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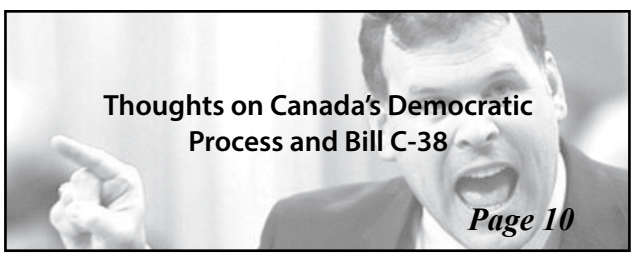
THE IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY VOLUME 33 ISSUE 8 | WEDNESDAY, JUNE 20, 2012



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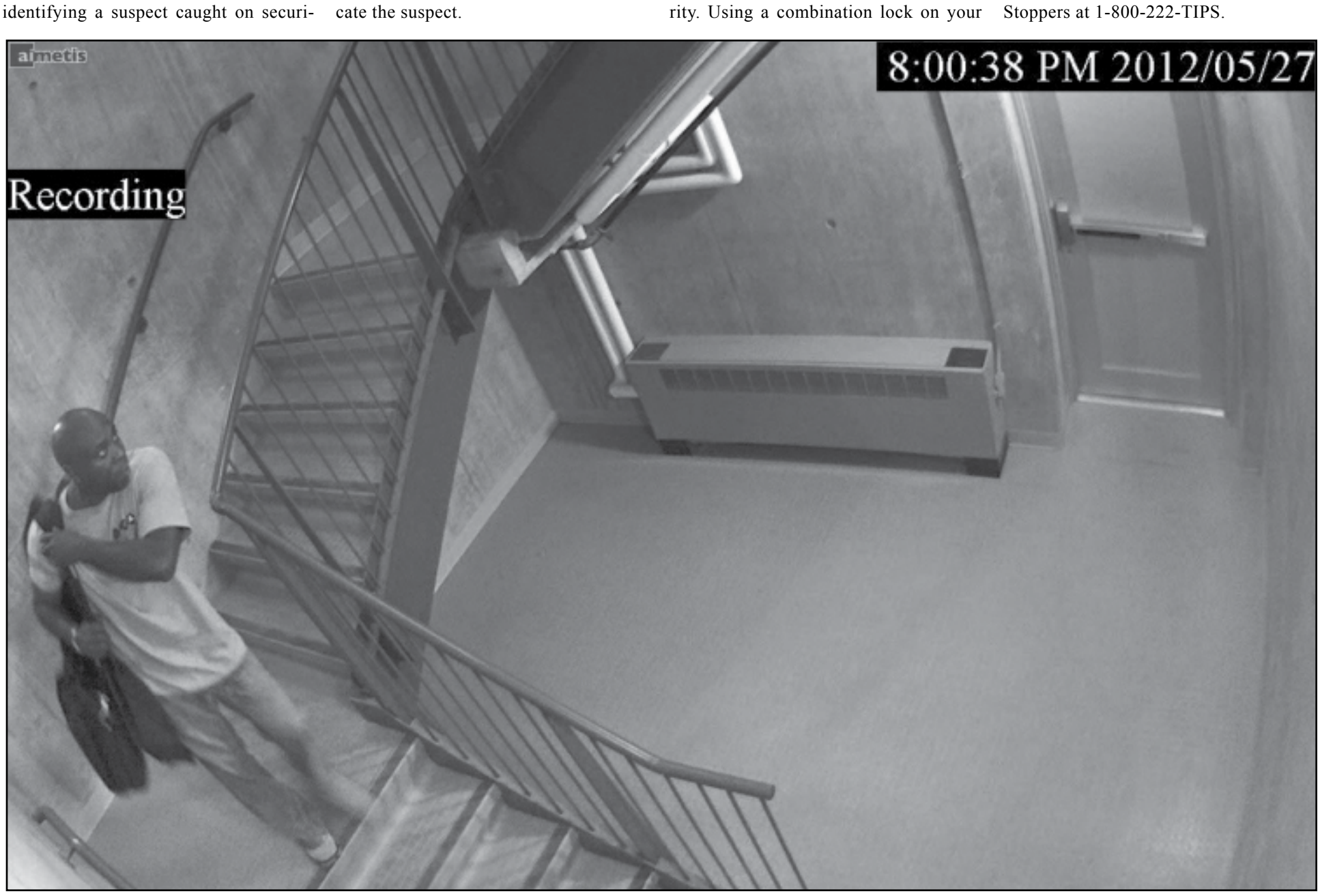
Police Looking for Engineering 6 Theft Suspect

ALISON LEE
3A NANOTECHNOLOGY

There have been two recent incidents of breaking and entering in the engineering buildings, and Waterloo Region Police are asking the public for help identifying a suspect caught on security footage. On Sunday May 27, offices in E5 and E6 were broken into and two laptops were stolen. On the following Sunday June 3, two desktop computers were stolen from MC. As of Friday June 15, no new information had been released and police are still trying to locate the suspect.

This is certainly not the first time that computers have been stolen on campus and a good reminder to safeguard your possessions. Some of UW's engineering buildings are open 24/7, and while this is convenient for working on your own schedule, there is the sacrifice of security. Using a combination lock on your electronics, even at home, is one extra measure that could save you thousands of dollars. The Waterloo North Division Crime Management team would like any information on this case and can be reached at 519-653-7700 x.3339. Alternatively, you can always call Crime Stoppers at 1-800-222-TIPS.



Police Services

Security cameras found a photo of this person in Engineering 6, who is suspected to have stolen computers from Engineering 6 and Mathematics 3.

Management Engineering Program Accredited

NANCY HUI
2B CIVIL

In September 2007, 98 students made history as the first Management Engineering class at the University of Waterloo, the untested 13th program within the Faculty of Engineering. Five long years later, they are about to graduate, as a new breed of engineers.

The Department of Management Sciences at the University of Waterloo has existed since the 1960s, but did not offer any specific programs until January 1969, when it launched its graduate programs. Still, it had no undergraduate program until 2007. The Bachelor of Applied Science in Management Engineering program was designed after three years of planning and collaboration with the Canadian Engineering Accreditation Board (CEAB), which ensures that graduating engineering students have an appropriate knowledge base, analytical, investigative, and design skills, professionalism, and ethics necessary for the academic component of professional engineering license. Graduates of an accredited Canadian engineering program are eligible to apply for the full professional engineering designation in Canada after four years of work experience and passing the Professional Practice Exam.

Over the past five years, the CEAB has been rigorously reviewing academic material as it was being introduced, from lesson plans and texts to homework assignments and exams. As such, it was only last month that the CEAB met and approved full accreditation of the Management Engineering program. This allowed the Management Engineering class of 2012 to convocate on June 16th, 2012 along with other students who completed their last term in Winter 2012.

Management Engineering is also the fourth new undergraduate program to have been added to the Faculty of Engineering, following Nanotechnology (2005), Mechatronics (2003) and Software (2001). Unlike its predecessors, however, Management is a broader program designed to be applicable to a variety of applications. The Management engineering program is designed to train students to efficiently and effectively manage engineering projects by combining a strong technical knowledge base and with the fundamentals of business management. Unlike Industrial Engineering programs at other universities, the Management Engineering program also addresses current issues such as data mining and information technology.

What this all means is that the Management Engineering class of 2012 are the only Management Engineering students in Canada to graduate from an accredited program. I'm not sure how many of the original 98 are left, but I trust that five years in Waterloo have left them hardened to failure, better looking in business formal, faster touch typists, and just more experienced and tougher all around.

Congratulations to our newest accredited program!

Letter From the Editor

Developing an Elegant, Consistent Design

JACOB TERRY
EDITOR-IN-CHIEF

Hello again, battered and beaten reader. I hope hell week has not left you with too many bruises and you're still well enough to read all the articles we have for you this issue. As always, I would like to start off by thanking you for opening the paper and reading what our writers and contributors had to say. Many hours go into writing these articles and preparing the layout for publication, so seeing all of you clear the newspaper racks is quite encouraging!

In this issue, we bring you many longer, richer articles than we have in previous issues this term. Noah's article this week discusses the barefoot running phenomenon, and brings new light onto an often unknown and misunderstood sport. I would highly recommend reading it if you are interested in working on your cardio while providing yourself a challenge to improve your lower body posture and strength.

Bill C-38 passed in the House of Commons a couple days before this issue was prepared, and did not pass without controversy or heavy opposition. Our world news writer Filzah contributed her article discussing the topic to Engineers Without Borders this issue, so you can read her opinions and thoughts on the democratic process in Canada and the hive mind of political parties.

Hannah and Anjali wrote the Point Counterpoint for this week, discussing the University's decision to not choose the Access Copyright deal that threatened to raise our student fees by at least $20. I would like to thank the both of them for writing these long opinion pieces, and a special mention for Hannah for writing the unpopular opinion for the second time this term.

I had the pleasure of meeting Mark Goody, head of the Outreach division of UWAFT, to discuss the team's performance in Hollywood last May. While I was unable to write the article following up on the interview, Alison was able to complete it very competently, so read her article about it to learn about the team and research further online if you are interested. The team does some really awesome work with hydrogen fuel cells and hybrids, so definitely give them a look.

One of the things I have been working on recently has been a consistent design and visual identity for *The Iron Warrior* and its various documents and social identities. Much of this centres around fonts and sizes, applications we use and procedures that are designed to save time. Some attempts at convergence are noticeable in our letterhead and rate card, which now make heavy use of Myriad Pro Semibold, Myriad Pro Regular, and Adobe Garamond Pro for titles, subtitles, and body text, respectively.

In the print edition, the supporting sans-serif text is all now Bitstream Vera Sans, which is the same font we used for our masthead on page 2 historically. This also removes Arial from the print edition, which both streamlines the number of fonts we've been using and gets rid of a bland, ugly font. This leaves us with Myriad Pro Semibold for titles and the inside window on the cover page, Myriad Pro Regular for subheadings, Bitstream Vera Sans for the bylines and other supporting text, Adobe Garamond Pro in the sudoku, and the tried-and-true Times New Roman in the body text.

There's still work to be done to improve layout, as always, but I think this issue acts as a good point of progress. We have also refreshed the icons on the top of the pages, which may go under further refinement in future issues if they don't look as good as they should in print.

For applications, I have worked on cutting down the scattered locations of files we use and streamlining our application usage. Our minutes and notes are all taken in Evernote, then sent out to our members via Gmail. All our documents are in the process of being stored in Dropbox, for spreadsheets and more complex documents, and Evernote for simpler word-based documents.

Part of the decision to transition to Dropbox is Google's worrisome policy with respect to what they can do to your files. Dropbox explicitly gives itself very conservative limits on what it can do with your data, so by the end of the term most of web-based documents should be stored there. Adobe's excellent Creative Suite has served us well in production, and will likely continue being our creative software of choice for years to come.

If you want me to get more granular, almost all our browsing is done in Google Chrome, which lets us do pretty cool things with Gmail, and our file transfers are all done in Filezilla. Unfortunately, we are still stuck with Windows 7, and while I would switch us over to a Mac mini the second the opportunity presented itself, it would be hard to argue the fiscal reasoning to a faculty of Windows users. The lesson here is that there are some things in the newspaper that not even the editor can change.

For our procedures, especially for editorial positions, the only concrete document we have relied on is our Policy Manual, which does not detail the incracies of the roles when it comes to tasks to complete and other things we need to remember to do. Between Farzi and I, we hope to have a cohesive document completed so that the editor who succeeds me and all the ones after them will have more to go off of than spoken word reminders, instant messages and scattered emails. While every editor has tried making a more cohesive document, often this task has presented itself as too large of a challenge and they do the best they can to inform on an as-needed basis. Hopefully, the combined efforts of the two of us can get a strong manual going.

We're also working together to reunify the layout and design decisions of the A-Soc and B-Soc publications. It appears that every few years, inconsistencies develop and the paper needs to realign itself. From changes on both our side and theirs, the both of us can see things splitting apart again in the near future if we do not discuss the layout, so expect to see the latter issues of my term and onwards work towards a more finalized design which should be perfected when Farzi is working on her issues.

The other little thing I've been working on is circulation. Racks in the new Engineering hub in the east part of campus are coming, I promise! Unfortunately, putting up racks in the east side of campus is not as high of a priority for Plant Operations as gettting new buildings ready or gutting old ones, so you'll have to wait a little longer for our racks to go up, but we have submitted two requests for Engineering 5. Between the release of this issue and the next one, I'll be submitting a proposal for Engineering 6.

When the Quantum Nano Centre reaches completion, Farzi will likely be making a request shortly afterwards to put a rack into the atrium. Past editors wisely purchased some racks a few terms ago, so we ideally have some for Engineering 7 and 8 when they go up as well.

Some of you may have noticed that the rack at the intersection of Engineering 2 and Engineering 3 is broken, so until we can get a request in to get that one fixed, more will be placed at the rack on the other side of Engineering 3, facing the Davis Centre. You are also welcome to come by *The Iron Warrior* office when the lights are on and pick up a paper, and someone here will gladly provide you with one. We are keeping tabs on which ones empty, so with each issue we aim to increase the circulation of those racks and decrease the circulation for racks with no papers. This means more at the Engineering 2 rack next to Physics and Rod Coutts Hall, and less on the Rod Coutts Hall first floor.

As a final note, while this does get sent out to a mailing list of around a hundred people before release for proofreading and layout issues, things are always bound to be missed. I would invite you to email me at iwarrior@engmail.uwaterloo.ca if you have any questions or concerns, or notice any errors. Happy reading!

THE IRON WARRIOR

The Newspaper of the University of Waterloo Engineering Society

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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.

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

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The Long Road to More Study Space

FedS Undertaking Consultation to Develop New Student Building

TREVOR JENKINS
4A MANAGEMENT

Student building construction fever is back in the air! The Federation of Students has formed a new committee to look into a new Student Services building. The new committee's mandate is to consult with students on what they would like to see in such a building.

The new committee is meant to resolve some of the core issues that led to students rejecting the last Student Services Complex referendum held in Fall 2009. That proposal would have seen a $47 million dollar, 3-4 storey structure built on Parking Lot H, at the northwest corner of Seagram Dr. and University Ave. The building would have been comparable in floor space to Dana Porter Library. Had the referendum passed, the building was expected to open during 2012.

The core of the proposal would have seen additional 24-hour student study space, and office & meeting space for the Federation of Students, Graduate Student Association, and student services offered by the university, such as the Writing Centre, Counselling Services and prayer rooms. However, additional features of the original proposal included a lecture hall which would have doubled as a movie theatre, new retail and food outlets, and the relocation of the Graduate Student Association from Grad House.

Ultimately, when undergraduate students were asked the question "Do you support the addition of a $49.50 to the Student Coordinated Plan fee to contribute to the proposed new Student Services Complex?" they said no. Of the 18% of eligible voters that turned out, 59.7% voted "No" to the additional fee. Follow-up surveys to determine why students rejected it revealed that many were unaware that the fee would only be charged once the building was completed and open to students, similar to the new Health Services expansion which was approved in the same referendum. The surveys also revealed that most students didn't agree with what was proposed to be in this building.

