known for 'The Seasons').

The true 'classical' music came afterward, and was very separate from the baroque style for its simplicity in melodies, where the baroque was fairly dense and complex. The piano became more popular than the harpsichord in this time period, and the woodwinds became more prominent and featured in the music. Haydn and Mozart hail from this time period, and were actually friends; they both had a hand in teaching Beethoven, whose compositions bridged the gap between the classical era and the following romantic era. Some of their finest pieces included Haydn's Oratorio, 'The Creation', Mozart's opera 'The Marriage of Figaro', and Beethoven's emotional piano solo, 'Pathétique'.

The romantic movement of music directly coincides with romantic eras in the written and visual arts. Mendelssohn, Chopin, Wagner, Brahms, Holst, Tchaikovsky, Strauss, and Rachmaninoff are all common names for this time period. Most prominent in this time is the far more extensive use of brass instruments, allowing for grand orchestra music, and a greater complexity in terms of having recurring themes and thematic portions. Romantic music can tell a grand story to an attentive listener in this way-- in fact, 'symphonic

poems' rose to fame in this time period, which are pieces composed specifically to evoke emotions and tell a story to the audience without any spoken words. Some good places to start exploring the field would be Mendelssohn's 'Songs without Words', or any of Rachmaninoff's four Piano Concertos.

The twentieth-century brought about greats such as Aaron Copland, and his famous 'Fanfare for the Common Man', and then afterwards the modern composers, many of whom gain their fame through their work scoring films, such as James Horner, Hans Zimmer, Alan Silvestri and John Williams. What makes these composers of particular interest is the imitation that they often have to do in order to obtain the impression of period accuracy, but often still retain a little of their distinctive trademarks-- just compare John William's work with *Harry Potter* to *Star Wars*, and *Saving Private Ryan* to *Schindler's List*. While the first two are built upon fantasy and fictional worlds, *Star Wars* was heavily inspired by Holst's 'The Planets' and shared many of its large, brassy qualities and other-worldly melodies, whereas *Harry Potter* has some of the instrumentation and melodies often heard in early Renaissance music, with the iconic main theme played on the magical and haunting celesta. *Saving Private Ryan* and *Schindler's List* are both films about World War II, its tragedies and the human struggles that result from the terrible nature of war, the two have entirely different tonalities. *Saving Private Ryan* favours the sorrowful, but courageous brassy sections that give a sense of irrefutable duty and patriotism, while *Schindler's List* seeks



IMDb

Saving Private Ryan utilizes orchestral music to convey emotion

to tug each heartstring possible for such a powerful film, with its solo violin's lonely call and minimal focus on the accompanying parts leaving an emotional and empty feeling to the atmosphere.

Despite all of the variance, music has been one of the very few constants throughout history. It has served for generations as entertainment, enlightenment, and inspiration for the people who take the time to listen to and enjoy the many finer points and efforts that the composer took into perfecting the rhythms and melodies just for our ears. Perhaps above all other things is the unique experience that the music gives everyone, if only they take the opportunity to seize the gift.

James Gordon, Gotham's True Guardian



DANIEL OSORIO
2T NANOTECHNOLOGY

UNSUNG HEROES

I have preached too long and too much on what a hero is, and, when considering people like Aquaman or Green Lantern: truth be told it's not hard to do the right thing when you have the fire power to back it up. Then again, I have spoken about heroes like Robin and Ant-Man: again, it is not difficult to be a hero when you're a super-genius, or have so much money you can buy a car that can hit 260 mph without breaking down and still have enough gadgets on it to take down a small country. See, in this article I want to talk about the supporting characters, the ones who don't wear costumes, the ones who got to do all of the dirty work and get little credit. I'm talking about the Alfred Pennyworths, the Mary Jane Watsons, or all the Rick Jones type characters out there. But there is one man in particular that I hold above all others: he's the representation of incorruptibility, the shining hope of mankind, and he represents all the good hearted cops out there in the real world. I'm referring to James Gordon Sr., Gotham's true guardian. **WARNING:** contains spoilers in certain Batman Story arcs.

Gordon began humbly as a police officer in Gotham City, a.k.a the worst place to live on the planet. Starting as a beat cop, you'd think he'd spend his time learning the ropes and trying to get on his fellow officers' good side; instead, Gordon decided to hunt down and weed out the corruption within the police force. While investigating corruption within the city council election, he soon found that two of his fellow officers were dirty cops, and

chose to take them down publicly to show Gotham the corruption within the city. Not soon afterwards, he foiled a robbery attempt that exposed a mafia capo which made Gordon a celebrity within Gotham. Fearing that his work would soon unearth all of the corruption within the police department, Captain Loeb requested he transfer to Chicago. While in Chicago, Gordon did the exact same thing, exposing the corruption in the Chicago police department and taking down several dirty officers in the process. During this time, Gordon took criminology, which made him eligible for the role of detective. Acting on this, the commissioner of Chicago PD requested that he be transferred to a detective position that just opened in... Gotham City (yeah, the logic behind this baffles me too). Back in Gotham, Gordon did what he did best and took down more dirty cops, this time with the assistance of Batman, his one true ally in all of Gotham. With Batman's help, Gordon took down the entire police department and was put as acting Captain. He handpicked an entire new team to be the new Gotham police department. Eventually, Gordon moved up the ranks and took down most of the mafia, with Batman picking up the small percentage that fell through the cracks. Within a year, Gordon and Batman cleaned up the police department and put a big hole in the mafia. Gordon went on to be the sword of justice in Gotham city, taking down the residual mafia rackets that still existed and fighting new super criminals like the Joker and Two-Face.

Now, there is a lot more to Gordon's story that I'm leaving out, mainly due to the fact that it would make this article longer than the declaration of independence, but I'd like to mention some of his defining story arcs. Gordon has indomitable willpower; he is able to suppress the most bas-

ic and primal human emotions to uphold morality and justice. In the world famous story arc, The Killing Joke, Joker kidnaps Gordon and cripples his daughter Barbara Gordon. Joker then begins to torture Barbara while stripping her of her clothes and taking pictures throughout. He then takes Gordon and sticks him in an abandoned amusement park ride, strapped to a chair naked, while forcing his eyes open and showing him the pictures of his daughter. Joker was trying to prove to Batman that any man can fall to the darkness after just "one bad day". When Batman shows up and saves Gordon, Batman is ready to break every bone in Joker's body. However, Gordon stops him, saying: "No, we have to show him that our way works." Gordon then arrests the Joker and brings him into custody, keeping his own sanity intact and upholding his moral standards.

Gordon believes in the justice system, which some may call foolish and wide eyed; he sees it as a light people can

look to for hope of good in the world. No criminal is off his radar. He takes no emotion into the job: he'll take down friend, ally, and family if they become evil. This is portrayed beautifully in the story arc Black Mirror. In this story, Gordon and Batman hunt down the Peter Pan killer, which turns out to be his son James Gordon Jr. After finding this out, Gordon takes him down just like he would any other criminal, by the book without a shred of mercy.