The creation of the new FedS committee stemmed directly from this lack of consultation. The new committee, which is composed of a small group of FedS Councillors and At-Large students, will oversee an extensive consultation process throughout the summer to determine student amenity priorities. This will compliment an extensive 'Student Study Space' survey and report form the Winter 2012 term, that now-FedS President Andrew Noble undertook while a Councillor for Applied Health Sciences.

The committee is expected to submit an initial report, which will then be used the Federation and University to create an initial proposal for the building in September. This proposal will then go to students in the fall term for feedback, before being finalized and sent to referendum in February. Since this will be a non-academic building, it won't qualify for government funding, meaning the brunt of the capital cost will be incurred by students through a fee charged during on-stream terms. This was the method used to fund the expansion of the SLC and construction of the CIF. If similar to the prior proposal, the university would fund a portion of the costs for space they occupy, and likely the annual operating costs.

The Iron Warrior will provide updates in future issues about consultation opportunities as they arise. Students are strongly encouraged to get involved during the process in order to develop a building plan that enhances their undergraduate experience.

FedS

Proposed Student Services Complex from Fall 2009.

UWAFT Places Third Overall in First Year of EcoCAR 2

ALISON LEE
3A NANOTECHNOLOGY

From May 17 to May 24 this year, UW's Alternative Fuels Team, UWAFT, competed in the first stage of the three-year-long EcoCAR 2 design competition. EcoCAR 2 is a sequel competition to the 2008-2011 EcoCAR challenge. The goal is to prepare future automotive engineers to crate more environmentally friendly automobile designs to the traditional vehicles. The competitions goals are to reduce emissions while maintaining a high standard of performance and safety. The first EcoCAR competition focused on hydrogen fuel cell technology and the EcoCAR 2 focuses on electric vehicles. The competitions are sponsored by the US Department of Energy and General Motors.

The competition mimics a real-world three-year vehicle development process. After each year, the teams meet and compete in the areas of business, technology, and outreach. EcoCAR 2 lasts from 2011-2014 and, as such, UWAFT just finished their first year of the competition and traveled to sunny California to present it. The first year was all about design. Mathworks, a major sponsor of the event, let teams use its automotive simulator to test their designs. Last year, fifteen teams qualified to compete in EcoCAR 2, with UWAFT being one of two Canadian teams. UWAFT came into the competition being first in all three categories, and after competing last month in Hollywood, they are still first in business and outreach, and third overall. Their final score was an incredible 859/1000. Aside from the $25,000 given to carry out the project, the UWAFT won over $10,000 in cash prizes from the nine awards they won for their year one work.

UWAFT has an impressive diversity of members. The technology team is the largest component, with over thirty members from almost every engineering discipline. Their sub-groups work on either the electronics, the vehicle control, or the mechanical design. The UWAFT outreach team has six members from Environment and Business. They handle public outreach, education, media coverage, and promotion by social media. The business team consists of eight MBA students from Laurier. They handle sponsorships and team fundraising.

Now that they are heading into year two of the competition, each team will be given a 2013 Chevrolet Malibu which they will have to strip out and re-build with their design. The general design is a power train-series plugin hybrid car. It should be able to go 65 km on its battery, at which point it switches to ethanol power while a generator recharges the battery. It will be judged on acceleration, handling, braking, environmental impact, emissions, and fuel economy. This summer, UWAFT will take apart the Malibu and, in the fall, they will receive software training while implementing their design. By this winter, they will compete in a high temperature competition in Yuma Arizona to prove that the car is viable in extreme weather.

Being a part of the UWAFT team has been a great advantage to its members for finding jobs. With a 98% employment rate upon graduation for UWAFT members, environmental automotive design is definitely in demand. Mark Goody, an Environmental Studies masters student and head of the UWAFT outreach team, said that "no other graduate of EE will have the 4 year experience" of designing a vehicle entirely from well-to-wheel. Let's cheer on UWAFT as they progress through the next two years of EcoCAR 2!

University of Waterloo Alternative Fuels Team

UWAFT placed third overall, first in outreach and business in the competition so far.

Plastic Bags Banned in Toronto

The Grid

Starting January 1, plastic bags like this Zehrs bag will no longer be provided at stores in Toronto.

NANCY HUI
2B CIVIL

First, a bit of background to those who do not hold the pleasure of hailing from Toronto the Good.

The current mayor is Rob Ford, who was elected in 2010. He is, to put it gently, a controversial man, who splits City Council into factions, with the exception of half a dozen swing voters. Earlier this month he was in the minority in a 33-1 vote to accept $350 thousand from the federal government for a gang intervention project to help 300 young people find gainful employment instead of falling into a gang. He justifies it by saying that the money offered by the federal government wasn't coming out of the federal coffers, but was instead taxpayer money, and will come out of taxpayer pockets... somehow, somewhere. Indeed, Rob Ford is a mayor who sides with the voters.

Now, Toronto has had a 5-cent plastic bag tax in effect since 2009. Rob Ford has been a staunch opponent against the 5-cent tax, but only moved to remove it in council last week. In a surprise vote, the council voted 24-20 not only to remove the tax on July 1st, 2012, but to ban plastic bags altogether on January 1st, 2013. This does not please Rob Ford.

Do you know the meaning of situational irony? It's a label applied to an action that has the opposite effect of its original intent. For example, remember the Oracle at Delphi's prophecy to King Croesus, that if he went to war, "a great empire will fall." And so Croesus marched onwards, hoping to win glory and conquer nations, but history tells us that it was Croesus's empire which fell.

The plastic bag ban is a textbook case of situational irony. It's beautiful.

As far as the effect of such a ban goes, it's a nice gesture. Plastic bags are an unsightly reminder of our single-use product culture. Over 450 million plastic shopping bags are used in Toronto each year, amounting to 6900 cubic metres of landfill capacity annually. They last for decades and do not decompose in landfills. It would not require significant reorganization of our commercial habits to adapt to shopping without a plastic bag. San Francisco, Seattle and Los Angeles all function perfectly well with their own plastic bag bans. Torontonians are a hardy folk, toughened by the trials of amalgamation, spotty transit in the suburbs, and Nickelback on the airwaves. Surely we are stronger than those west-coast denizens. We shall survive.

Shopping bags, doggie bags, and garbage bags need not be the disposable plastic type distributed to carry home groceries. Substitutes can be obtained, or will rise up to fill the void left by the humble disposable bag. After all, humans are the MacGyvers of the animal kingdom. However, plastic bags are themselves products voluntarily reused by consumers - once for shopping, and then once for waste disposal. There is an unsettling possibility that bags specifically purchased to line bins and collect dog poop may be even more wasteful than plastic shopping bags. And although you may be able to justify the purpose of a sassy "My Bag is Not Plastic" reuseable bag in organic cotton manufactured in Thailand, there are no fashionable, reusable replacements for bin liners and doggy bags in the world.

(Well, considering how they're marketing tampons and pads in neon wrappers and cheery patterns, "fashionable" might be a possibility for garbage and pet waste disposal. But not a chance for "reusable".)

On the other hand, the plastic bag ban is mostly a gesture, but one with some economic impacts. Compared to issues like reducing gridlock, zoning, and the subway brouhaha, a plastic bag ban looks petty. Plastic bags occupy less than 1% of landfill volumes.

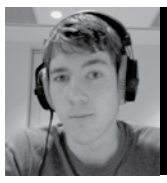
The plastic bag manufacturing industry in Ontario is severely negatively impacted. According to the Canadian Plastic Manufacturers Association, local manufacturers employ 15,000 in the GTA and 35,000 across Ontario. Smaller retailers also face problems in finding suitable and competitive replacements for plastic bags before the January 1st deadline. Paper bags are not as durable and are more expensive to manufacture, and reusable bags are often manufactured in developing countries, incurring significant economic and ecological costs from transport. If only shoppers could remember to take some of their pre-existing reusable bags from the hall closets of that fine city.

All in all, it's difficult to see what consumers, retailers, and manufacturers will do under the plastic bag ban until January 2013. Will the ban last? The bag tax lasted three years in municipal politics. Will the ban be enforced? The city did not enforce the five-cent bag tax or collect the resultant $5.4 million in revenue. Is a small, well-intentioned step in the right direction that much better than no step at all?

I believe that, much like the bag tax, the plastic bag ban will remain in place for several years, during which it will not be rigorously enforced. I also believe that reducing the manufacture and consumption of plastic bags, many of which are not reused for bin liners and the like, although painful for the industry, is necessary in slowly shifting society and the economy towards more sustainable paths.

(And if all else fails, we can get plastic bags from Markham.)

Barefoot Running: Flying for Free



NOAH MACCALLUM
2B NANOTECHNOLOGY

The bottoms of my feet are a shocking spectacle. The surface is a thick hide, like a rhinoceros's back. The once pale flesh is darkened from dirt repeatedly being pushed into the tiny ridges and pores. Underneath the forefoot, the borders of old skin and newly formed callouses are the only monuments to the hard-won blisters from days gone by.

To those with the right blend of patience and apathy towards public appearances, barefoot running can bring great rewards. Many people wonder (and fewer actually ask), why would I do this to myself? Is this simply a manifestation of deep-seated masochistic tendencies, am I just being a hippie, or is this something that any rational human should do? The benefits are so numerous that I am of the belief that it would be more irrational to not barefoot run.

One of the chief benefits is the strengthening of muscles that have not been worked since birth. Back, hip, knee and ankle problems can often be traced back to misalignment resulting from weak feet. It is easy and profitable to sell orthotic insoles, but these treat the symptoms and overlook the cause. Our feet aren't rigid structures that will somehow regain an arch because it is forced into that shape on a daily basis. On the contrary, without the need to maintain any shape on its own, the foot can become even more lazy and weak. Barefoot running (and walking) will naturally strengthen the feet, and the cables suspending the arch will naturally thicken and contract. This leads to better posture, better form when running, and the elimination of many chronic pains.

Another practical benefit is that barefoot running is the quickest and easiest way to correct any errors in running form that we all have. Running with shoes allows us to be lazy in this regard, because there seems to be no real consequence. When barefoot, you will not heel strike or land heavily simply because it hurts to do so. Within a few strides a mid-forefoot strike becomes necessary, and a lower impact, more fluid feeling stride is quickly adapted. Distance running is notorious for causing injuries, and it is not uncommon for serious runners to get injuries at least once per season. The barefoot stride results in less impact and thus less repetitive strain and injury.

Though these benefits do contribute, the main reason that I run barefoot is the feeling. Your foot is host to one of the highest concentrations of nerves in the body. Each of the myriad surfaces one encounters has an electrifying message that can only be transmitted through bare feet. The moistness of the soft grass hours after a rainstorm, the coolness of the white painted stripes in a parking lot contrasting the hot asphalt surrounding it, and the unique texture of each surface across campus all communicate their typically ignored message in a cacophony of sensation. There is a blanket dulling our experience, unbeknownst to most people. In this case, ignorance is not bliss, and once the blanket is lifted you just feel more alive.

It is true that it is not particularly normal to be barefoot outside of the comfort of one's home. There are people with borderline foot-phobias, and others who think that bare feet are unsanitary and/or gross. Many treat shoes as a status symbol, and won't go barefoot because it would have unfavorable associations (hobbits, kids, etc.). Everyone will deal with these in their own way, and the easiest thing to do is simply wear shoes and only go barefoot when running for exercise. This is even necessary during co-op for obvious reasons. When we are on campus, though, why should we care about any of these things? Let go of your biases and do what is obviously the most enjoyable and advantageous thing for your happiness and health. This isn't high school, and we are at a stage where we shouldn't let the desire to be normal and accepted override what we know is best for us. If this article convinces you that barefoot running and walking is best for you, then let your bare-footedness serve as a monument to living a rational life dictated by reason, and not what others think.

At this stage, I hope your next thought is, "how do I begin?" Luckily, there are a few simple rules that can be followed to ensure a safe progression to longer distances and faster times. Patience is key here, and there are no real shortcuts. These muscles have lay essentially dormant since birth, so it will take time to bring them up to comparable strength compared to the rest of your legs. Overtraining can lead to injury and stress fracture, so erring on the side of less is prudent; especially since muscle soreness cannot be felt fully until the next day.

The number one rule for starting out is to let the condition of your skin dictate your mileage. You will need to start with a very small distance for the first couple of weeks, going no more than about half a kilometer. Resist the urge to go on grass, because pavement makes it easier to focus on improving your stride, and will toughen your skin more quickly. Once the bottoms of your feet start to feel sore, stop running and don't go out again until they feel good again. Skin soreness/blistering is an external indicator that your whole foot has had enough and needs to recover. Don't use Vibram Five Fingers or related ultra-minimal footwear until you can already run fully barefoot; without the feedback of skin soreness, it is easy to do too much too soon and injure your foot. Less than an hour a week is enough in these early stages. Simply listen to your body and progress slowly and consistently; after a few months you should be able to do five kilometers no problem.

Once you get through these early stages, the feeling of having strong feet is simply amazing. Running becomes a joy, and with your now nearly impact-free stride it feels like you are floating down the road. I implore you to at least try to walk to class barefoot one day – I'm sure you will drink the Kool-Aid and join the barefoot revolution.

Bellin Run

Barefoot running is one of the best methods to realign your feet.

Protecting Yourself from Identity Theft

KATE HEYMANS
3A CHEMICAL

YOUR BIWEEKLY CHALLENGE

For this issue, the goal is to look at how to protect yourselves from identity theft.

Identity theft in Canada refers collecting and assembling someone else's personal information for criminal purposes. Essentially, the identity thieves search for information that will allow them to impersonate you. That can then be used for a wide range of activities such as accessing your bank account, applying for loans or credit cards, hiding criminal activities and stealing your government benefits.

Regardless of how it's used, identity theft usually results in a major loss of money, time and energy for you, especially if the criminals mess with your credit history.

How can you prevent identity theft?

1. Don't give out personal information or respond to requests for personal information unless you have initiated the contact or you know who you're dealing with. For example, when your bank or your phone provider calls to offer you a deal, ask them if you can call them back instead of just giving them your info.
2. Keep documents (such as your Social Insurance Card, health card, birth certificate, etc) somewhere safe. If you're about to go out drinking and you don't plan on remembering your night (not that I condone this), don't bring these with you.
3. Check where you're doing your online shopping and your banking. Is the internet connection you're using secure? Has the computer you're using been checked for viruses recently? Please don't start typing your credit card information into a public computer on campus. Although these computers are regularly maintained, it's all too easy for someone to install a hardware keylogger on these computers or to simply be spying on you.
4. Don't hand over your SIN number every time you're asked for it. If your potential landlord, your cell phone carrier or even your utilities provider wants it, make sure that they have a good policy for the use and retention of that information.
5. Check where you're doing your online shopping. If it's not a well-respected site, try actually buying stuff in-person or check if there's a PayPal payment option.

Also remember that it isn't just your credit card number or banking information that these criminals are trying to steal. By getting your email address and password or simply knowing the answer to your security questions, criminals can easily access what they need. If you think that something like your Quest password isn't a big deal, remember it can be used to access your SIN number on Quest.

So how can you tell or check if your personal information is being misused?

1. Check your bills and credit card activity. If stuff starts showing up that you did not buy, then there is a good chance your information could be compromised.
2. Keep an eye on your credit report. If new accounts or loans get taken out in your name, it should show up on your report.

If something appears to be wrong, investigate it. And, between now and the next issue, check your habits to make sure you are not at risk for identity theft.

Point Vs. Counterpoint

Should the University of Waterloo Accept the Access Copyright Deal?

POINT

HANNAH HIGGINS
1T NANOTECHNOLOGY

For a number of years, the University of Waterloo has negotiated a copyright license with Access Copyright as a member of the Association of Universities and Colleges of Canada (AUCC). This license costs approximately three dollars per full-time equivalent (FTE) with an additional ten cents per page in printed courseware, and entitled the university access to a database of copyrighted materials without needing to acquire proper permissions from or pay royalties to the author(s) directly. In addition, lists of material not available for copy, and quotas regarding those that were could be, can be found in many locations, including online. Through this process, the use of copyrighted material was simplified as much as possible.

However, after December 2010, our last agreement expired, and Access Copyright proposed a new license priced at forty-five dollars per FTE. This rejected by many involved institutions, including the University of Waterloo. Because an appropriate agreement was not made prior to the start of this past fall term, university dealings with Access Copyright were closed at the end of last August.

Since then a subsequent compromise has been penned between Access Copyright and the AUCC which would entail the following a rate of twenty-six dollars per FTE. While this deal was considered by the university, it was ultimately rejected on June 8, following an extensive FEDS campaign against the deal. As a result, the university library staff will need to acquire the proper permissions needed to conduct all classes and research at the school.

While the deal with Access Copyright was far from perfect, the alternative we must face as a school is not ideal either. It has been argued that all permissions needed since September have cost approximately a hundred thousand dollars to acquire, but a licensing deal with Access Copyright would have cost more than seven times that amount. Though this gap in values seems incomprehensible, it is also doubtful that it accounts for the additional effort spent by library staff obtaining these individual agreements from individual authors and publishers, an endeavour which is quite time consuming.

It was also noted that with the introduction of Bill C-11, educational institutions like the University of Waterloo would be granted greater flexibility with respect to copyrighted materials for the purposes of teaching, and therefore certain provisions within the offer from Access Copyright would be unnecessary. But although the bill does boast education-centric aspects, its primary purpose is to amend copyright privileges in the digital world with respect to national and international development. This includes provisions such as granting legal protection to businesses choosing employ technological protective measures ('digital locks') to their works, essentially increasing the presence of copyrighted material online. If Bill C-11 is passed, online resources may become more restricted without the acquisition of copyright permissions.

There were further clauses within the agreement which would grant Access Copyright the ability to monitor copying activities on campus and to prevent articles from being indexed or shared with anyone not affiliated with the University of Waterloo. While such rules do invoke a kind of 'Big Brother' feel, is it really that unreasonable? What is ultimately being asked is the ability to ensure that copyrighted resources are being utilized in the manner allowed by the owners, to whom Access Copyright is responsible. And assuming Bill C-11 is passed, appropriate copying methods will change with the nature of Canadian copyright law, undergoing a few fundamental changes. All that is sought through these clauses is assurance that unlawful access and copying practices be avoided through a co-operative effort, not the right or ability to interfere with school and student productivity.

Another valid concern regarding the deal with Access Copyright is the dynamic nature of Canadian copyright law itself. The argument that it is unwise to enter a long-term agreement for the usage of copyrighted materials when the legal duties associated with the act could be subjected to change in the very near future. However, that is when it becomes most beneficial to have a licensing agreement in place. When the laws regarding the usage of copyrighted materials are unclear, it is best to be absolutely sure they are closely followed. While this assurance may mean some provisions in the Access Copyright agreement are ultimately unneeded, it will insure that all copyrighted materials presented as study aids are properly accounted for.

The tragedy in the University of Waterloo's rejection of Access Copyright's deal is the absence of a counter-proposal. While I can admit that the suggestions presented by Access Copyright as flawed, I still feel that it would be preferable to relieve the university and its staff of the stress which accompanies the need to procure all the copyright permissions required by an institution of our size. Even with the concerns presented by faculty and students, our rejection of the deal leaves us with this large and tedious responsibility. And while the faculty and library staff have done an admirable job of arranging for the school's copying needs, the job may be subjected to significant increases in coming years. So why aren't we countering?

COUNTERPOINT

ANJALI GOPAL
3A NANOTECHNOLOGY

On June 7th, the University of Waterloo announced that it decided to forego the renewal of the Access Copyright agreement. The decision was a bold one, considering that other post-secondary institutions in Ontario, such as the University of Western and the University of Toronto, had just signed the agreements. However, Waterloo's rejection of Access Copyright could not have been met with more appreciation from students and staff alike. Although Access Copyright might have seemed to be an aid in the past, the current agreement is a tremendous inconvenience for post-secondary institutions from both a financial and a legal perspective.

To begin, let us look at what Access Copyright really is. Access Copyright is an institution that claims to provide "innovative copyright licensing solutions to governments, businesses, and educators" for supposed 'hassle-free' access to copyrighted material. They aim to act as liaisons between institutions and publishers to ensure that external institutions can retain as much legal use as possible of copyrighted works, while simultaneously ensuring that authors and publishers get paid for said works.

The last agreement between UW and Access Copyright expired in December 2010. The agreement mainly consisted of two fees: the first was a fee of $3.00 per full-time equivalent ("FTE"), which covers any 'unidentified copying' performed by a staff member or student of a variety of copyrighted works. The second part of the agreement was a fee of $0.10 for identified copying from any course package per course package (which is defined as a 'physical assembly of readings'). The total fee works out, on average, to about $3.38 per FTE.

When the agreement expired on December 31, 2010, Access Copyright came up with a new agreement of $27.50 per FTE. Apparently, this increase in fee is due to the fact that the agreement now includes digital materials, and to encourage environmental sustainability. However, this fee is a 600% increase from the last agreement, and with over 30,000 students attending Waterloo, this would cost the university an extra $700,000 per year.

However, apart from the financial burden, the pinnacle of the flaw of the Access Copyright agreement is that it does not provide noticeable benefits to the university or to its students and staff members. In fact, Access Copyright actually has more clauses that are detrimental to educational institutions. To discuss this, we must look at the definition of copyright itself.

According to the Copyright Act, owners of a work have the sole right to reproduce the work in any shape or form, to publicly perform the work or communicate the work to the public (in various types of media), or to authorize any of these rights to others. Thus, if the university already received consent from the owners of the work for any of these rights (for instance, if the publication of any material is already available through the university's library catalogue), then the university should not be paying an more money with Access Copyright for using these works (these fees should not be included exempt from any of the Access Copyright course packages). Finally, it should be noted that "consent" can either be explicitly stated or implied—so even instances where blogs invite you to 'comment on a post' or to 'share the post with the public', it is implied that the blog post has authorized the reader to communicate the work with the public.

Canada also has a lot of fair-dealing provisions that protect users from being sued for their use of copyrighted material. Material that is used for research or private study, or material which is used for criticism or review so long as appropriate credit is given to the owner and the source, won't trigger copyright alarm bells. In fact, a ruling by the Supreme Court of Canada in 2004 elucidates the importance of protecting both the owner and the user in issues of copyright. In the case of the Law Society of Upper Canada versus CCH Canadian Limited, the Supreme Court stated that the fair-dealing provision is not just a 'loophole' or a 'defense' for users, but that users also have rights when it comes to dealing with copyrighted material. The Supreme Court went on to state that research "must be given a large and liberal interpretation to ensure that users' rights are not unduly constrained'.

Ironically enough, it should be noted that the Access Copyright agreement that ended in 2010 did not cover the "fair dealing of material with any work for the purposes of private study (…) and review". The agreement also stated that it was not exempting the universities or its full-time equivalents from copyright infringement for material that was accessed without the permission of the owner. Clearly, this begs the question of why exactly Access Copyright was deemed necessary to begin with.

Furthermore, Access Copyright actually has a slew of clauses that are very undesirable to both university staff and students. Examples include clauses which state that Access Copyright will have access to conduct surveillance on the university and its students' use of copyrighted and educational material, to prevent users from sharing resources with anyone outside the university, and to prevent users from storing or indexing articles. Access Copyright also requires that for any material used for a course collection, a university should make note of information such as the name of the course for which the material is used, the course study code, the term start and end date, the number of authorized persons for the course study, and so on for another two dozen criteria.

The University of Waterloo has not been with Access Copyright since January 2011, with no perceivable negative outcomes on both the quality of education, or on access to educational resources. Although Access Copyright is masquerading as a 'be all, end-all' to Waterloo's copyright problems, the fact of the matter remains that the university has never had any copyright problems to begin with. Shelling out hundreds of thousands of dollars to an organization with little perceivable benefit is an enormous waste of money, especially money that is coming from a student's miniscule pocket.

Access Copyright

Captain Copyright, a short-lived character created by Access Copyright to promote copyright protection.

Who Goes on Exchange?

PETER H. ROE
DIRECTOR OF EXCHANGE PROGRAMS

I often wonder why there's a big disparity in the numbers of people who go on exchange across our various programs. The statistics are interesting, and are reflected in this bar chart. It shows the absolute numbers of students who went on exchange (STOUTS, or STudentsOUT) from each program in 2011. Systems Design is one of our smaller programs, yet it outnumbered all the others in terms of exchange students. Electrical Engineering is our largest program, but it's ranked seventh out of our 13 programs. More students from Architecture than any Engineering program, except Systems Design, go on exchange, and it has a class size of only 60.

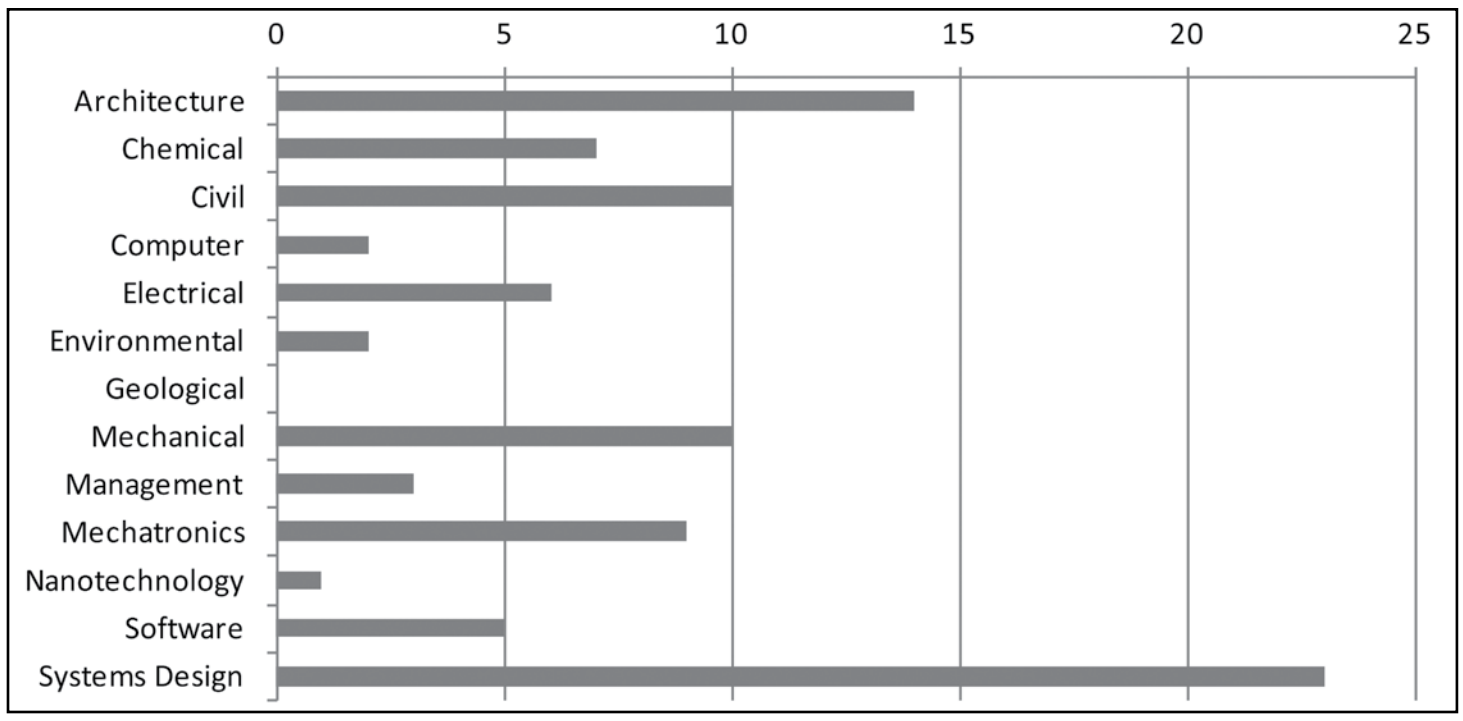
How can one explain why the number of Systems students who go on exchange almost matches Civil, Electrical and Mechanical combined? How can it be changed? It's not as if other engineering schools across the world don't offer programs in the traditional areas of Chemical, Civil, Electrical, and Mechanical Engineering. I can understand the smaller numbers from Nano, because there aren't many matching programs, but plenty of places offer Environmental Engineering and there's lots of room for Software, Computer, Mechatronics and even Geological Engineering students. Management is our newest program, and it fits well with similar programs in a number of our overseas partners.

Maybe EngSoc should offer P**5 points for exchange participation. Somehow or another I'd like to challenge the present first and second year classes of ChE, CivE, ComPE, EnvE, ME MTE, SE and NE to go on exchange in the same numbers as SYDE. And if you do, you'll still be a smaller proportion of your class than Systems.

It's too late to apply for 2012, but there is room in 2013 and 2014. We have 72 exchange partners around the world. You could go to the oldest technical university in Europe, or you could study in top-ranked universities in Australia, Austria, Chile, China, the Czech Republic, Denmark, England, Finland, France, Germany, Hong Kong, India, Ireland, Italy, Japan, Mexico, the Netherlands, Norway, Singapore, Spain, South Korea, Sweden, Switzerland, Taiwan or Wales. And more are being added each year. The opportunities are almost limitless, but you have to plan and apply.

Depending on your program, you can go on exchange in 3A and/or 3B and/or 4A, but the Waterloo Engineering Exchange application must be completed well in advance: - the end of January for the following Fall term, the end of May for the following Winter term and mid-October for the following Spring term; in general it should be completed before midterms. If you want to go to a particular school, get on the list early. Spaces are strictly limited. To find out more go to the Engineering Exchange website www.eng.uwaterloo.ca/~exchange, then contact Cindy Howe (cindy@uwaterloo.ca) or me, Peter Roe (phoroe@uwaterloo.ca), in the Engineering undergraduate office (CPH 1320).

Exchange is a great, fun, life-changing experience. Exchange enhances your education. You have chosen Waterloo, the best school in the country; why not take advantage of all the opportunities we offer? Every single person who has returned from exchange would recommend it to you. Just ask them.



Peter H. Roe

Distribution of STOUTS (number of students per program) by Waterloo Program, 2011.

wanderlustingtravel.com

University of Bologna

Ice Cream for Midterms

ALEXANDRA COLLINS
VP FINANCE

Over in the Services Department of the Engineering Society we love two things - ice cream and midterms. Now, we don't love writing the midterms, just studying for them with extra resources like past midterms.

If you weren't aware, the Engineering Society exam bank is FULL of past midterms and exams. Naturally, we are greedy and want even more midterms! That is why, all this week, we are giving away ice cream for any turned in midterms and practice midterms with or without solutions. When the exams are posted on the exam bank, your name will be removed. Therefore, don't worry if you're bashful about 98% in Thermodynamics or your less than stellar performance on Stochastic.