Gordon can do what most heroes can't do: leave emotion at the door and do what needs to be done. Even without years of training or super powers Gordon has taken down killers, the mafia, and super criminals. He weathers each blow to his life and keeps his crusade to rid his city of crime. Gordon is an extreme view of what a hero needs to be, and he gets too little credit for it. Gordon is the embodiment of hope the people of Gotham can look to; Gordon is Gotham's true guardian.



Animation Magazine

James Gordon fights crime while upholding his moral standards

Dating in Kitchener-Waterloo

What's There To Do?

**KEVIN JOSEPH &
FARZI YUSUFALI**
3T NANOTECHNOLOGY

With a very special day in the middle of February coming up, you're probably wondering what you're going to do with your significant other. But on a student budget and in a small town like Waterloo, it's tempting to say that there's simply nothing to do. We, however, disagree and think that there is a lot of charm to this quaint town, and have decided to share with you our wisdom on some student-friendly dating solutions.

Coffee Dates

The coffee date is a staple of the crucial non-committal (read I-can-pretend-this-wasn't-a-date-if-it-goes-poorly) dating scene. It's casual, can be as short or as long as you want, and you satiate your need to buy things while socializing at a minimal cost. The ideal coffee-date is cozy, quiet, has comfortable seating, and, of course, a good selection of coffee, tea and snacks. While David's Tea and Starbucks are popular spots to get your caffeine fix, they lack the ambiance and character which you'd ideally want on a date. Here are our picks for a good coffee-date in KW.

Located on 84 King Street North, **DVLB (Death Valley's Little Brother)** bills itself as a "craft espresso & whiskey" bar. Its atmosphere is very rustic: the décor comprised of mismatched wooden furniture, copper-coloured fixtures, warm lighting, and music featuring the likes of Otis Redding and Creedence Clearwater Revival. In short, something of an aging hipster vibe. Of course, even if that isn't your taste, the coffee is worth a shot as it offers what is easily some of the best lattes in the city.

If coffee and Macbooks aren't your forté, make your way to 79 Regina Street North, **Lotus Tea House** for a simpler and peaceful atmosphere. Unlike most restaurants, this date spot is actually a converted house which boasts comfortable seating, hidden corners, and all the Buddhist reading material you could want. Feel free to explore the upstairs library and meditation room, or just go straight to the comfortable and homey dining area. The selection of tea is all made in-house with dubiously credible health benefits. While we're unsure if you'll actually gain longer life or improve your memory, we can attest to the fact that the teas are delicious. One thing to note is that the menu is vegan, making it friendly to even the strictest of diets.

Food Date

If you're a little more comfortable with your date and want to try eating out, Waterloo is home to several charming cafés and restaurants. For an ideal dinner date you'd want a fuller menu, good service and seating (which unfortunately knocks out Burrito Boyz), and the ability to actually hear one another. As a student, we're expecting that you don't want to break the bank, nor should you. We believe that character can make up for austerity, especially while we're young.

For a great lunch date, we recommend **The Raintree Café**, located at 220 King St N, behind Phil's Grandson's Place. Don't let its neighbour deter you; Raintree is colourful, light and casual. Its unique layout provides privacy between tables while still maintaining an open atmosphere. With seasonal daily specials and a solid regular menu, you can expect the food to be very fresh, vegetarian-friendly, and reasonably priced. Especially recommended is the Ve-

nus dip (artichoke, garlic and asiago) which would be enough on its own to warrant a recommendation.

Princess Café, on 46 King Street North, has a lot more to offer than just grilled cheese after a night of clubbing. With an excellent selection of drinks, paninis and salads, what really makes this place stand out is their dinner-and-a-movie special available everyday which offers an entrée, appetizer, drink, dessert, and movie admission to either of the Princess Cinemas for only \$20. The atmosphere is your standard café fare with mismatched furnishings, clean décor, and super-colourful napkins. For those who have yet to go, the cinemas are locally owned and often feature the best limited releases, documentaries and cult-classics. Also, who doesn't like to stick it to the monopolizing Cineplex giant?

Activity Date

For people who would rather do than talk, there is the one-night stand. For those who are a little more romantic, but still not as chatty, activity dates allow for a shared experience with minimal larynx-stimulation. An ideal date allows for you to do something together rather than simultaneously individually. A couple obvious (and frugal) options include skating at Town Square in Uptown and going for a walk through the beautiful Waterloo Park. But if you needed us to tell you about those then we doubt that you have a date considering you haven't left your room all term.

For those who like a little culture, check out the **Registry Theatre** at 122 Frederick St in Kitchener. Every week there are a variety of shows from silent film nights to live jazz shows to dance performances. The prices are reasonable and the outing is

unique and memorable.

The Museum, on 10 King St W in Kitchener, is another outing that offers you and your date something new. They feature a myriad of exhibitions that include the usual electricity room, Plasma Ball, and aquarium. Much like the Ontario Science Centre, there are also featured exhibits that are only viewable for a certain time; however, one major difference between the former and this venue are the number and sheer variety of events held every week - for example, No Name Wednesdays are such weekly encounters at The Museum.

Well, there you have it. While this is a long list, it's certainly not a complete one. Waterloo (and Kitchener, for that matter) is home to an assortment of establishments that boast character and flair of which, if not for dates, should be explored just for the sake of trying something new. With that, we'll keep our farewell short and sweet and bid you adieu!



Kitchener-Waterloo

The Museum has many exhibitions which will make any date night fun

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The Four Loves



Valentine's Day is in two Thursdays. The preceding sentence should be read with a profound lack of enthusiasm. Western culture fetishizes romantic love to chocolate-covered, floral-festooned extremes. What about the single people? What about monks? What about people underneath the age of consent?

According to the Greeks, there are four types of love: Agape, Eros, Philia, and Storge. Agape is the unconditional love of humanity, where Jesus is probably the easiest example to use. Or Superman. Eros is romantic love, characterized by a need to develop a deep emotional connection with another person. Philia is friendship, sometimes developing from shared activities, but eventually transcending them. Storge is the fondness that comes from closeness, like with family, or through shared experiences.

So here's five movies that cover the four types of love.

Agape: *Casablanca* (1942)

Rick (Humphrey Bogart) runs a nightclub in WWII Casablanca frequented by Nazis, refugees, and petty crooks alike. His determined neutrality is threatened when he comes into the possession of two letters of transit allowing their bearers to travel unimpeded around Nazi-controlled Europe, followed soon after by the reappearance of his former lover, Ilsa Lund (Ingrid Bergman), and her husband, Victor Lazlo (Paul Hen-

reid), both desperate to leave Casablanca.

Its reputation as one of the best movies ever made was the only reason I ever watched *Casablanca*. Did it live up to that reputation? Sort of. I mean, *best movie ever* is hard to live up to. But the acting was good and I certainly empathized with Rick's decision as to who should get the transit letters is the eventual triumph of Agape over Eros. It's a refreshing change from when modern action heroes give up their superior strategic positions to save the girl. I don't know if I'd do the same thing in Rick's circumstances, but I hope that I would.

Eros: *Django Unchained* (2012)

Two years before the start of the American Civil War, Django (Jamie Foxx) is unexpectedly freed from slavery by Dr. King Schultz (Christopher Waltz), a German dentist-turned-bounty hunter. They partner up to hunt criminals and rescue Django's wife, Broomhilda (Kerry Washington), from the clutches of Calvin Candie, a brutal and unstable plantation owner.

Dr. Schultz's primary motivation for helping Django rescue Broomhilda is his own German heritage, and maybe because he was a bit of a romantic as well. A Germanic legend tells of Brynhildr, a Valkyrie imprisoned in endless sleep, bounded by a ring of fire, until the hero Siegfried awakens her: a love story older than dirt.

Given the epic status of Broomhilda's namesake, I found *Django Unchained* to be sufficiently dauntless. The heroes and villains of Tarantino's latest film are indeed larger-than-life, and wield improbably good aim and loquaciousness. The mooks bleed and scream more than I thought humanly possible. I was very entertained. But is

Django Unchained a love story, exactly? It's been called a love letter to spaghetti westerns and blaxploitation films alike. All in all, the Norse liked a bit of action in their love stories. I think *Django Unchained* sufficiently represents the passion of Eros.

Philia: *Thelma and Louise* (1992)

Two women embark upon a weekend road trip in a Thunderbird convertible. At a restaurant on their first night, a man assaults Thelma (Geena Davis) and Louise (Susan Sarandon) shoots him in self defence. Rather than turn themselves in to the unsympathetic authorities, they flee the scene and attempt to escape to Mexico. It doesn't go well.

Thelma and Louise really touched me with the depth of the titular characters' friendship. Although it was Louise who shoots Thelma's attacker, the women both run. Their shared desperation and intoxication of freedom allow them do things like rob convenience stores, engage in vigilante justice, and lock a cop in his trunk. In patriarchal vernacular, they both grow a set of iron balls over the course of the movie, which was very fun to watch. Even when their escape plans fall apart, but their relationship endures, even over the edge of the Arizona border.

Storge: *Lilo & Stitch* (2002)

An illegal alien experiment escapes from galactic custody and crash-lands in Hawaii, where he is mistaken for a dog, adopted by a girl named Lilo, and renamed "Stitch". Stitch's hobbies consist of eating metal and destroying scale models of San Francisco. There, he learns the way of Elvis Presley, whom Lilo considers to be the epitome of good behaviour, while agents of the Galactic Federation attempt to recapture the ersatz

refugee.

The emotional tone of the movie is set by the phrase "*Ohana means family. Family means nobody gets left behind, or forgotten.*" which reflects the sense of belonging and security that comes with Storge. At the end of the day, who doesn't want to go home and be accepted? Who doesn't want to be loved? *sniff*

Ahem. Distancing myself from my obvious weakness to the Disney doctrine, *Lilo & Stitch* is a lovely, colourful romp, with Elvis on the soundtrack and hula dancing on the screen. It's as friendly and cuddly as a rehabilitated blue-furred, six-armed genetic experiment.

Reviewer's Choice: *Pride and Prejudice* (2005)

At a ball sometime in the late 18th century, Mr. Darcy (Matthew Macfadyen) makes some uncomplimentary remarks towards Elizabeth Bennett (Keira Knightley). Elizabeth vows henceforth to loathe Mr. Darcy for all eternity, to her mother's despair. But they get together at the end after exchanging two hours of witty British banter and long-ing looks.

I actually was going to cap off this column by recommending *Blue Valentine*, but in the interests of the spirit of Valentine's Day and optimism and such, *Pride and Prejudice* is not a bad movie to watch on February 14th. It was the cinematic equivalent of frolicking through a moor on a sunny day with a friend who refuses to speak to you unless you speak in iambic pentameter, but stares at you the whole time. One of the best kinds of friends, really.

Happy Valentine's day and Single's Awareness Day to all!



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Hannah Georgas



Hannah Georgas' eponymous third album sounds like an electronic beating heart, swimming in a sea of some sort of aqueous metal. Well, a waterproof electronic beating heart. While Georgas' first EP 'The Beat Stuff' sounds like the happy, gurgling baby of Regina Spector and Kathleen Edwards, this most recent offering makes Georgas sound like she's waiting for an interview on JobMine. It's bloodily raw and hopeful, with a harsh, acidic finish.

This is supremely obvious in 'Enemies', one of the singles off this album, and my favourite. It's simultaneously a challenge and a threat, with Georgas warning "If we get cut, they're gonna taste our blood." Georgas's vocals cut like a knife through Graham Walsh's throbbing, messy background synth, a point of similarity through the entire album. This is especially true on the slight creepy 'Somebody'. Don't be deceived by the friendly bass and peppy beat; Hannah Georgas is out for sweet, sweet revenge. Just from looking at the lyrics, the song could be a rambling spoken word piece written by a 11 year old that's just seen her crush holding hands with another girl: "I just hope that someday somebody's gonna break your heart/and then you'll finally see what I've felt". It's Geor-

gas' sincerely menacing undertones, though, that make this song brilliant.

The album's last song, 'Waiting Game', is the complete opposite of songs like 'Somebody' and 'Shortie'. Instead of near vapid lyrics with an adorable beat, 'Waiting Game' has some of the most subtle lyrics on the album, matched perfectly with Ryan Guldemond's (of Mother Mother) synth. The truth in Georgas' pleading "I get so hard/I get so hard on myself" needles its way into your heart, while her "I fear my ignorance/Sleep makes me forget" serves as a reminder for that assignment you still have due in 2 hours. The beginning matches the end, while Georgas' starting 'Elephant' echoing the same fears as her last song. The mantra of the song "It's just a little love that I need" can easily be considered the mantra of the entire album, reflecting the note of quiet, calm desperation that winds its way through the entire album.

This thread is beautifully manifested in 'Robotic', the second single off the album. Nowhere else is the 'electronic beating heart' more obvious; Georgas repeatedly calls out "I wanna be robotic/No more blood in these veins/I wanna press reset". And while desperation and release are apparent in 'Robotic', it feels like the only song with a resolution. Others like 'Elephant' and 'Enemies' tend to end with a fireworks display of crying vocals, heavy drums, synth and bass. It feels like Georgas is trying to get all the emotion she has been building up out in one go, but ironically makes the listener feel like there's something missing; like there's

one line that she didn't sing, one thought she held back. 'Robotic', however, has none of that. Instead, there is relief in her voice as she sings out 'I wanna be reprogrammed' that isn't apparent anywhere else on the album. It feels more like a confession than just a clever metaphor.

I came up with the description of the al-

bum as being a beating heart in liquid metal during my very first listen to the album. I should have waited, though, and listened a bit closer. Hannah Georgas, of course, managed to describe the sentiment of her entire album in one near perfect line; "If there's magic on this planet, it's in the water/If there's magic on this planet, it's in my blood".



Canvas Media

Hannah Georgas, originally from Newmarket, Ontario, was nominated as Best New Artist of the Year at the 2011 Juno Awards

Queen's University at Kingston



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Blurring the Lines in Gaming



JON MARTIN
OBI JON1138

FUTURE OF GAMING

Now that the Nintendo Wii U has been released, we have reached the 'Next Generation' of gaming; but this is going to be a very different generation, as the landscape has changed drastically from previous generations. This article, I will mostly be talking about the change in focus from console based gaming to a mix of systems that blur the edges between console, PC, and mobile gaming.