You can find us in the CPH Foyer from 11:30 to 1:30 from Monday to Friday.

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Upcoming EngSoc Events and Feedback Form!

ANDREW FISHER
VP INTERNAL

With midterms wrapping up, it is now that time of the year to take a well-deserved break from the books. These next few weeks EngSoc has numerous events planned which can tailor to anyone's interests. These include:

- EngSoc Hockey
- 2015 Spirit Party
- Running Club
- Genius Bowl
- Songs around the Campfire
- Pancake Breakfast
- Environmental Pledge Board
- Float Day
- Band Wars
- Open Mic
- LAN Party
- Wheelchair Basketball

The EngSoc event calendar below outlines when these events are. For more details, please check out the EngSoc website or drop by the EngSoc office.

While in the EngSoc Office, come say hi to your executive and let us know what you like or don't like about the Engineering Society; what we can improve upon and how we can better represent your needs. To help get your feedback, please fill out the survey below and bring it to the EngSoc Office front desk. P**5 points will be awarded for each properly completed survey.

Engineering Society Feedback Form

Please return to the Engineering Society Office (CPH 1327)

Overall Feedback

How would you rate the quality of events this term?
This includes events like Coffee Houses, TalEng, Rock Climbing, etc.

1 2 3 4 5
Poor *Excellent*

How would you rate the quality of services offered this term?
This includes services like Resume Critiques, Exam Bank, Workshops, etc.

1 2 3 4 5
Poor *Excellent*

How would you rate the quality of representation offered this term?
This includes communication with the Faculty, Feds, External Organizations and the like on behalf engineering students.

1 2 3 4 5
Poor *Excellent*

Executive Feedback

What do you think the executive have done well this term?

What do you think the executive need to improve on this term?

Andrew Fisher
LAN Party in May.

Upcoming Events

And Waterloo (almost) takes over ESSCO

YASSER AL-KHDER
VP EXTERNAL

Howdy everyone! Here's the happy haps:

ESSCO AGM

The Engineering Student Societies' Council of Ontario Annual General Meeting was held last weekend in Kingston. Unfortunately, I wasn't able to attend so I don't have much to say about it. However, I can tell you that Waterloo has a very strong representation within the ESSCO executive team, with 3 out of the 4 new executives being Waterloo students; Michael Seliske will be the President for the next year, Leila Meema-Coleman and David Birnbaum are the new VP-Communications and VP-Finance and Administration respectively, and Emily Bot from McMaster complete the executive team as VP-Services. WOOT WOOT WATERLOO REPRESENT!!

Upcoming Events

And as always I'll leave you with the some events coming up this week. I've talked about most of them in the previous issue of IW so I'll just go through them quickly.

- **WiE Week (June 25th - 29th):** Lots of things going on, including a seminar and a meet-and-greet so make sure you check them out.
- **Canada Day (July 1st):** Awesome fun times and events happening at North Campus with fireworks to top it off!!
- **WEC and Siemens Plantville Competition (July 5th - 7th):** REGISTRATIONS ARE NOW OPEN AT wec.uwaterloo.ca

Here's a quick description of the Plantville competition: Teams of 2 will manage a virtual plant using Siemens new plant simulation software. The goal of the competition is to run the best plant in terms of productivity and efficiency. The winners will give a presentation to Siemens reps explaining the methods and techniques they used in order to run the plant. The prizes are $500, $250, and $100 for first, second, and third respectively. The competition is running Thursday approximately from 6:00pm to 10:00pm so students can also participate in WEC on Friday.

And that's all I have, for now.

We All Have Diversity Problems

So Let's Fix Them

ALESSIA DANELON
PRESIDENT

And I'm not talking about the large ship (see reference: Anchorman, 2004). This past weekend I attended the Annual General Meeting of the Engineering Student Societies' Council of Ontario, henceforth referred to as the "ESSCO AGM". The conference content focuses on governance of ESSCO, as well as hosting sessions to develop the Engineering Societies of various universities across Ontario.

Though there was a vast array of sessions being offered, one of the sessions that I particularly enjoyed was a session about "EngSoc Image". This session was essentially focused on how Engineering Societies can improve their events, services, representation and general runnings in an effort to create a more positive atmosphere for their members, the engineering students in Ontario.

Though there were many great ideas being discussed in the session. The thing that caught my attention was the consistency in opinion, from school to school, that EngSocs cater to a homogenous group of people, whose personality traits are often described as outgoing and socially focused. Although those students exist at every school, many people identified a lack of participation from a large subset of their students who do not identify with this personality.

I was definitely impressed to discover that Waterloo's EngSocs were doing a lot more than other EngSocs to combat this problem. Our executive and directors seems to have already identified a need for a culture shift in this direction, and have broadened our events and services to try and cater to a wider variety of personalities.

This doesn't mean that the traditions and services we already offer need to change. It just means that we need to refocus our efforts on starting initiatives. This is where we need your help. If you have any feedback about how we can better serve a more diverse student population, contact us. If you would like to run an event or service that benefits a group of students not currently represented, contact us and we can help provide resources and guidance.

Andrew Fisher

Engineering students at the EngSoc Skydiving event in Toronto.

Upcoming Events Calendar

Wednesday June 20 EngSoc Meeting 5:30 PM CPH 3607 Running Club 7:00 PM POETS Patio	**Thursday June 21** Resume Critique 5:30 PM POETS Genius Bowl 6:30 PM AL 113	**Friday June 22** Running Club 8:30 AM POETS Patio MOT POETS	**Saturday June 23** Orientation Leader Retreat 9:00 AM RCH 101	**Sunday June 24** Joint Council 9:00 AM RCH 101	**Monday June 25** Running Club 7:00 PM POETS Patio	**Tuesday June 26** Pancake Breakfast 8:30 AM CPH foyer EngSoc Hockey 3:00 PM CIF **Songs around the Campfire** 8:00 PM Laurel Creek Firepit	**Check out up-to-the-day event postings on the EngSoc website at engsoc.uwaterloo.ca**
Wednesday June 27 Environmental Pledge Board WiE Day CPH foyer Running Club 7:00 PM POETS Patio	**Thursday June 28** Band Wars Float Day Outside CPH	**Friday June 29** Running Club 8:30 AM POETS Patio GradComm Pubcrawl 12:00 P.M. POETS	**Saturday June 30** LAN Party Wheel Chair Basketball	**Sunday July 1** Canada Day	**Monday July 2** Canada Day Running Club 7:00 PM POETS Patio	**Tuesday July 3** **2015 Spirit Summer Challenge** **EngSoc Hockey** **3:00 PM CIF**	

Life in Tongo

JIMMY EHRMAN
2012 JUNIOR FELLOW

THE LONGER TRAIL

My name is Jimmy, and I am one of the 2012 Junior Fellows from the University of Waterloo Engineers Without Borders Chapter. For the next few months I will be working on a project called Sustainable Land and Water Management under the Agricultural Extensions team in Northern Ghana. Below are recent thoughts and observations from my life overseas.

I have a home! After a few weeks of consternation I have a place to set down stakes for the next three months. It's a welcome change from moving around every few days. I have pretty reliable electricity, clean well water nearby, a roof over my head, and TZ (local dish made from boiled maize flour) every night! It's great to be here and begin to establish connections, however there was more than a little consternation in the past weeks as I agonized over where to live. More than a little fear came in to play as I visited several places a day. The more places I saw the more factors I needed to weigh, and the more confusing it become. Will I be healthy in a compound? Will I be isolated in a single room? Will I be able to get to work? As excessive worry and thought is prone to cause, I spun many things out of proportion, to the point of frustration and fear. However, once the choice was made things quickly became more real.

In my first few hours I was greeted with an exceptionally warm welcome from my host parents. It was all I needed to begin to relax. Soon after I made quick friends with some of the older children, and felt much more at home. While I'm still settling in, I'm very comfortable here. I still need to escape from the relentless onslaught of children often, but I have a door and lock, so it is not too hard.

As is customary in Ghana, a stranger cannot stay in someone's house without meeting the brothers of the head of the house. A few days after my arrival, I met my host father's seven brothers. The eldest brother performed a quick ceremony to ask the ancestors for my health and safety while in their household. We shared small glasses of ginger gin, peto (a strong beer made from millet), and kola nut. The latter was probably the most disagreeable thing I have ever voluntarily ingested. It is dry and incredibly bitter. The taste and the texture scream "DON'T EAT ME", but with the warmth of the gin and a desire not to offend I braved a few small mouthfuls while trying not to gag or grimace.

After the ceremony, I had arranged to hike in the hills with a local – Nicholas – who I had met a few days earlier. I sat and waited while feeling awkward under the gazes of all the children in the compound. Eventually Nicholas came and to my surprise and frustration, all the kids decided to come as well. In the moment I really felt like hiking alone or at most with the company of one or two. To have at least a dozen children from six to twelve follow was not what I had in mind and made me a little grumpy. We trouped through the foothills and approached the massive piles of red granitie boulders that made up the Tongo Hills.

The hills are full of shrines, so we had to be careful not to accident stumble on one, as they are best left undisturbed. We met several locals who were adamant that we must pay to see the hills. Nicholas called their bluff, and we carried on. As we approached the top, we found a massive stack of boulders. Each ranging from house to car sized. We had blast climbing over these and jumping from rock to rock, making our way to the top of the pile. It was an amazing time, and I felt my earlier frustration be replaced with the first signs of friendship as we helped each other scramble over the rocks.

We met a small group of guys who lived close to the hills than us, and so knew a lot about these piles. They led us through some pretty gnarly caves and crevices between the massive boulders.

One strange thing about Northern Ghana is a frantic obsession with this huge rodent called a grasscutter. At the mere sight of the creature, even the most poised Ghanaian will tear off after it with a stick or stone. Such an event occurred while we were resting on some boulders. With little notice I hear "GRASSCUTTAH!!!!!@#@#" and people begin recklessly flying off of boulders and racing across fields to harass this ugly rat-like thing about the size of a large cat. It was very strange, but also hilarious.

As the day ended, we wound our way back down the foothills, and I was surprised to feel a little less like an outsider in this group. I could even tolerate the kids again. It felt good, and I guess I learned that sometimes you can grow to find comfort in even the things that seem least appealing.

I am settling down quickly into my new community and I'm less of a novelty and more of a person sharing living conditions. It is nice to see the transformation as trust and relationships are built. However, office life in Ghana is more of a difficult transition. The project I am working on is facing bureaucratic and resource roadblocks. What was intended as a field job is looking more and more like an office job as I type, read, and consider facts and figures. It is not ideal, but hopefully things can be resolved and field work will begin shortly. Furthermore, Ghanaian offices are very different than Canadian ones, in ways that are difficult to see and deal with.

However, things get done in their own time, all that is left for me is patience. At least I can lay an iron foundation in my knowledge of the project before field work begins.

Whatever frustrations I encounter at the office are generally quickly brushed away as I walk back home. There is always something entertaining going on in Tongo. Without TV or internet, people entertain themselves in some pretty unique and amazing ways.

This weekend I will be on my village stay. This is a short trip to a rural village, where I am to live and work with the family members. The situation will be not that different from my current one, except I will likely not have electricity, and fewer people will speak English. Should be interesting, and I'm going into it with a lot of questions about family and farm dynamics!

Peace, love and happy trails!

Want to read more? Check out my blog for many more thoughts and updates at:
thelongertrail.wordpress.com
More information on the Junior Fellowship program and Engineers Without Borders can be found at:
www.ewb.ca

Boulders in Northern Ghana Jimmy Ehrman

Mourning Canadian Democracy

FILZAH NASIR
RESEARCH TEAM

22 consecutive hours of voting in the Canadian House of Commons came to an end at around 11:30 p.m. on June 15th with an unsurprising result. Bill C-38 passed the House of Commons. The Conservative caucus erupted with cheers and applause as Stephen Harper stood up to begin the final vote that would pass the bill. Every single Opposition MP in the House, NDP, Green, Liberal and Independent voted against the bill but even this rare show of cooperation in Parliament was not enough to overcome the all-powerful Harper majority.

C-38, commonly referred to as the Omnibus Bill, is supposed to be the Budget Implementation Bill. It is meant to bring into regulation, the terms of the budget that was introduced by the government on March 29th. That's what C-38 is supposed to do. What it actually does is make broad and sweeping changes to over 60 different regulations, many of which are unrelated, to each other as well as to the actual budget. In fact, over three-quarters of this so-called "budget bill" actually deals with changing Canada's environmental regulations. This includes ending the Canada Environmental Assessment Agency, repealing the Kyoto Protocol, and completely changing the Fisheries Act. That's just the start. And then there are the direct violations of democratic principles hidden within the bill. The bill reduces the Auditor-General's power to hold governments accountable for their actions, removes independent oversight from 12 agencies including the Canada Revenue Agency. The bill also allows the FBI to come into Canada and arrest Canadians on Canadian soil. Overwhelmed yet? Shocked? Too little, too late.

Opposition to the bill has been strong and outspoken and has come from all sources including the media to Members of Parliament, former politicians (many of them Conservative) and Premiers, including Alberta Premier Allison Redford. On June 4th, charitable organizations across the country blacked out their websites as a sign of protest.

The Canadian public rarely involves itself in what is happening on Parliament Hill, but this bill has managed to rouse anger in even our generally apathetic populace. On June 13th, all across the country, people joined together at the offices of their local Conservative MP's to show their opposition to the bill. The local Waterloo demonstration was held at Conservative MP Peter Braid's office and had about 50 attendees, ranging from students to senior citizens. There were even two ex-professors from Laurier in attendance. Anita Nickerson, who organized the local rally said "I don't want to tell my daughter that I stood by and did nothing." Much of the crowd gathered echoed her sentiments. Despite the general agreement that a Conservative majority almost guaranteed the bill would pass, they were not willing to stand quietly by as it happened.

The purpose of the demonstrations, which was termed "13 Heroes", was to call upon the principles of individual Conservative MP's rather than the government itself. They were looking for 13 Conservative MP's to stand up to their party and do their job. MP's are meant to represent their constituents, not their parties, and their votes should reflect the beliefs of their constituents. The movement began after Conservative MP David Wilks was caught on camera stating that he believed the bill should be split up and allowed to be debated separately. He lamented the fact that an individual MP could not make a difference and even hinted that he would consider voting against the bill if 12 other MP's did so with him. Since the Conservatives only have a 13 seat majority, this would ensure the bill does not pass. Wilks later retracted his statement and claimed that he was in 100% support of the bill.

But if 13 people with such principles exist they are not found in the Conservative caucus. The passing of the bill has brought new light to a major flaw in Canadian "democracy." Partisanship. If a person had tuned into CPAC during the 22 hours of voting on the bill, they would have seen a divided house. On one side sat the government, on the other, Opposition. And for every vote that was taken every MP voted in the exact same way as every other MP on their side. Every single Conservative MP voted no, to the 800 amendments to C-38 proposed by the opposition. As in, 167 Conservative members all agreed with each on 800 different issues. Can they truly expect the public to believe that? If one went searching it would be difficult to find 167 random people that agree on even one issue, let alone 800 of them. Yet, somehow the Conservative Party has managed to do this?