In the last generation (and by this I am referring to Microsoft's Xbox 360, the Sony Playstation 3, and the Nintendo Wii) of console games, there was a fairly clear distinction between gaming modes. When you went out to purchase a game you had to specifically decide whether to purchase it for a specific console, for PC, or for a mobile system. We have also seen the influence of mobile gaming as smartphones and tablets inundate the gaming world, with the ability to force out traditional mobile gaming systems like the PSP or Nintendo DS. Maybe it is a good thing that Microsoft has avoided the mobile gaming market by not releasing an Xbox Portable (or whatever they would call it): instead, they have focused on the growing tablet market, which has become more prominent.

Now, in this new generation, we are seeing Android-based games jump from phones and tablets onto the screen through direct HDMI connections to Android-based mini-consoles. I have previously discussed the

OUYA micro-console which was financed through Kickstarter, but it is not the only one. I won't go into detail about the different versions, but most of them function through a small console or a flash drive type format packing a simple processor and graphics unit similar to a phone or a tablet, and most include some kind of game-pad style controller. These micro-consoles are capable of running Android based games on your home TV and, as technology advances over the next few years, I think we will see even more complicated games becoming commonplace in the mobile realm.

In the same way, PC gaming is slowly becoming more accessible for TV-based gaming. It has always been possible to connect a PC to a TV for home entertainment, but now Valve has introduced Steam Big Picture. This new interface for Steam is intended to offer a more console style dashboard access to games and enable controller input for PC games. This means that it is easier than ever to set up a gaming PC and enjoy full console style gameplay on your TV. A PC-based set-up has a distinct advantage over consoles in that it is infinitely upgradable and is capable of running practically any program you want. Most consoles now have some kind of browser within them, but none are perfect (most aren't even serviceable), but on a PC you can run whichever browser your prefer. As a media centre, you can easily install VLC media player and play any format in existence. But what if you still want a ready-made console? Well then, Valve has you covered there as well, at least in principle. Valve has long been rumoured to be working on a console of their own, known as SteamBox. This concept was again touted at the Consumer Electronics Show in January,

but they didn't actually have a concrete system on display. Instead, a number of companies had tech samples of what a Steam-Box might be, leading to the opportunity for other companies to build a system of their own that meets Valve's requirements and label it a SteamBox. This console would be Linux-based rather than Windows-based like most PCs, so this will probably lead to an interesting situation as Valve has only recently enabled Linux support on Steam. Personally, I don't see the purpose of buying a Valve branded Linux-based PC (which will probably have a mark-up) versus just getting any PC and installing Steam on it. Of course, people would need some basic knowledge to ensure the system they buy as the required specs, but I don't think that is an issue. Most people who know me are aware that I hate paying for a name on a box: if I can get a better product for less money but it isn't as 'popular' then I will definitely sacrifice the name. Who cares if your computer is named after a fruit if it costs twice as much as anything else and the manufacturer treats you like a brainless monkey?

The rumours are already starting about Microsoft and Sony announcing their next consoles at this year's Electronic Entertainment Expo (E3), or around that time at their own press conferences. Sony has apparently decided to go with more commonplace technology rather than using their own proprietary tech. Their choice to use their own tech for the PS3 was a major hindrance this generation as the more complicated development process led to many games running better on the Xbox 360 despite it having slightly lower system specs. Hopefully, Sony can learn from this mistake, and also bring down the cost of their

system as a result – starting at over \$600 was just crazy. Microsoft is rumoured to be incorporating a new version of Kinect into their new console, enabling higher detail motion tracking and eliminating the need to have a separate peripheral. While I support the idea of having a single generic console that can play any game, I hope the added cost for the Kinect technology doesn't add too much to the cost of the console. Another important part is hard drive capacity, where I hope Microsoft is willing to loosen their grip. The price for proprietary memory is a horrible problem in the gaming industry, especially for the PSP Vita cards and Xbox 360 HDD. Including a very basic HDD in a new console (maybe 50 GB) but having it be user replaceable would bring the cost of the console down significantly. Anybody who wanted a terabyte of storage could easily buy a hard drive for around \$100 rather than paying the inflated proprietary prices (\$200 for a 120 GB HDD?).

So, when the new consoles are announced, they will be entering a very different landscape than last time. Instead of a clear distinction between console, PC, and phone games (remember the ones before smartphones?), there will instead be three consoles, rapidly advancing mobile games that merge the line between phone and portable gaming console, android based micro-consoles, and PCs or SteamBoxes offering a game with a single license over both a PC and transferred to your big screen TV. So what are you going to buy next? I guess it depends on what you want to do with the tech, how much you know about modifying your own stuff, and, of course, how much you are willing to spend. So in the meantime, Keep on Gaming.



Sebastian Anthony

This Steam Box prototype codenamed 'Piston' was developed by Xi3

Painfully Plaguetastic Pandemic



JOSHUA KALPIN
2N SOFTWARE

THE SHORT SHORT REVIEW

Greetings readers and welcome to the belated return of the Short Short Review. As a refresher for new readers, I attempt to review a short film, story, or in this week's case, game, in a really short number of words. In the spirit of the "plague" that caused the delay in the column, I will be reviewing the game Pandemic and all of its various spin-offs in 340 words because I can.

Before getting to the merits of the game, time to cover some background information on its origins. Pandemic first existed as a lowly flash game whose premise was to evolve a disease, virus, or parasite to kill every single person on the planet. I know it sounds morbid but the game focuses on a balance between propagation (coughing, vomiting, etc.) and death (aneurysms, internal bleeding etc.). The original game has spawned many clones on almost every plat-

form but the original game is a good start.

Moving on to the actual review (Just under 200 words left), I'll start with gameplay. The gameplay is easy to learn and yet hard to master and as a result it is extremely enjoyable but frustrating. There are times where you will get to a point in the game where it is impossible to win. On the other hand, the reverse can very easily happen too.

Unlike the gameplay, the graphics are a bit underwhelming, but expected for a flash game. The main screen consists of a map of the world with little icons representing hospitals, airports, and hubs. The upgrade view is pretty straightforward as well with various upgrade paths presented in a linear manner. The sounds in the game are also extremely minimal with a repetitive loop track running in the background. Furthermore, there are no sound effects, which makes things underwhelming.

To wrap things up this week, Pandemic and its clones are little bundles of joy and plague. Therefore, the game gets 4 deathly ill people out of 5. Next week we will be returning to your regularly scheduled and normal column. Stay tuned!



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Justin Bieber Overtakes Lady Gaga as Most Followed Person on Twitter



KEVIN JOSEPH
3T NANOTECHNOLOGY

On Monday, January 21, Justin Bieber became the most followed person on Twitter, overtaking Lady Gaga. As exciting as this is for the aficionados of Mr. Bieber out there, Ms. Gaga is still on top on the Facebook popularity index. According to the BBC, "Gaga still leads the way ... with 54.98 million 'likes', com-

pared to Justin Bieber's 50.66 million." Whether or not Mr. Bieber will close this gap is leaving analysts on the edge of their seats as the market sees a massive flurry of likes, pokes, and retweets in response to the still-developing story.