MP's are simply afraid to vote against their party, for fear of being kicked out or passed by for promotion. In short, they are serving their own interests rather than doing their job. Their job is to serve the Canadian public and primarily their own constituents. The Canadian public spoke out loudly and clearly against the bill. Yet, the bill passed. Is that democracy? No, in fact, it is the exact opposite of democracy.

That the Harper Government insisted on pushing this bill through, regardless of the strong and vocal opposition to it, is a clear abuse of power. It is clear that the Harper Government believe that a majority in the House means they can do as they please and it is also clear that plan on doing just that. C-38, though it will have massive repercussions and will cause irreparable damage to Canada's environment is only the beginning. Finance Minister Jim Flaherty is already threatening another Omnibus Bill in the fall and we still have 4 years left to go in this Conservative majority. It will be a long 4 years and I fear that at the end of it, Canada will be unrecognizable.

Prosthetic Retina Might Restore Vision to the Blind

NINA FENG
1B ENVIRONMENTAL

There are many causes of blindness in humans, the most prevalent being cataracts and glaucoma. However, the most common among older people is the deterioration of the retina. This means that the cells that receive light have mostly been destroyed due to age, thus neural firing to the brain due to light stimulation is greatly hindered. The result is vision loss. Treatment for blindness is often very limited and sometimes impossible, though of late there has been progress in the field of vision-restoring technology.

Researchers in the University of Strathclyde in Glasgow and at Stanford University in California might well have found a potential solution to blindness caused by retina degenerative diseases. It would work in cases where the retinal neurons are still present in the eye, but are either inactive or are not sufficiently stimulated by normal ol' visible light.

The system is essentially a prosthetic retina that consists of a pair of goggles and a microchip. It is wireless and is therefore slightly more practical and easier to manage than other bulkier solutions which require more hardware to function. A small camera outputs visual images to a miniature LCD screen located in the goggles. The image is transferred to the microchip, implanted beneath the real retina, via pulses of infra-red light. As these laser signals reach the microchip, they stimulate the neurons in the retina. This should allow the brain to see the images as if the retinas had been stimulated by visible light.

As usual with newer solutions though, there are still a number of downfalls and limitations to this system, which is being worked on by the scientists. For now, patients won't exactly be seeing things in HD, due to the limited number of photodiodes that can fit on the chip. The device can't quite transmit colour yet either, so it does not truly mimic the 'normal' human way of seeing. If the system can be made to be widely used though, it would still be a lot more useful than otherwise. The surgery required is relatively simple and minimal, and it does have a greater pixel density than other prosthetics being worked on. So far, the system has been tested on various lab rats, both blind and not-blind. It seems to have been successful with the rats, and so it holds some promise for humans. The researchers are currently hoping to get some sponsorship to use human test cases, in order to further develop it for more general use for human blindness.

Vision is something that the majority of us take for granted. To be able to see the world around us is really quite important for our safety, and is a big part of how we live and interact with the world. To be able to find a solution that will restore the sense of sight to people is a pretty exciting thing, even if it's only in development.

Photovoltaic Aircraft Crosses Mediterranean

Solar Impulse Plane Completes First Intercontinental Flight

NINA FENG
1B ENVIRONMENTAL

LEAFY THOUGHTS

We've all heard of electric cars that do not require fossil fuels and are therefore much better for the environment than their regular counterparts. We've even got solar-powered cars, though they're not as commercially available or practical yet. That's on land. We've got the same stuff in the air too, apparently. On the thread of eco-transportation, there is also the solar plane, which has been making a lot of progress since its conception.

More specifically, the Solar Impulse HB-SIA completed its first intercontinental flight on June 5th, after flying 19 hours from Madrid, Spain to Rabat Morocco. This Europe-to-Africa trip spanned about 1000 kilometres and included flying at night, and is one of its most notable achievements so far.

The Solar Impulse is a Swiss solar-powered aircraft developed at the École Polytechnique Fédérale de Lausaunne, led by Bertrand Piccard and André Borschberg. The first prototype, the HB-SIA, was built from 2006 to 2009. Despite its wingspan of 63.4 metres, it weighs just 1600 kg, which is not much more than the average car. It can fly up to 70 km/h for 36 hours, at an ideal altitude of about 27 900 ft. Not too bad for a solar-powered plane, though not exactly perfect for conventional plane flights, since it can only carry 2000 kg. However, its developers have stated that its purpose is to "create a revolution in the minds of people...to promote solar energies -- not necessarily a revolution in aviation." In that case, their job was successful. Silently propelled by its four electric motors, it certainly is a nice change from the noisy, jet-fuel-smelling airplanes that we're used to.

Its maiden voyage occurred on June 26th 2009, a "flea-hop" of 350 metres in Dübendorf Switzerland. It was deemed successful, as the controllability and performance of the plane met expectations. Since then, various test flights have been conducted. Its first overnight flight, on July 8th, 2010, was a 26-hour flight that reached 28 500 ft. This flight set records as being the longest and highest ever to have been flown by a manned, solar-powered aircraft.

Its first international flight was May 13th of last year, to Brussels, Belgium. Due to its relatively low cruising speed (50 km/h on average), it flew at a medium height of 6000 ft. The following month, it flew to Paris on its second international voyage, though this trip required two attempts due to weather complications.

This year, shortly before its June 5th flight, it completed yet another first: it flew entirely on solar energy, while charging its own batteries in-flight.

Now that the HB-SIA has been deemed successful, the team is hard at work coming up with another, larger prototype, the HB-SIB, set to be completed by 2013. It will have a huge wingspan of 80 m, and will cruise comfortably at 39 000 ft. Their plans don't stop there either. Once it's finished, newer, more ambitious feats will be accomplished. They hope to cross the Atlantic Ocean, and eventually fly around the world.

Though these goals sound kind of pathetic compared to what the average fuel-powered aircraft can do, it's still an important step towards the widespread use of renewable energy. If humans can fly around in airplanes covered in solar panels, then maybe there's hope for Earth yet. Maybe.

PV Expo 2011

Solar Impulse, the first manned solar airplane which can fly day and night.

Venus Transits for Last Time this Century

ALISON LEE
3A NANOTECHNOLOGY

On June 5, 2012, Waterloo astronomy fans gathered on BMH Green to witness something that only happens twice a century. Our little "sister" planet Venus passed between the earth and the sun as a tiny black dot on against a bright backdrop of the sun. The Transit of Venus has always been a big event, even in the past few centuries. Venus transits come along in pairs, and since the last one was on June 8, 2004, there won't be another one for over a hundred years. It's a significant event for astronomers because it allows them to make special measurements about the solar system. Ever since the first recorded transit in 1639, scientists like Kepler and Halley have been observing and recording information about Venus' orbit and gathering data about its atmosphere.

Here at UW, the Physics & Astromony professors organized a big event with the Royal Astronomical Society of Canada (RACS) complete with a free public lecture and free viewing glasses. The BMH Green was packed, and many people brought their families. A live video feed from a solar camera was provided for those who didn't have special viewing glasses. In our part of the world, the transit began just before sunset and was visible as long as the sun was still in the sky. The lucky people on the west coast of the continent had longer viewing time because of the time difference, but Venus was still spotted right from our campus. The sun was hidden at times due to cloud cover, but people faithfully peered through their cool sun shades and managed to see it. If you Google the transit of Venus, you too will marvel at the little spot traveling across the sun.

If you find it hard to believe that people can get so excited about a small speck in the sky, think again. Each time a new transit occurs, technology is more advanced and there are more experiments to perform. This year, the number of viewing locations increased, which means more accurate measurements. Data from earth combined with data the Venus Express spacecraft revealed more about the planet's atmosphere, climate, and composition. Furthermore, because the sun was in a special active phase, data about its change in brightness during the Venus transit will help scientists detect and measure the size of other objects between us and the sun. Unlike earth, Venus' atmosphere is predominantly carbon dioxide and its surface is highly volcanic. It is the second planet from the sun and only slightly smaller than our own third rock from the sun.

While there was a big showing at BHM Green, it would have been hard to beat the public gatherings in New York City, Hong Kong, London, and more. Even in past centuries, the Transit of Venus has been a bigger deal than you may realize. Composer John Phillip Sousa composed "The Transit of Venus March" celebrating the transits of the 1800's. To prepare for the transits predicted in the 1700's, James Cook sailed an expedition to Tahiti to take measurements from another part of the world. He then went on to explore New Zealand and Australia.

If you missed this event, well, sorry, but you probably won't live until the next one on December 11, 2117, but there are plenty of incredible pictures and videos circulating around the internet. And if you're looking for some unique study music, that Transit of Venus March is pretty catchy!

Corning Develops New Flexible Willow Glass

ROY LEE
3A NANOTECHNOLOGY

As most of us know from our materials courses or even just breaking some at home, glass is a very brittle material. It is not forgiving to those who try to bend it, flex it or roll it (at room temperature, of course). However, at the beginning of this month, Corning Inc., the creators of Gorilla Glass, released a new product called Willow Glass. Willow Glass is flexible and can be rolled without breaking.

The major advantage between Willow Glass and regular glass is the changes that it presents to the manufacturing process of many technologies. At a thickness of 100 to 200 microns, Willow Glass can be produced by the roll, much like the newsprint paper used for *The Iron Warrior*. This thickness does not take away from the glass' ability to form a hermetic seal for sensitive components. In roll form, Willow Glass can transform the manufacturing of devices by allowing for roll-to-roll processes as opposed to sheet-to-sheet processes thereby significantly increasing the efficiency of the manufacturing process.

The flexibility of the glass comes at little cost to the typical properties of glass. For instance, Willow Glass still has a processing temperature of up to 500 degrees Celsius. It also retains very similar Young's modulus and Poisson ratio values to Gorilla Glass. This is very promising for the scratch resistance and general strength of the glass, however, it is not intended to be put up against the same physical trauma that Gorilla glass has been known to withstand.

One of the many potential uses for a technology like this is high end LCD displays. The high processing temperature makes it highly preferred over other flexible plastics. Another emerging technology that it could be used for is Organic-LEDs. With the super thin and flexible nature of the glass, thinner and lighter technologies are possible. More importantly, these new technologies will not be limited by the stiffness of conventional glass. The potential for mass production of flexible displays is all of a sudden much more feasible.

Another major area where Willow Glass could make its mark is with solar and lighting technologies. The glass will drastically change the production of solar cells and potentially reduce the price of the everyday solar cell to something more palatable by everyday people. Another neat property is that with an Indium Tin Oxide (ITO) coating Willow Glass experiences close to no reflectance, which is another area of improvement for solar and lighting technologies.

Willow Glass is expected to appear first in smartphones, tablets and laptops. As time goes on, Corning Inc. will approach the solar and lighting technology industries.

Corning Inc.

Willow Glass is nearly as strong as Gorilla Glass, but much more flexible.

Vizio Enters PC Market with Premium Windows Laptops

KEVIN LIANG
3A CHEMICAL

Vizio is best known for its HDTVs, but they are diving head first into the personal computer markets. At first glance, their notebooks can easily be mistaken for a next-gen Apple product. Vizio's notebooks feature an aluminum unibody design, with clean lines and tapered edges. You also won't find any stickers on their products either. Continuing on their clean, minimalistic focus, their PCs will lack preloaded trial software that is the bane of getting a new computer. As with the stickers, not having preloaded software means that Vizio loses advertisement money. This just illustrates Vizio's commitment towards sleek design, and not just in hardware.

Vizio did not go with a stock version of Windows either. Microsoft engineers worked with the Vizio team to optimize Windows to Vizio's hardware. This means that every Vizio machine will have a finely tuned version of Windows 7 called Windows Signature.

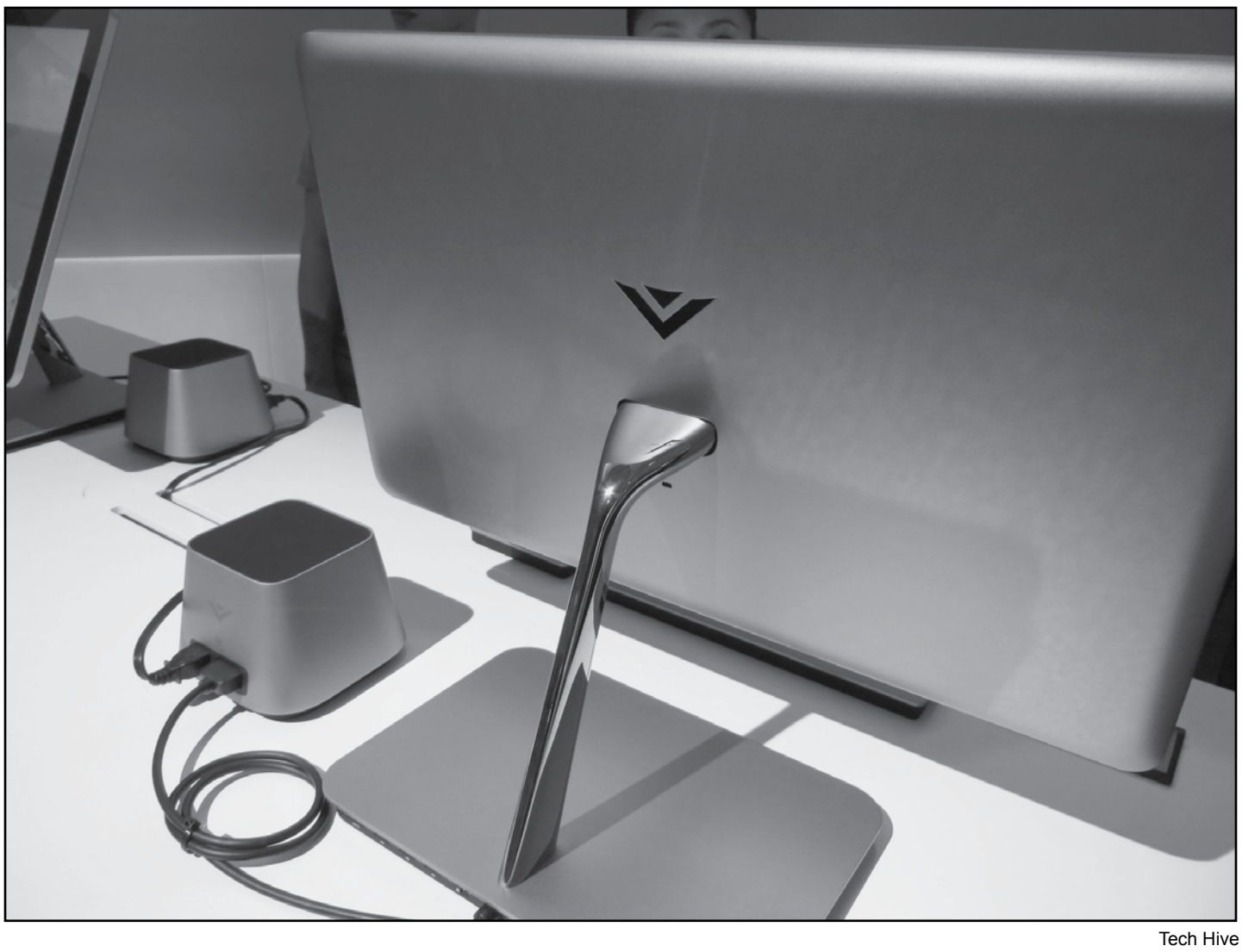
Vizio launched their PC lineup with five new products: two all-in-one desktops and three notebook models. As a primarily HDTV company, Vizio knows how important screen resolution is. Their desktop units and 15.6" notebooks all come in full HD 1080p with 1920 x 1080 screen resolution. Their 15.6" notebook feature 2 USB 3.0 ports, a HDMI port, a SD card reader, a headphone jack, an Ethernet port, and a power port. Without having an optical disk drive Vizio was able to increase the size of their battery to an impressive 6 hour lifespan.

"It's your primary interface with the computer and at the end of the day that's what matters." states Scott McManigal, VP of Design at Vizio. McManigal is referring to the keyboard and trackpad. Designers and engineers spent six months trying to perfect the design of the keyboard. They needed something that was easy to type on and also held the same visual appeal as the rest of the computer.

Since early on Vizio decided to ship a trackpad with their desktops, they had to make sure they produced one that would be easy to use and had high functionality. They did not even design a mouse. For years, PC manufacturers have failed to make a trackpad that can compare to that the Apple's magic trackpad. The trackpads were made with "the top sensor[s] in the marketplace." Everything else is custom. Microsoft even came into help tune the drivers and refine the experience.

There is a lot of speculation regarding the release of Windows 8. Many say that it will be coming late 2012. And Vizio had this in mind. Matt McRae, Chief Technology Officer at Vizio says that their entire product line was designed and tested with Windows 8. It is curious that Vizio will launch their new PCs so close to the release of a new OS. However McRae says that upgrading to Windows 8 will unlock some new features on their computers, sort of like an Easter egg. He described it only as a "pseudo-touch interface". In addition, they are planning to release a new line of products when Windows 8 is launched next year.

From the aluminum unibody shell to their all-in-one desktop PCs, to the highly functional trackpad, and the planned release of a new product line within a year, Vizio's PCs have a very Apple feel to them overall; the only thing missing is the high end price. Their notebooks start at $898 and their 24" all-in-one desktops starts at $899.99. Vizio's new lineup of personal computers can be pre-ordered on vizio.com.



Tech Hive

Vizio's all-in-ones have a sleeker, Apple-like design than most Windows computers today.

Apple's Bet on Google's Demise and High-Res MacBooks

JACOB TERRY
2B NANOTECHNOLOGY
T CUBED

As it is with every June, Apple invited its app developers and journalists to its Worldwide Developers Conference (WWDC) to teach developers how to work with its latest offerings and announce the roadmap ahead for the short term future. This year's conference focused heavily on its updated system software and its new high-resolution laptop, with many small quips and indicators that betray Apple's long-term plans.

The primary announcement was the MacBook Pro with Retina display, which quietly replaced the 17-inch MacBook Pro previously offered by Apple. The new laptop could be best described as a blend between the aesthetics of the iPad, the small form factor of the MacBook Air, and the utility of the MacBook Pros that preceded it. As expected, the components Apple expects won't be around much longer are no more: gone are the Ethernet port, the FireWire port and the optical drive. FireWire has been supplanted by another Thunderbolt port, the Ethernet port with a Thunderbolt to Ethernet adapter, and the optical drive with digital distribution and the USB-attached external drive that the MacBook Air and Mac mini have relied on for the past few years. An odd addition is the HDMI port, which would normally be connected through a Thunderbolt port, but Apple has chosen to add a dedicated spot for HDMI inputs. This allowed them to reduce the frame immensely, making it almost as thin as the MacBook Air.

The title feature, however, is the 15.4-inch, 2880 x 1800 display which spans to near the edges of the frame, giving the laptop a pixel density of 220 ppi, higher than any laptop currently on the market. While some software hasn't been updated to look as nice on it yet, many of the system applications already had high-resolution versions that look good on the new screen. The other big component that helped reduce size was the complete switch to solid-state drives from hard-disk drives for data storage. The minimum storage option is 256 GB of solid-state storage, which is more than adequate for most people, and which can be upgraded to 768 GB. All this doesn't come cheap though, and at a base price of $2229, puts this out of most people's price range. The new Retina display MacBook Pro is added as a high-price tier alongside the old 13-inch and 15-inch MacBook Pros, and the 11-inch and 13-inch MacBook Airs, all of which received performance boosts, and will support all the features of OS X Mountain Lion, which comes out in August.

iOS 6 was the final showcase of Apple's keynote, with a few major features highlighted. It appears that Apple and Facebook have made amends with regards to integration, as iOS 6 will have Facebook integrated in the operating system much like Twitter was in iOS 5. Opening the notification panel now shows "Tap to Tweet" and "Tap to Post" options, so quick social updates can be posted without having to go into the application. Siri learns a bunch of new phrases and commands in iOS 6, particularly in the restaurant, sports and movie categories, and is making the jump to the iPad. Apple has managed to make deals with BMW, Mercedes-Benz, GM, Jaguar, Land Rover, Toyota, Audi, Honda, and Chrysler to integrate a Siri button in the steering wheel of some car models to allow for hands-free and eyes-free Siri usage. A new application, Passbook, will also be included and combines all loyalty cards, boarding passes and movie tickets, among other things. Its near-term use seems questionable, but many have speculated this could be a precursor to a mobile payments system Apple may launch to compete with Google. The biggest change to iOS 6, however, is that Apple will be replacing the Google Maps service used in the Maps app with its own in-house mapping solution, combining data from Yelp and TomTom among others. Apple's Maps will have turn-by-turn navigation, integrated with Siri, traffic reports, and a 3D mode called Flyover that allows you to see 3D models of cities. This would be another step in Apple reduction of its dependence on Google in its products.

Apple's rivalry with Google was not unnoticed at the keynote, as from the start of the presentation Siri was delivering one-liners with a few targeting Samsung as a company and Ice Cream Sandwich, the newest version of Android. A few statistics were brought up throughout the presentation directly comparing iOS to Android as well, and more than once, some executives made jabs at "that company making dairy products." It shows how much Apple is willing to let go of Google in iOS. Maps in iOS 6 have less features than Google Maps does, yet Apple is still willing to remove it for the sake of blocking Google from receiving data. Transit information will likely have to be provided by third-party applications, reducing the convenience of a one-stop check of where you are and how to get to where you want to go. This could be a big downside for students like myself, who rely on the transit information perhaps too eagerly sometimes to get around places. Turn-by-turn directions also only work on the latest iPad or the iPhone 4S, so everyone else with iOS 6 will get Apple's maps without the directions. Flyover also only works on the iPhone 4S, iPad 2 and new iPad. While it's normal for Apple to not bring all the features of the new OS to earlier devices, it is a little unfair to not only remove the Maps application that's currently there but replace it with something that doesn't provide all the functions it had before. Perhaps their Maps solution will come closer in features over the next year, but until then it seems the best solution is for Google to release its own Google Maps app for iOS users to use for the time being.

While Maps may be one of the first severed ties between Google and Apple, it wouldn't be unreasonable to think that other such connections will be on their way out soon. The smarter Siri gets, the less she'll depend on a search engine, driving searches away from Google. That YouTube app that no one ever uses, which Google also never updates, will likely be removed soon in a future software update. As evidenced from the Maps app in iOS 6, the bitterness between these two companies will reach far into the face of users of their products, and the victims of their mobile war are likely only just starting to reveal themselves.

MacWorld

Flyover enabled in Apple's iOS 6 Maps, showing Melbourne, Victoria (left) and Chicago, Illinois (middle, right).

AnandTech

Size comparison between Retina display MacBook Pro (top) and standard MacBook Pro (bottom).

The Lowdown on E3 2012

JON MARTIN
OBI JON1138
FUTURE OF GAMING

Microsoft (top), Sony (middle), Nintendo (bottom)

***Halo 4* (top), *Book of Spells* (middle), Wii U Gamepad (bottom)**

The Electronics and Entertainment Expo has wrapped up for 2012, filled with new game announcements, new tech, and unfortunately some let-downs. So here is a brief summary of the major press conferences and their respective announcements, with a bunch of my own opinions thrown in. This is in no way a complete summary, so if you are interested in any of the press conferences, you can watch them all online.

Microsoft

Halo 4 opened the show with another great live action trailer, before transitioning into a live demo, and CGI trailer. Unfortunately we have yet to hear about the next gen replacement for the Xbox 360, and this E3 did not provide any answers, announcements, or hints of new development. But you really can't blame Microsoft for continuing to push the 360 until the last possible moment. One of the big sales announcements was that the Xbox 360 has not only claimed the title of the best-selling console in North America, but now the whole world. That is a pretty major accomplishment, and I don't see Microsoft announcing a new console too early in its development cycle when it could negatively affect sales of the 360. Wouldn't it be crazy if Microsoft pulled the same kind of trick with the next Xbox as they did with the Xbox 360 slim – even though people knew about the system for a while before it was announced I don't think many people would have predicted that the new system would be on sale the Very Next Day. This is in a marketing-based world where you have huge development schedules (after all, the Nintendo Wii U was announced last year, and we still aren't sure about complete system hardware specs). I just have to make a quick observation that Don Mattrick, President of Interactive Entertainment, has a very interesting presentation style. He keeps making weird pauses like he is expecting people to laugh at his joke (that wasn't funny) or cheer for an announcement. It's kind of funny – anyway, back to the conference.

Another big thing that everyone is talking about (whether good or bad) is Kinect integration. In the demo of Splinter Cell: Blacklist for example you can hang suspended from a ledge and lure an enemy over by saying "Hey, you!" and Kinect will use voice recognition and trigger the in-game action. Of course this could be done using a single button, but where's the fun in that – much better to use a $150 microphone. EA Sports also showed a bunch of Kinect integration, but luckily most things are going with the "Better With Kinect" moniker, rather than making a full Kinect game. Of course, I think having FIFA pick up your swearing at the ref's call and actually commenting on it along with an animation of the player's dissatisfaction. In FIFA and Madden I think it is really neat that you can actually choose plays and call out specific players, this could actually be a neat feature, but why can't it be implemented with the standard microphone?

The other really big news from Microsoft was the announcement of Smartglass tablet technology, which can be used on pre-existing devices using Windows 8, Apple, and Android products. While watching a movie on one device, the others can display additional content to supplement the movie. It sounds really interesting, but I wonder about lag problems and the effect on your device's battery life – I hope this program isn't always running in the background wasting resources. The final big tech announcement is that Internet Explorer is coming out on Xbox, using Kinect and Smartglass tech. Of course Internet Explorer is one of the most hated browsers, but we'll have to make due I guess.

Sony

Sony had much more of an emphasis on games than on entertainment like Microsoft, though they also had their own tech announcements. The big new product they are pushing now is called Wonder books, and it is kind of like a super pop-up book. The peripheral interacts with the Sony Eye Camera to pick up movement of the player and display images on the screen which are based on the 3D location and orientation of the Wonder book in the player's hands. While I think this is a really neat idea I don't really see much potential for it beyond kids type pop-up games, because it will naturally fall victim to the kind of 3D lag and inaccuracy that the Kinect suffers from. The device was shown with a demo of a new Harry Potter game titled Book of Spells, where the player learns and performs spells from a magic book, while waving a wand over top of the book. Here is something where I would have expected the 'wand' controller to use the Move 3D system for increased accuracy, but the demo just used a plastic stick type controller, so the book itself must act in some way as a sensor or the Eye camera may just be looking for general movement like it did before the Move came out.

That is another difference between Sony and Microsoft, while a ton of Xbox games are coming out specifically for Kinect or enhanced with Kinect, Sony seems to have almost abandoned the Move system. This can't be good news for Sony, but I can't help but feel a little justified when I point out that I said Kinect would succeed (in a kid-focused way it seems) while Move would suffer from the increased cost. This is something that I think will also cause problems for this new Wonder Book product, because it is another piece of equipment that you need to buy (plus needing a PlayStation Eye Camera of course). This is where I think Microsoft went the better route with Smartglass, creating a technology that can be used on a player's existing devices, it doesn't need another peripheral, and it doesn't even require a Windows phone. The mentality of giving people a great experience without nickel and dimeing them for every piece of it is one that I prefer in marketing, and one that will normally get more support.

Sony definitely seems to be putting effort into the PS Vita, which is a definite requirement if they don't want the system to become the same mediocre product that the PSP was. Special versions of *Call of Duty: Black Ops* and *Assassin's Creed 3* are being released which should hopefully help bring Sony back to a point of actually making money. Sony hasn't shown anything about a PS4 yet (it's definitely much easier to predict the name of the new Playstation than it is for the Xbox 720?) but I think they definitely need to push to gain back some of the popularity they had before the hacking fiasco and the Move failure. People beyond the Playstation fanboys need to be excited, because right now the standard comments on most internet threads basically just de-evolve into stereotype-based insults.

Nintendo

Besides the funny Pikmin opening with all the little Pikmin helping Miyamoto plan out his outfit, and walk all across the audience, nothing else was really all that exciting. Of course the large focus was on Wii U, the new console with the potential to be another huge shift in the gaming market. One of the points that Nintendo is trying to push with the Wii U is that the system is no longer reliant on a TV, you aren't stopped from playing because someone else is using the TV, and you don't have to wait for the TV to power on to see the image (personally this has never been a critical point for me when buying a gaming system, but I'll let them have their argument).

The announcement of Pikmin 3 was a great opportunity for Nintendo to show the functionality of the Wii U outside of the standard party style games we have seen. While the main controls use the Wii Remote and Nunchuk, the Wii U Gamepad shows the entire map allowing you to plan out your strategy as well as pan, zoom and direct Pikmin with greater accuracy. I don't know how effective this interaction is going to be, considering switching between a two handed controller gamepad, and two one handed controllers is not going to be feasible in a short amount of time – critical in a boss battle for example. I am definitely interested to see how Nintendo approaches this new system, especially when it comes to which type of control becomes dominant. If you can still use the existing Wii controllers with the new system and don't need the gamepad then what is the point of upgrading to the new system, and do you really want to sideline the main distinguishing feature of your console? But then if you mainly use the Wii U Gamepad then I would really like it to be a more ergonomic shape like the Xbox 360 or PS3 controllers, so that then defeats the point of having a full gaming console. The new Wii U hardware would not be necessary to create great visuals on a screen that size, but Nintendo's big marketing point is based on how it frees you from a TV. There are still a ton of questions, and we've already known about the system for a substantial amount of time. I am kind of worried about the new system, especially in light of how Nintendo has been faring in the market recently, and whether people will actually make the jump to the new console when so many of them are in the 'casual' market – seniors' homes aren't going to have the need to replace Wii bowling with an HD version any time soon.

So that is my synopsis and impressions of the big three at E3. Again, if you are interested in seeing the full press conference for any of these three, or the press conferences for other companies you can head to their respective websites or check out www.g4tv.com/e3-2012/ for all the company press conferences and specific trailers. Enjoy the show, and Keep on Gaming.

Dividing the "Undividable"

FARZI YUSUFALI
3A NANOTECHNOLOGY

It seems that technology is moving too fast to actually understand the implications of each "breakthrough" that comes our way. For most people, the news of splitting an atom would not elicit an "Ooh!" or an "Ahh!", besides engineering students, as it doesn't greatly impact our everyday lives.