CNN pointed out that "based on their respective rates of growth, Bieber ... [was] projected to overtake Gaga on Sunday afternoon ... but [Gaga] put up a fight." Prior to Ms. Gaga taking the mantle in 2010, the top Twitterer was Britney Spears who is now, according to CNN, only ranked sixth behind Mr. Bieber, Ms.

Gaga, Katy Perry, Rihanna, and even politician Barack Obama. Could a similar fate await Ms. Gaga, or is this just a hiccup in an otherwise stellar career?

The CBC has broken down how Mr. Bieber achieved his success. Taking a look at the numbers, "Bieber has tweeted about eight times more than Lady Gaga has. Both Bieber and Gaga follow their fans back at around the same rate, following about 125,000 people each. But Bieber makes a point of retweeting his fans' posts and following them back". Mr. Bieber's strategy might just be the

new thing in this increasingly competitive market, but only time will tell for certain.

Now, there are some who think that it is absurd that this is an international news story being picked up by serious outlets, and people should have better things to talk about. The CBC, paragon of Canadian broadcasting and journalistic integrity, did cover this aspect of the story by showing memes and tweets that people are posting on the Internet decrying the frivolity of modern public discourse.

The Effect of Cats on the Environment



NINA FENG
2A ENVIRONMENTAL

LEAFY THOUGHTS

With the staggering number of cat pictures and videos on the Internet, even a dog person can start to admit that cats are pretty adorable, though derpy at times. Cats certainly do have their own charm. It's especially amusing to watch them pounce on strange small objects like toys and the infamous red dot of the laser pointer. Their reactions are due, in part, to the fact that they are natural predators, a trait that still lives within them despite generations of domestication.

Owners of outdoor cats have long been plagued by the appearance of deceased local wildlife on their front porch. Killing comes easily for cats. They move very quickly and quietly, have highly sensitive hearing, and are capable of seeing in the dark, something that many of their prey are simply not prepared for. While these small annoyances may seem harmless for one cat, the effects of many cats combined is enough to have a huge impact on the natural ecosystems. For years, scientists assumed that the total number of animal deaths caused by cats amounted to be about 500 million per year in the U.S.A. However, a recent study has shown that the number is actually much, much higher. In fact, it was

found that cats are responsible for the deaths of about 1.4 to 3.7 billion birds and 6.9 to 20.7 billion mammals per year. With roughly 80 million domestic cats and 80 million stray and feral cats in America alone, the number isn't too surprising after all. The majority of the kills are done by the stray/feral cats that eat animals like chipmunks and baby birds in order to survive. This makes a stray domestic cat an invasive species.

The cat problem is not only a problem in the Americas however. It has been found that cats have been responsible for 14% of animal extinctions in small contained environments such as islands. Their effect is also great in New Zealand and Australia. Cats (as well as rabbits and foxes) have been shown to annihilate ecosystems after having been released to the wild. Even wallabies have been killed by cats. Birds such as the wood warbler and the kingfisher have had their nests attacked by cats.

Fear for the safety of endangered birds and small mammals have caused lawmakers in parts of Australia to require cat owners to register, neuter, and microchip their feline friends. This helps in controlling the cat population and differentiating pets and strays. There is no such law in North America, but the population of strays can be controlled by the Trap-Neuter-Release technique practised by the humane societies. An average of about three kittens are born to every stray pairing and TNR technique helps in stopping the numbers from in-



petinfo.com

Cats have a staggering number of pictures and videos on the Internet, yet are responsible for 6.9 to 20.7 billion mammal deaths per year

creasing exponentially. It may also help to keep cats indoors at night, reducing their kills by 50%.

In general, it is best to keep cats indoors most of the time, and to monitor their outdoor activities closely. The number of strays should also be reduced. We cannot guarantee that lost, wandering cats will come back home. Cats that are purposefully abandoned are another

thing entirely. Even in a town like Waterloo we have way too many stray cats that were abandoned by students. This practice is both a disservice to the cat and to the environment. While many cat-lovers won't like to see their pet portrayed as a finely-tuned killer, it can be agreed that it's better for both local wildlife and the cats themselves if they all had homes.



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The SFF Memorial Leadership Award Nominations

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

Nominations for the Memorial Leadership Award can originate from student groups, faculty members, or other individuals. A Letter of Nomination and Letters of Support from colleagues, faculty, and others familiar with the nominee's accomplishments are extremely important and form the major basis upon which the Executive Committee of the Sandford Fleming Foundation will form its decision. Nominations must be submitted to the Foundation by April 25, 2013 and/or before the last day of the student's 3A term.

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

Nominations Must be Submitted to the SFF Office Manager by April 25, 2013.

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www.eng.uwaterloo.ca/~sff**

A Highly Variable Bread Pudding Recipe



CAITLIN MCLAREN
1B CHEMICAL

A HIGHLY VARIABLE X RECIPE

You idiot! You left your bread in the fridge a day too long, and now it's gone all stale! What a waste - it's all crumbly and gross, and worse yet, you have no time to go shopping. What will you do?

Variable recipes to the rescue! Forget sandwiches or toast - stale bread is perfect for bread pudding. It's great as a breakfast, as a dessert, and as anything else (although I don't recommend it as an

aperitif).

To make bread pudding, you need eggs, butter, milk, sugar, and some assorted tasty bits. Also, bread. Take your stale bread, and break it into pieces. Put the pieces into a glass baking pan, and sprinkle melted butter over it. You can put some of the tasty bits in now, whatever you like. Nuts and raisins are very good, or you can get creative and use some carrot chunks. (Hey, we've all been there. Don't judge.)

In a mixing bowl, mix together the eggs, milk, and sugar. For every few slices of bread (5-7), use about four eggs, 2 cups of milk, and a bit less than a cup of sugar- white or brown will do. You

should also put in some vanilla for sure - and don't forget the spices. Cinnamon is the old standby, but it is not the only spice. There is mace, cloves, nutmeg, and many others... but plain is good as well, with a little syrup. Experimentation is good! (N.B. The editorial staff of *The Iron Warrior* denies that the supposed Curry/Ginger/Wasabi/Ammonium Chloride incident ever happened. It is also an entirely baseless rumour that this same incident, which did not happen, led indirectly to the loss of the Editor-in-Chief's pinky toe.)

Pour the liquid mixture over the bread, and let it soak well. Soak before baking, or the pudding will end up both mushy

and dry, somehow. Physics does not apply to bread. When the pudding is uniformly soaked, bake it at 350°F for about 45 minutes, or until it is soft, but solid.

Let your bread pudding cool, and cut it into slices or chunks. Depending on the ratios of the ingredients you used, the pudding might slice nicely like banana bread, or form a cluster of delicious chunks. No matter how it looks, there are multitudinous ways to enjoy it: with whipped cream, hot sauce, maple syrup, fried, or chocolate sauce. Enjoy!

Show this article to your roommate next time you leave food out for too long. It was your plan the whole time, wasn't it?

Out with the Old (Fashioned) in with the New



LUKE VAN OORT & PARTH DAVE
3B MECHANICAL
4B MECHATRONICS

MODERNIST MIXOLOGY

Traditional Old Fashioned

1 measure whisky
1 sugar cube
2 dashes bitters
splash of water
Garnish:

lemon or orange twist

2 maraschino cherries (real ones - not the zombie cherries commonly found. To make them: add Maraschino liqueur to a sealable container of pitted cherries, let sit in fridge for about 2 weeks)

Modernist Old Fashioned on the Rock

Whisky gel
Thickened cherry juice
Spun sugar
Lemon zest
1 Ice cube

Whisky gel:
Whisky
3wt% 220-bloom strength gelatin

Thickened cherry juice:
Fresh squeezed cherry juice
0.3wt% 220-bloom strength gelatin

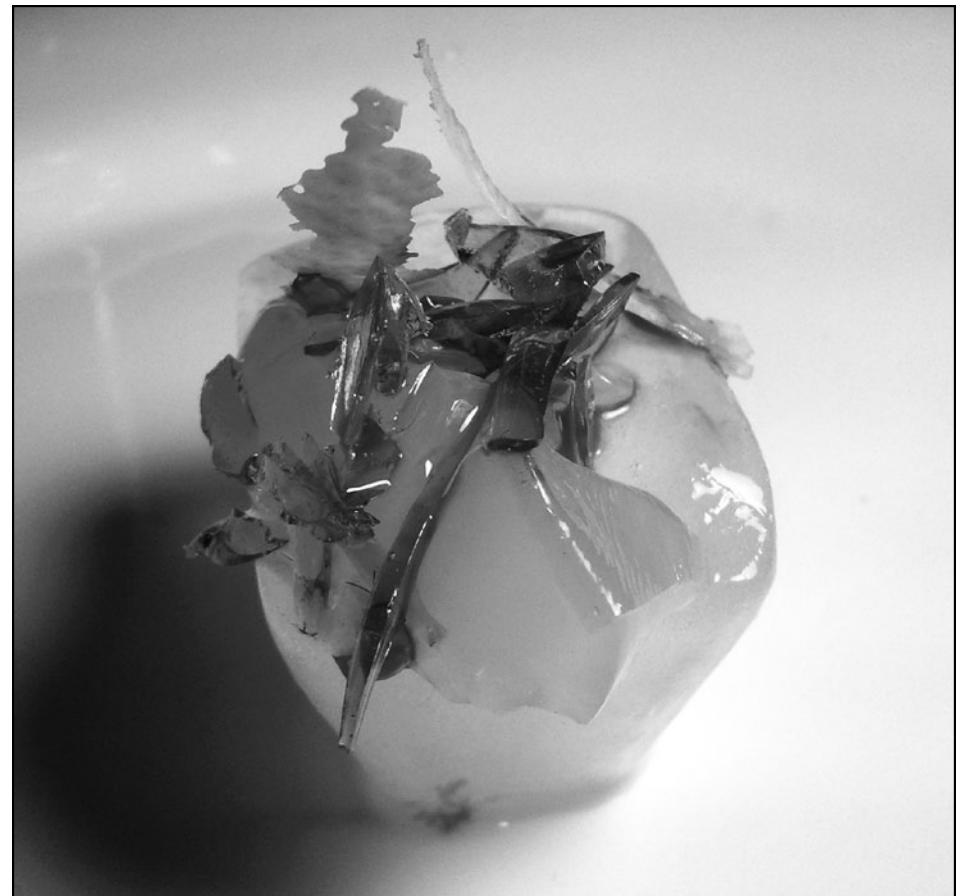
Spun sugar:
1 cup sugar
water as appropriate

The old fashioned is one of the cocktail greats, having been around in one form or another for over 200 years. Recently,

it has been brought back into vogue by the television show *Mad Men*, although Don Draper, while period correct, prepares an Old Fashioned that can only be described as an abomination. For the inaugural edition of this column, we've decided to take this ancient cocktail (arguably the oldest cocktail actually) and update it with an infusion of cooking science and poncy nonsense.

Our Old Fashioned has been deconstructed into its component parts, texturally modified, and served on an ice cube to bring a new spin to "on the rocks." The whisky gel is simple to prepare, especially if one has experience with its plebeian cousin, the jello shooter. Simply heat the desired amount of whisky in a pot, add gelatin, and allow it to cool. A nifty trick is to place saran wrap on top of the gel flush with the surface in order to prevent the formation of a gastronomically displeasing skin. People familiar with making non-alcohol gels will note that the gelatin content is rather high--alcohol destabilizes the majority of hydrocolloids including gelatin. However, unlike most hydrocolloids, gelatin can still form a stable hydrocolloid in alcohol, if you increase the amount used. Here we should note that whisky quality matters a lot in both the Traditional and the Modernist variants. An Old Fashioned is not a beverage that hides the taste of its base liquor under layers of mixers, so don't use the bottom shelf rotgut. On the other hand, using a single malt would also be ill-advised on a university student budget. We recommend something along the lines of Forty Creek or Canadian Club Reserve - not the best, but also not the worst.

Thickened cherry juice is made the same way as the whisky gel, just with less



Parth Dave

Deconstructing an Old Fashioned down to its component parts brings a new meaning to the words "on the rocks"

gelatin as cherry juice is neither alcoholic (unless your cherries are old enough to start fermenting, which would be perturbing), nor is a solid texture desired.

Spun sugar is a fun trick for making your sweetened cocktails and desserts look particularly classy. To make spun sugar, heat up sugar in a pot with a bit of water, adding water whenever the sugar looks like it might dry out. Eventually, you want the sugar mixture to change to a

deep golden/brown colour at which point you take a spoon and spin it out onto some sort of object in thin strands. Give it a second to harden and voilà - spun sugar.

For the cocktail, just place all of the ingredients on an ice cube in an aesthetically pleasing fashion and serve. Beware, the whisky gel readily slides on the ice cube so it can be difficult to keep together; thus, the beverage is best made in the same location in which it will imbibed.

Winter Wonderland Style Tips



MOMMAKNOWSBEST
3A MECHANICAL
3B SYSTEMS DESIGN
2A ENVIRONMENTAL

Now that the cold weather is back with a vengeance, we all know what you're thinking... WHAT AM I GOING TO WEAR?! Well have no fear! We're here to save you 'cause #mommaknowsbest.

Scarves are a great way to keep warm and add some colour and sophisticated flair to any outfit. Often things can get pretty confusing when you're trying to wrap it around you. Should I knot it? Should I wrap it around my face? My neck? My whole body!? WHERE DO I EVEN PUT THIS THING!? Circle scarves take away all this confusion because they look great no matter how you wear them. Don't have a circle scarf? NO

PROBLEM! If you have a pashmina scarf lying around (or any scarf with tassels on the end for that matter), just tie the ends together and BAM! You have yourself a lovely circle scarf!