With that said, it was nice (for lack of a better term) to discover that researchers at the University of Bonn have been able to show how a single atom can be pulled apart into two halves and then put back together. While it may sound like the process of nuclear fission, this research is novel in the sense that Dr. Dieter Meschede and his team at the Institute of Applied Physics at said university, managed to keep an atom in two places at once at a distance of a 1/100 of a millimetre apart using the laws of quantum mechanics.

The laws of quantum mechanics state that objects can exist in several states simultaneously at any given time (search for the famous double-slit experiment that fundamentally demonstrates this phenomenon). In any case, such effects can't occur unless the temperature approaches absolute zero and is carefully monitored. Using a laser, a cesium atom was cooled to a tenth of a million above absolute zero and of which it was held with another laser. Since atoms have a spin that can go in both directions, the atom can move to the right or to the left using said laser. The researchers at the University of Bonn were able to move the atom to the left and right (like a conveyor) simultaneously thereby having the atom occupy two states and therefore, splitting the atom, so to speak.

However, since quantum mechanics doesn't allow you to make a direct measurement on the system, the split was not seen directly. For instances, if one was to try to take a picture of the atom, images of atoms would sometimes be on the left and sometimes on the right, but never on both sides. Nevertheless, the split was proven since the atom was put back together. Rather than trying to capture the split atom, the differences in magnetic field of the two positions and accelerations were measured since each state (being the left or the right) is characterized by the parameters just mentioned.

Using this technology, the researchers at the University of Bonn want to have the right and left halves of the atom to come in contact with other atoms adjacent to it so that it acts as a bridge between the two sides of the split atom. With this application, a small network of atoms can be connected in this way so that it can control systems to emulate phenomena (like plant photosynthesis) that were previously difficult to simulate. Also, such small quantum systems can be used to gain understanding as to how electrons move in solid bodies which can then provide starting points to further improve on electronic performance on devices currently available on the market.

While this work is fundamental in nature, it is easy to see that there are many possible applications for this breakthrough, whether it be through gaining insight on quantum phenomena, simulating small real-world systems, or making improvements on small devices (like chips) today. The next step for this research would be to first see the effects of placing atoms adjacent to the split atom and then to split more than one atom in the hopes of creating such a network as discussed so that it becomes a tool to monitor quantum-sized changes in real-world systems.

Barbara Frommann, University of Bonn

Members of the lab: Maximilian Gemske, Noomen Belmechri, Andreas Steffen and Dr. Andrea Alberti.

The Story of LiquiGlide

How Ketchup Bottles Can Save the World

ANJIDA SRIPONGWORAKUL
1B MANAGEMENT

You have probably experienced a scenario similar to this:

Some warm fries lay on the plate, ready to be eaten, but plain fries sprinkled with salt need something a little extra. Without the last ingredient, eating the fries wouldn't be as enjoyable an experience. You walk over to the fridge, open its door, and take out a bottle of your favorite ketchup. There's hardly any ketchup left in it now, mere red smudges on the bottle's sides. But you, as an environmentally friendly person, are determined to squeeze out every last drop of ketchup you can before purchasing a new bottle. You flip open the cap, turn the bottle over, and squeeze. The bottle's squeaky noises in reply to your squeezing only challenge you to squeeze harder. After minutes (or is it seconds?) or so of wrestling with the trapped air within the bottle and getting a few drops of tomato sauce on your fries in return, you give up.

Within the next two years, if the invention by the team of mechanical and nanotechnology engineers at MIT is successfully placed in the commercial market, you would no longer have to face that problem. The team, working at the Varanasi Research Center, had come up with a super slippery surface coating—an ultra-low adhesion surface, in technical terms—called LiquiGlide. A 20-second video clip posted on YouTube depicting ketchup sliding effortlessly out of a bottle went viral with over 125,000 views. Despite the team's focus on "big problems," such as water and energy, one of the goals was to develop potential commercial products. Thus LiquiGlide, a food-packaging product was born. Made from a secret cocktail of edible, nontoxic materials, LiquiGlide can be sprayed onto bottles or food containers and work not only on ketchup but also jelly, mustard, and substances including glass, plastic, metal, and ceramic. The coating could be used for anti-icing, preventing clogs in form of oil and gas line or for non-wetting applications as in the case of windshields.

LiquiGlide first made its appearance in MIT's $100,000 Entrepreneurship Competition, where it won an Audience Award. Currently the team is fielding interview requests, filing for patents, and is planning to launch a startup this summer. The team is also in talks with bottling companies. The bottle market for sauces alone is $17 million. If mass produced, the bottles would help to ease recycling, since people would be able to use every last drop of sauce contained within them. Recyclable squeeze bottles would save big caps and, in return, 25,000 tons of petroleum based plastics per year. Now you know that I wasn't exaggerating when I said ketchup bottles could save the world. Soon enough, you won't have to deal with the annoying remaining traces of ketchup on your bottle again!

Lost Bike

A blue Kona Cinder Cone with a white front fork, was taken from in front of E5 on the evening of May 30th, between 7 and 9:45pm

If anybody has information about this bike, please IMMEDIATELY contact me via the number or email address below. This bike is barely two months old.

Call or text: 519-588-8614
Email: ryantmer@gmail.com

Thank you!

It's Elementary, My Dear Watson

JON MARTIN
4A CIVIL

FROM BOOK TO MOVIE

Last week, Sherlock Holmes: A Game of Shadows was released on DVD and Bluray, so I am going to give my two cents (even though the penny is disappearing soon) on both movies and the original source material they are based on. I don't claim to be an expert on Sherlock Holmes, as I've only seen about a dozen movies, three different tv shows, and own the books in about six different versions, plus additional books like The Sherlock Holmes Handbook (a training guide on the methods of the great fictional detective). If you haven't read the books they are great, despite being published about one hundred and twenty-five years ago. The Robert Downing Jr. and Jude Law movies are great, as are the other ones made in the last five years (yes, there are more). I am not going to worry too much about spoilers as the stories are over a hundred years old, and the movie is now available outside of theatres.

So first let's talk a bit about Sherlock Holmes. Most people will know that Holmes was created by Sir Arthur Canon Doyle, and first appeared in the novel 'A Study in Scarlet' in the 1887 Beeton's Christmas Annual. Since that initial appearance Doyle wrote an additional three novels and fifty-six short stories. In most cases the stories take the form of the journals of Holmes' friend Dr. John H. Watson, a retired army doctor who shares an apartment with Holmes because both are looking for comfortable living arrangements with someone who isn't too annoying but will pay half of the bill. I'm not kidding, that really is how one of the greatest literary teams in history met. The character of Holmes, and his amazing attention to detail, is said to be based on one of Doyle's professors in his training as a doctor. The professor had a talent for identifying where a cadaver had lived, worked, and died based on the wrinkles around their eyes, the way they wore their watch, and many other items that were unbelievable at the time but are now commonplace in forensic science.

Some people have complained that the Robert Downing Jr. version of Holmes is too action oriented, making quick remarks under his breath and generally acting differently than the 'classic' portrayals we have seen in the 50s through the 90s. But this is just another portrayal, among many. The character of Sherlock Holmes currently holds the Guinness World Record for most portrayed movie character, with 75 actors playing the part in over 211 films – the first in 1900. So who can really say which is the 'right' portrayal, should Holmes be played the way he has for the last 112 years, or were these 'wrong'?

I also want to talk about in this article are some of the other aspects of Holmes' character that are in the stories, but have rarely been replicated in film, and are now the main complaints people had about the two most recent films. The three main points will be thinking forward, combat and weaponry, and the Woman.

"Thinking forward" is what I am choosing to describe as the Guy Ritchie movie sequences of slow motion where Holmes plans out the entire fight before him based on his observations of his opponents. A slight twist of the head tells Holmes the enemy has a hearing loss – hit him on that side to further disctract, a limp on one side – target that knee for increased effect, hit the windpipe in a specific spot to instantly silence the enemy without permanent damage. These effects made a lot of people complain about how the movies were too action oriented and unrealistic, but I totally disagree. This is the exact kind of thing a person like Holmes would do. If he could identify a person's occupation by the way they wind their watch, I think he is going to apply the same care and attention when the person is trying to kill him. I also think it makes the movies more believable rather than less, especially since the default fight scene is one where the hero and villain pummel each other till one gets shot thirty times. Having Holmes plan out his attacks shows how an ordinary man could be an effective combatant using skill and knowledge rather than brute force.

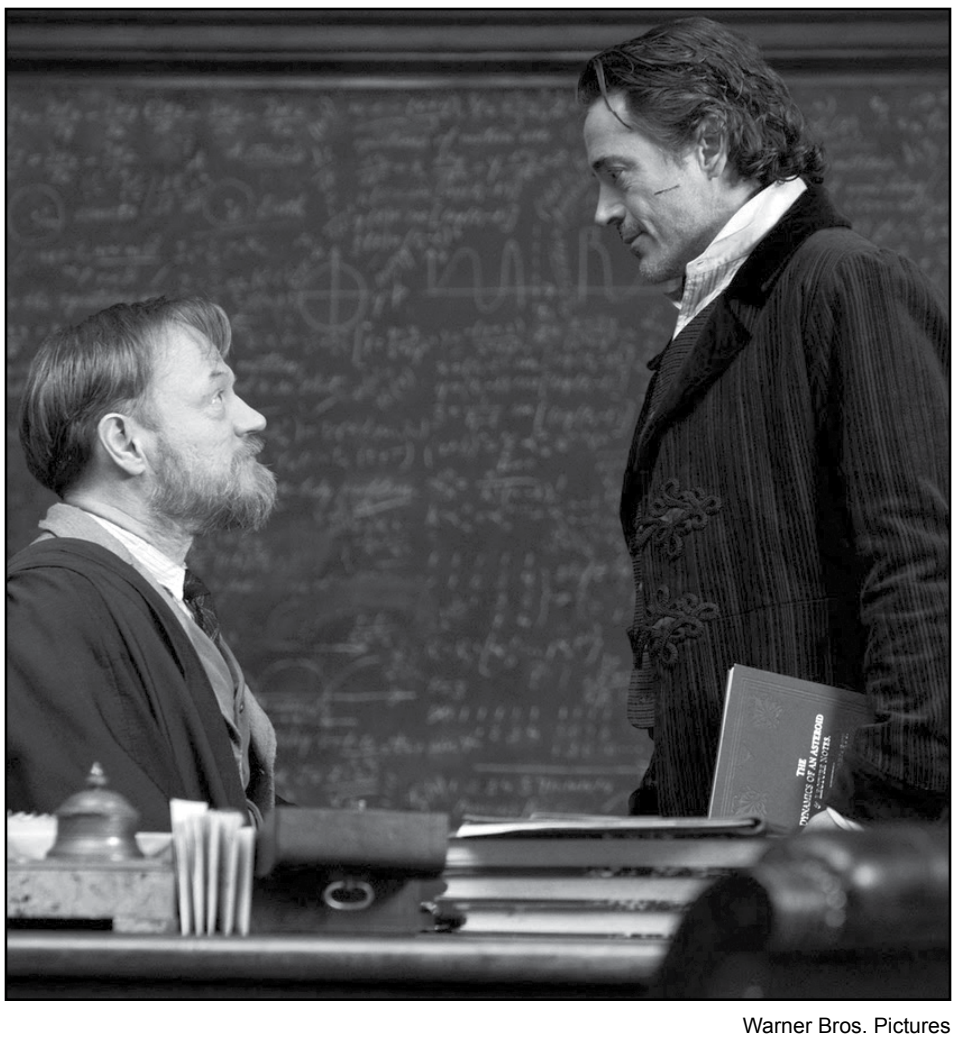
In "A Study in Scarlet," Holmes talks about how many people can think forward (knowing that if A takes place, B will follow) but that very few people can reason backwards (What caused A?). Holmes' fighting technique is a form of that thinking, with the final result being the successful incapacitation of the enemy, but by an unknown path. This comes into effect when Holmes and Moriarty are facing off at the edge of Reichenbach Falls, and we see the way that they are both trying to out think the other and figure out the path of the battle that is going to ensue. It is a great scene, and although the way the narration is played out it gets a little surreal, it's an awesome way of building up to what was a very simple battle in the end.

That brings us to combat rather nicely; another thing people complained about. Many people felt that Holmes was too much of a fighter instead of a thinker, but this is more the fault of previous adaptations failing to accurately portray the character. Throughout the stories Holmes is described as a champion of boxing, often getting into matches for gambling purposes. He is also an accomplished master of Baritsu martial arts, a mixture of jujitsu, boxing, and fencing (which Holmes is also skilled at). Holmes and Watson were often required to carry pistols with them, with Watson being the better shot of the two men. It should be noted that in both movies Holmes regularly sets up scenarios using complicated deduction and planning tools to give Watson the opportunity to make the necessary shot.

So the final point I want to mention is the inclusion of Irene Adler, or "The Woman" as she is sometimes called in the stories. She is the only person who has ever outwitted Holmes and he has a deep respect for her, and was portrayed perfectly in the movies by Rachel McAdams. Adler is a character who stole from and blackmailed powerful men despite being a woman in Victorian England. I expect her to make a return in the next movie, or at least be shown to have escaped, because killing her is not a smart strategy for Moriarty. If you have a valuable hostage that your enemy finds valuable, would you really kill them? Or would you lie about it (Irene's dead body is never shown onscreen) and keep her as an ace up your sleeve? That's just my hope for the next movie, which is already in development for an expected 2014 release.

Another great use of the original stories was using the plot of 'The Final Problem' where Holmes and Watson travel to Reichenbach after having put the final piece in the puzzle of defeating Professor James Moriarty. The story ends with Holmes and Moriarty evenly matched in battle and plummeting into the falls, where Watson presumes them both dead. This story was then followed by 'The Adventure of the Empty House' where Watson learns that Holmes actually survived, with many stories happening after this point. I was great to see the use of these pieces in the larger story that they created in the second movie, and I hope they use more pieces in the next movie.

If you are interested in the original stories check them out, and definitely look into the other movies and mediums. There is currently a TV show on BBC ("Sherlock") with a modern retelling of some of the stories, and I will admit I really enjoyed watching the animated 'Sherlock Holmes in the 22nd Century' series back when it was on TV. Another recent television movie adaptation is 'Sherlock Holmes and the Baker Street Irregulars', a slightly more traditional adaptation from 2007 starring Jonathan Pryce as Holmes. Good luck with the last of your midterms and remember to relax with a good book or a movie.



Warner Bros. Pictures

Jared Harris and Robert Downing, Jr as Professor Moriarty and Sherlock Holmes

From the Silver Screen to the Big Screen

Photos from IMDB. All rights belong to respective studios.

NANCY HUI
2B CIVIL

TAKE FIVE

My media-commitment issues and I have never been the type to follow TV shows, mostly because my parents have never paid for cable. No, we had a small screen and rabbit ears during my formative years. Now we have a large screen and even larger rabbit ears. Go figure. Well, at least almost nobody can get HBO through the usual channels.

Movies based on television shows have the unenviable task of juggling faithfulness to source material for the fans and being watchable and approachable for non-fans. They must stay true to the style, quirks and characters that made the show popular, but also find a way to integrate them smoothly into the movie so that a cunning in-joke doesn't come off as jarring and out of place. With few exceptions, Hollywood usually succeeds. I saw all of the below movies without difficulty in cottoning on to the concept and and context the first time I watched them as a non-fan.