As a result of Mother Nature PMSing the past week, there has been a great deal of salt being put down around Waterloo to combat the icy conditions. Do you know what that means? Salt stains on your boots. Nothing is worse than those awkward white lines running along the sole and edges of boots looking like boots were actually supposed to have white stripes on them. The solution? Water may help a bit by diluting the salt and reducing the strength of the stains, but the real solution is to use white vinegar. Start by mixing a solution of half warm water, half white vinegar. Take a clean cloth, dip it into the mixture you created and wipe over that salt stain, using more solution

if you are unable to remove the stain the first time and BAM! Your boots are salt free!

Tis' winterview season and time to try something new! What could you possibly add to your winter wear to stand out?? Gets some wrist action going! Decorate that lovely limb of yours with a nice watch. Ladies, try wearing a nice dress to an interview to change it up from the standard skirt or pants outfit. This season has some wonderfully classic dresses that are perfect for an interview! But hey, what about us guys, momma?? Not to fret young men of UW engineering! The key to looking fantabulous is to GET FITTED. Now that you are ready for you interview be prepared for a winter trek! Loop your scarves and de-salt your boots, it's time to winterview.

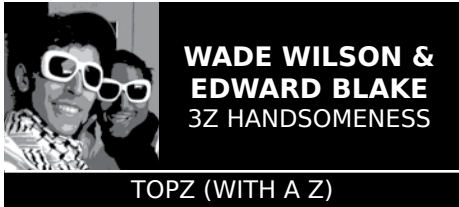
Peace out
#mommaknowsbest



Mommaknowsbest

Making your own circle scarf is just a couple knots away

Top Places to Study on Campus



With a very special day in the middle of February coming up, you're probably wondering what you're going to do with your significant other, scratching your head until it is raw and bloody. You want to go somewhere exciting yet familiar, thoughtful yet convenient, something yet something else (look, the Rule of Threes can be hard sometimes). Seek no further because the best place to STUDY for mid-terms with your F.B. (Facebook buddy) is on campus! Of course, you can't just study anywhere (for legal reasons): you need the right ambience, some privacy, and something else we're sure (seriously, forget the Rule of Threes for now). There are the obvious choices, of course: the upper floors of DP, the Orifice, and the smoke stack on the north side of campus, but you want to really make an impression this year to make up for your partner walking in on you studying by yourself with a picture of her sister. To help you out, we've prepared this list of the top places to study at uWaterloo.

MC Comfy Room:

Foxtrot your way over to the Math and Computing building for a study experience like no other. At the comfy room by the

Math CnD, you and your partner can study in comfort, and even eat snacks while you do it. The plush seating is an ideal environment in which to analyze those curves. Now you might be worried that the math kids might get a little bit rowdy, R-O-W-D-Y, but don't worry only Arts students do that (no disrespect intended – we in no way mean to offend any Arts majors reading this paper. No, the mathies will likely be too shy to confront you about your enthusiastic studying habits and would likely just watch, perhaps being moved to study by themselves.

DC Fishbowl:

Uniform conventions tend to be opposed to studying out in public, and insist that studying be done behind closed doors. On the contrary, the exhibitionist in you and the voyeurs in us suggest otherwise. In the DC Fishbowl you can study such that all can look but they can't touch it. If they touch it then they'll start some drama, and they don't want no drama. You can pretend that you are like squids at SeaWorld, being abused by your cruel trainers as you learn new tricks. Although this area is technically off-limits we are confident that as Engineers you will be able to finish studying with plenty of time to spare before you are kicked out, although we can't say the same about your partner.

The Mike and Ophelia Lazaridis Quantum-Nano Center:

Charlie Chaplin was exiled near the end

of his career for being a communist sympathizer. Privacy isn't always a bad thing, and a tramp like you could learn a thing or two from Charlie. In the QNC you can get the single most important criterion for a good study space: isolation. There are other great aspects to the QNC which make it a prime locale for your studious endeavours. The special lab-spaces will absorb any vibrations cause by pounding your fists, the HEPA filters will take care of body odours caused by your strenuous efforts, and on the off-chance that you actually run into a late-working grad student, simply employ the Rule of Threes and let them help you out with your studying.

Multi-faith Prayer Room:

Kilo by kilo you will be burning the glucose (and fructose, if you're into that ...) but you cannot achieve enlightenment by brute force alone (unless you're into that ...). At the multi-faith prayer room in SLC, the two of you can train your mind and soul by practicing ancient arts such as bokomaru, the Kama Sutra, and tantra. You can also book it for a big group of people who want to study together. UofT isn't the only school that knows how to throw a study party.

B1 Bathroom:

Mike, pay close attention to this point. There is a girls' bathroom in B1 with an interior waiting room. This room has nothing in it but a couch. This room has no windows. It locks from the inside. It was built

for studying.

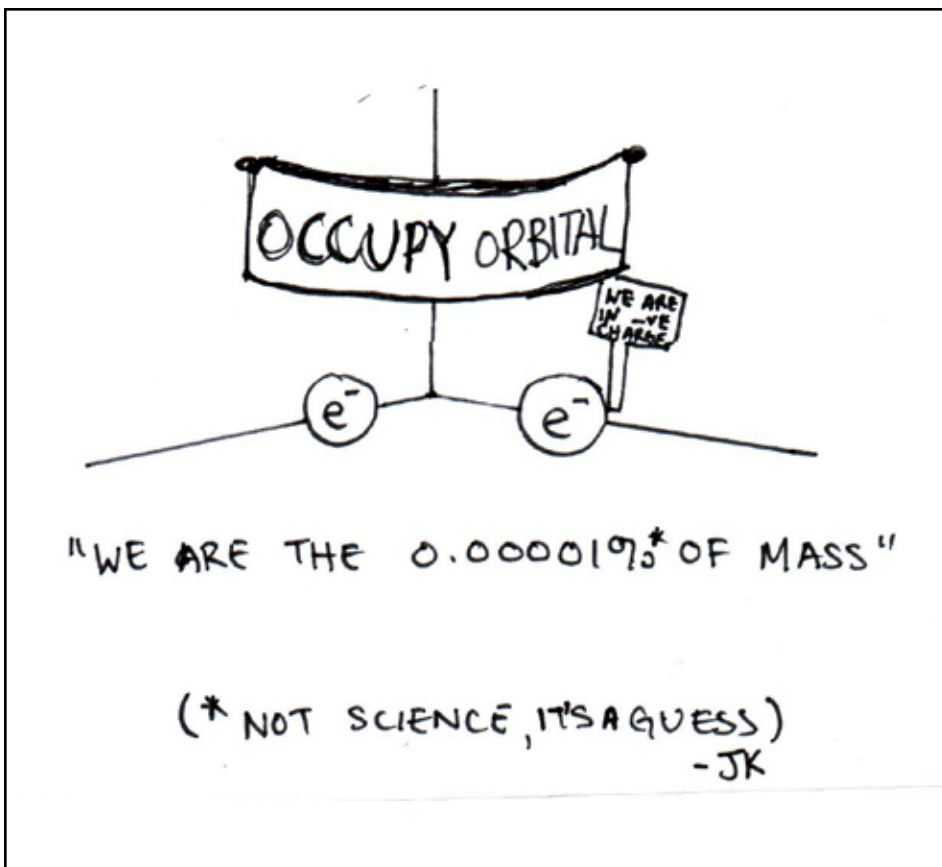
The Iron Warrior Office:

"Echoes are like life, what you send out comes back to you many, many times. Practice loving kindness." This was once said by Grand Master Choa Kok Su, and we couldn't agree more. And so we have decided to share with you our single greatest study-space on campus. The Iron Warrior office has been used by EICs, TSNs, and their F.B.s to study for years. Located at E2 2349A, the office is home to couches for comfort, computers for inspiration, no windows for privacy, and plenty of Topz (With a Z) articles to get you in a productive mood. Now, there is a locked door, and the combination is only given to those who can be trusted with the responsibility. Luckily, we are among the chosen people: the code is "1325". This is meant to be known by a very small group of people, which is why this is the last point in our article. Both of you readers (Ammar and Kevin) enjoy!?

So while those other suckers will be out this year at fancy restaurants and expensive hotel rooms studying, you clever Engineers will be able to be frugal, efficient, and frugal. Who knows, maybe you'll run into us studying! If so, it is of critical importance that you do not make eye-contact. In that state, we will interpret it as a threat. Should you find yourself in such a situation be sure to stretch out your arms to appear as big as possible and make lots of loud noises. This will make us finish studying sooner.

The Iron Comics

Not Relevant Anymore



Jessica Keung
1B Nanotechnology

Too Geeky for Humour



Kyla Rodgers
1B Civil



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The Iron Crossword

Go Betweens

STUART LINLEY
3T NANOTECHNOLOGY

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DOWN

- 1 Twitch
- 2 Tokyo's pervious name
- 3 Even, poetically
- 4 An epic, like "Star Wars"
- 5 Via transport?
- 6 Moses' brother
- 7 Baseball glove
- 8 "___ walk through the valley..."
- 9 Eavesdrop
- 10 Preneur go-with
- 11 One trading in shipping crates?
- 12 Less than two
- 13 Type of rally
- 18 Mouths, anatomically
- 22 Repeat, as Euler's method
- 23 Fish/chips linker
- 24 TV cable type
- 25 Ballroom dance percentages?
- 27 Face of a 45 with more airtime
- 28 "In the nature of" suffix
- 29 Little bit
- 31 Overhead slide material?
- 32 Shark feature
- 35 UFO pilots
- 36 Run, as dyes
- 37 First of 26, backwards
- 41 Snake sound
- 42 Large on-campus gym
- 45 Ginger ___
- 46 Early Pink Floyd member Barret
- 48 ___ a Trois
- 51 Defender of Grayskull
- 52 Rife with laughter
- 53 Carry out, biblically
- 54 Dutch grandma
- 57 Taj Mahal site
- 58 Come ___, bro!
- 59 Clan relative
- 60 Grecian Urn poem
- 62 Present
- 63 Geological time
- 64 French king
- 65 AIDS, for example

ACROSS

- 1 Some shirts
- 5 "Hot ___"
- 9 Officer
- 14 Brainstorm
- 15 Bran go with
- 16 Hydrocarbon suffix 1
- 17 A painter from central Africa?
- 19 Promote (Abbr.)
- 20 That's ___ (Hilarious)
- 21 Pointy math (Arr.)
- 23 Music or Sculpture
- 26 ___ Arbor
- 27 Get it done
- 30 College sports abbreviation
- 32 Sn
- 33 Mode from "The Incredibles"
- 36 Flower or river go with
- 37 Gospel
- 38 Obtain
- 39 See 45-Across
- 40 Opinion from a sheep
- 41 Giraffe features
- 43 Greek Vowel
- 44 He "shrugged"
- 47 With 39-Across, food branded
- 48 "Whaever"
- 49 Slippery, as a certain fish
- 50 Harmed
- 52 Ruckus
- 55 Embarrassed
- 56 Rebellious one
- 57 Fragrance
- 59 Fish pond
- 61 Furtado listeners with a craving for fruit?
- 66 Chapel words
- 67 Greek markets
- 68 Discuss
- 69 Early Nintendo
- 70 "Hirst's" or "Koon's"
- 71 Author Blyton

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

Sudoku

#2013-02

ANDREW FISHER
4B CIVIL

Easy

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

Medium

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

Hard

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

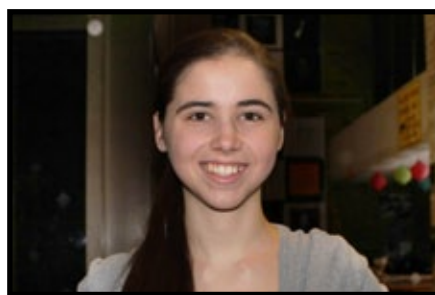
Issue #3 Deadline:
Friday, February 22 at 5:00 PM
Send your submissions to:
iwarrior@uwaterloo.ca

THE IRON INQUISITION
Yola Harsono, 1B Mechatronics
Kevin Veloso, 4C Software

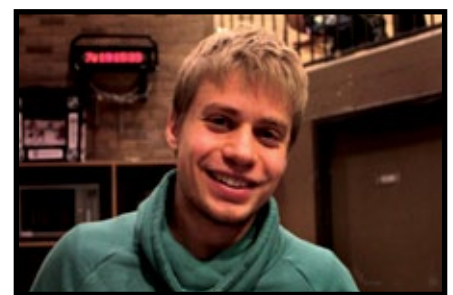
"What are you doing for Valentine's Day?"



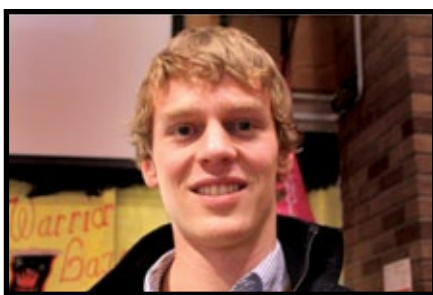
"Having a date with two midterms!"
Kristina Lee, 2A Environmental



"Whatever my boyfriend has planned... hint hint."
Natalie Wennyk, 2A Environmental



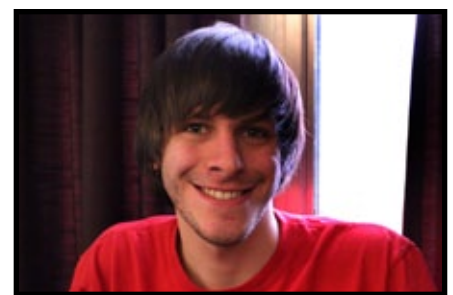
"Being available for adventures."
Denis Belov, 1B Civil



"Oh...? I don't even know! I'm a bad boyfriend to ask. I'll think of something!"
Andrew Easton, 3A Civil



"I'm going to be eating ice cream and chocolate until I blow up."
Alicia Veilleux, 1B Nanotechnology



"Romantic dinner with significant other, followed by V-Day party."
Ariel Weingarten, 3A Software