So why note that the movies are based on television at all? For several of my choices, I was intrigued by the mythology the film hinted at and took a bit of time to familiarize myself with character backstories and myth arcs later. Not all the choices, of course. Some movies can only be appreciated in the moment, and afterwards there is absolutely no desire to learn more about the source material. Sometimes the movie is made decades after the show's finale, leaving the source material dated in comparison to the movie. To find great movies based on watchable shows is nearly impossible.

Not every show is deserving of a movie, either. If they announced a Glee movie I think I'd choke on my pineapple quiche, because... why? It would be exactly like a particularly long, painful, and offensive episode of the source material. Are the kids of McKinley High ever going to save the world like the kids of Third Street School (Recess: School's Out)? Not unless it's by the power of song and sunshine and following your heart and that namby pamby crap. The movie adaption must have some sort of ambition, whether it be in the scope and consequence of the characters' actions, large special-effects budget, or to attempt to resolve dangling plotlines. Glee hasn't got it, good riddance.

All in all, lack of cable or time to enjoy it didn't impact my absorption of movies into my pop-culture cortex. Few live-action TV shows are made into full-length feature films, and when they do, they usually function quite adequately as standalone pieces. These are five of the best.

The A Team (2010)

A Special Forces team in Iraq with eight years and eighty successful missions under its belt in Iraq is sentenced to prison after a heist gone awry. Unwilling to spend a decade in prison, they break out and search for a way to clear their names, but the plot is irrelevant to your enjoyment of this movie.

The A Team is shallow and ridiculous. It features Liam Neeson as the team leader, Hannibal, who orchestrates the wholesale theft of car doors and airbags for the greater good. Meanwhile a voice in my head was screeching, "Bad physics! No biscuit!" all the way through to make sense of exactly why such implements were required, but of course, that doesn't matter. More movies should have high-functioning lunatics like Murdoch (Sharto Copley) and the mohawked B.A. "Pity da Fool" Baracus (Quinton Jackson), who is also the team pacifist. The sheer unlikeliness and energy of the plans the team orchestrate elevate The A Team several notches above the average action movie.

It is, however, still an action movie with almost not appreciable depth to the characters. If you delve into the mid-eighties source material, which is rife with sexism and Vietnam references, I award you the Invisible Cheeto Hair Award and bid thee a good day.

Get Smart (2008)

The identities of all field operatives in an intelligence agency are compromised, except for that of an agent who has never been allowed into the field because he's just too good of an analyst, and an agent who recently underwent massive plastic surgery. Together, they must combine their disparate strengths to bring down a terrorist organization.

Get Smart was a comedy aired in the 60s, satirizing the secret agent genre, far before my time. I've never wanted to watch it, although it looks fairly tolerable and won several comedy Emmys.

Yet another movie about the bumbling law enforcement officer would be tiring, but Agent Maxwell Smart (Steve Carrell) is an oasis of steely-eyed brilliance and unexpected competency in the wasteland of dishonourable officers like Inspector Clouseau and Johnny English. He holds his own among more experienced agents, including the heroic, muscle-bound Agent 23 (Dwayne "The Rock" Johnson), the shrewd Agent 99 (Anne Hathaway), and the Chief (Alan Arkin), by virtue of incredible luck and cartoonish physical indestructibility. But his major point of appeal is being adorable. Agent Smart is so awkwardly earnest to the point where I want to hug him like a kitten dressed as a nice suit.

Star Trek (2009)

A young and rebellious James Tiberius Kirk (Chris Pine) struggles to prove himself in the shadow of his father's heroic sacrifice at the hands of Nero (Eric Bana), a time-travelling madman. Years later, Nero reemerges from a black hole with a taste for vengeance. Timelines converge. Spaceships explode. Lenses flare.

Yeah, never had the chance to catch any Star Trek on TV either, so the cameo of the venerable Leonard Nimoy and the continuity jokes didn't affect me as much as it should have. That aside, it's a mighty fine adventure movie, or a superhero origins story. How did the dashing bridge crew of the starship Enterprise get so rapidly promoted? How did Jim Kirk rise from juvenile delinquent to Federation hero? And how does he win the respect of the supremely unimpressed Spock (Zachary Quinto)? The answers to all of these questions are highly implausible twists of fate orchestrated with a touch of time travel, for no other apparent reason than destiny.

Well, destiny gets me explosions, incredible chemistry between crew members, and Simon Pegg as Scotty the engineer. It's exciting. Much unlike Star Trek: The Original Series. TOS has some good episodes (e.g. "City on the Edge of Forever", "Mirror, Mirror", "Amok Time" and "The Trouble with Tribbles" being some of the fine exceptions), but for the most part is rather cheesy and shimmers with sixties sci-fi aesthetic. Interpret that however you want, for good or for ill.

Fight the Future (1999)

A young boy in Texas is killed by a mysterious black sludge seeping out of the ground under mysterious circumstances. Two FBI agents, Mulder (David Duchovny) and Agent Scully (Gillian Anderson) investigate, but take one step too close to the truth while attempting to unravel a worldwide extraterrestrial coverup.

Fight the Future was meant to follow the fifth season of the X-Files, but works surprisingly well on its own by distilling the multi-season myth arc into what seems like one last hurrah for Agents Mulder and Scully. It ends with a cliffhanger and no definite answers, but I was satisfied all the same. Why should everything in a conspiracy be explained to the viewer in full detail? Leaving details in the gloom and loose threads at the edges of the frame suit Fight the Future. There are some cameos from recurring characters that were puzzling to me as a non-fan, but I'm willing to let that slide because David Duchovny and Gillian Anderson are flawless in their roles as extremely capable federal investigators of the very strange.

Seriously, how could you watch this movie and not want to look into the backstory? Perhaps because of the overwhelming length of the series. There are nine seasons, and the majority of The X Files are monster-of-the-week investigation episodes. I've attempted to finish it multiple times but have never made it past Season 3. I suppose it's for the better, because I'm told everything goes downhill after Season 6, and the second feature-length film (I Want To Believe) is rubbish. That doesn't make Fight the Future any less awesome, though.

Serenity (2005)

It is the year 2517. After a violent incident in a seedy bar, a crew of smugglers discover a dangerous secret locked within the damaged psyche of a young passenger on their ship. Then they must decide whether or not it is worth everything to expose the truth to the public.

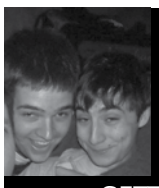
Every internet denizen worth their salt has heard the tragic tale of Firefly and how it got cancelled by the executives of FOX before the end of Season 1. I was not one of them, until a fateful night watching TV movies several years after the fact.

Now, I'm glad the fans pushed to get this movie made, because I've never seen a movie that was such a successful study in contrasts. It's a sci-fi movie, with a western aesthetic, and a hefty side of political commentary. Joss Whedon's script is brimming with an odd, seasoned wit, much like a doctor might make off-colour jokes in the break room, but there are unexpectedly eerie and beautiful moments scattered throughout. The settings range from shinier than the gleaming spires in Star Wars to grittier than the industrial rigs in Alien. (The titular spaceship, on the other hand, is simply homely and looks like the 26th century equivalent of a Frankencar.) And, quite fittingly, the tone of Serenity captures desperation as well as anything I've ever seen. Not only are the crew essentially making a last stand against the Alliance in the name of truth and vengeance and love, but this is the cast's last time playing that set of characters.

It really is a shame. The first five of fourteen episodes of Firefly are on the bland, awkward side but everything from "Our Mrs Reynolds" onwards is truly excellent. Watching all of the episodes takes less time than an extended-edition Lord of the Rings marathon. And after I finished them, I watched Serenity again and wept a single tear of combined joy and sadness.

I suppose that if you're already familiar with the show's story and still haven't watched it, then there's no convincing you. But I can promise you that there are far worse things to do with your time.

Well Hello There, Sailor!



GRAEME SCOTT
3N CHEMICAL
ERIC EVENCHICK
3N ELECTRICAL

GETTING GOOD HEAD

Graeme: Sorry I wasn't in the last issue, I was busy sailing the ocean and fighting off giant squid, and as a result was unable to reach my typewriter to contribute. However I am back and due for another exciting adventure in Getting Good Head.

This time I will be reviewing Spring Oddity, from Muskoka Brewery. I have decided on this for two reasons. 1: I saw it at the LCBO and liked the bottle, so in this case I'm judging the book by its cover. 2: My good friends dad is a part owner of the Muskoka breweries, and I've had so much free beer on him that I figured I should pay them back somehow.

Muskoka Brewery is located in the Muskokas (SURPRISE!) and is an award winning Ontario craft brewery, and, partially through drinking a lot of it, is one of my favourite breweries. They have year round selections, such as their Cream Ale or Mad Tom IPA, as well as seasonal specials, including Spring Oddity (bonus points if you can guess the season). It is a Belgian style Pale Ale brewed with "Pure Muskoka Water" amongst other things (one of which is Juniper Berries, which apparently are real things).

Upon pouring it is immediately noticeable that this is a very heady beer, or I didn't pour it very well. Either one is possible, and will be determined on my next tasting, (2-3 paragraphs from now). The beer is light looking with a dark golden colour, which is probably slightly brighter than I'm describing it, because my glass is foggy. It smells sweet and looks quite delicious now that the head has settled in. Time to drink up. Wait...my phone just went off....and now that I've just had a lovely conversation with my mom, time to drink up... Part 2! (Dramatic Music).

Upon my first sip it is immediately noticeable that I like this beer. It is very sweet and rich with a very nice hint of citrus and tastes a lot more like a Belgian white than something like Shocktop (which for the record, I have been fooled by as well, this is a reference to our last article where Eric was tricked). It can also be noted that, unlike many strong beers, Spring Oddity goes down surprisingly smooth and tastes much lighter than it actually is. This could be a positive or a negative depending on whether or not you want to do karaoke.

With one glass finished, it is time for round two. It would seem as though my hypotheshis was incorrect: this beer is not very heady, I just poured it very badly the first time... whoops. Anyhow, this pour was much better and I can move on. Again, very enjoyable. The beer is quite carbonated and has a good bite, kind of like Barqs Root Beer. Spring Oddity also has a very dry and somewhat sharp aftertaste, which I enjoy, but some may not enjoy quite as much.

Overall, I quite enjoyed this beer, and, although not quite as good as some of Muskoka Brewery's other selections (such as Mad Tom IPA, which is a current favourite of mine), it is still very good, particularly for a seasonal beer. It fits right in with spring by neither being too light or too heavy (even for a strong beer) and as such I shall award it. 4.2 Surly Bartenders out of 5.

Join us next issue where will discuss how to properly pour a beer (i.e. get good head).

Cheers,
Eric and Graeme

John Stewart, The Lantern of Sector 2814

DANIEL OSORIO
2B NANOTECHNOLOGY

UNSUNG HEROES

What exactly makes a hero? We know you need the drive, like being endowed with great power or having to avenge someone. We know you need friends and allies because no one person can stand alone against the hordes of evil. Finally you need to make a difference, like being a symbol of hope or changing a life. But what about the hard decisions, the decisions that no person could ever make? The impossible choice is the true test of a hero; it's not killing a giant dragon whose limbs shatter mountains and back shaves the sun, it's the moral conundrum that a hero has to make for the greater good even if doing so destroy them. There is such a hero that runs across the comic mythos and his name is John Stewart, the Lantern of sector 2814.

After the original Green Lantern, Hal Jordan, joined the Justice League he was spread pretty thin, and so the Guardians (the guys who run the Green Lantern Corps) assigned a new Green Lantern to Earths sector, Guy Gardener. Guy Gardener however got seriously injured by a monster called Doomsday; the Guardians needed yet another back up for Hal Jordan, and so the role fell to US marine John Stewart. Taking up the mantle John was found to be one of the best Green Lanterns, he was formidable in combat, intelligent and intuitive, and he had immense willpower to carry on the mission at hand.

Unfortunately on one of John's first missions he was sent to protect a planet called Xanshi, unfortunately he was unable to and entered into a deep depression. After some time John Stewart began to forgive himself for failing and was entrusted by the Guardians to overlook a planet called Mosaic World, an amalgamation of different worlds. John eventually led Mosaic world to becoming a strong formidable society amongst the different races. John became so powerful that he became the first human Guardian known as the Master Builder. With this power his abilities rivaled those of an intergalactic god. That's right he became a freaking god. However when a crazed Hal Jordan destroyed the Power Battery, the Green Lantern Corps Energy source, he lost these godly powers.

After some time the long established enemies of the Green Lantern Corps, the Sinestro Corps, targeted to destroy earth. One member of the Sinestro Corps known as the sniper was tasked to set up camp three sectors away to take down the Green Lanterns from afar. It was virtually impossible to get close to him because he'd kill you before you even had a chance. But John was able to close in on him by using clever tactics and his experience in the army.

Through his many adventures and losses John Stewart finally decided to get over his loss of Xanshi and visit the graveyard planet and pay his respects. However at this time the entity of death revived all of the planets inhabitants as Black Lanterns, along with John's deceased wife. Refusing to join them the controlled corpses attacked John. John fought off the entire planet; one guy, fighting a planet infested with super powered zombies. Yeah, that happened. After defeating the Black Lanterns, John raced back to earth to warn the others of the Black Lanterns existence. Without John Stewart, the world, nay the universe would have been destroyed by Black Lanterns. After the defending forces were amassed John Stewart led a portion of them into battle.

When the Green Lantern Corpse was nearly wiped out by the Black Lanterns, a crazed Guardian by the name of Krona started to create Green Lantern rings poisoned with fear in order to control them. John along with the three other earth Green Lanterns were able to remove their rings before they were infected. Taking the mantle of other colored rings, the four Lanterns began to battle the entire core alone. John was given the task of taking on Mogo, the living Planet. Mogo had been changed into a manufacturing Planet to create the poisoned rings and infect more people to become Green Lanterns. John quickly saw that the only way to stop Krona from becoming too powerful would be to kill Mogo. Making the hard choice John had destroyed the legendary Lantern to save the universe yet again.

Currently in the comics John Stewart and fellow Green Lantern Guy Gardener are fighting off a new threat, a race of aliens that feed off willpower. While battling the alien race, John was captured with other Green Lanterns. The Lanterns were tortured and beaten and interrogated savagely until one of the Lanterns was willing to give up information that would kill many more Green Lanterns. John made the hard decision again breaking out of his chain and killing his fellow Lantern to save the Corps.

John Stewart also made an impact on comics because of his race. He was the first black superhero to not have the world black in his title, like Black Lighting, Black Panther, Black Tarantula, and Black Manta. In fact his original inception sought to create a strong African American hero that didn't have the negative stereotype and generic attitude that was portrayed by black characters in comics. So the main embodiment of John Stewart is to give the finger to racism.

So let's do a recap on the man we have just come to know. An ex-US marine who is honorable and an all-around badass? Check. A master tactician and leader, intelligent and powerful enough to lead a planet and become an intergalactic god? Check. He's a master anti-sniper able to take down a man who was thought to be impossible to kill? Check. He was able to fight off an onslaught of super powered zombies, who resembled everyone that he has ever cared about including his wife and his people? Check. He makes the hard decisions that no one else can make for the greater good by sometimes having to destroy a planet and fellow Lanterns? Check. His main existence is to give a big F U to racist bigots and prove that stereotypes don't have to exist? One big check. So next time you're watching that atrocious Ryan Renyolds movie just hit the pause button and go read the Green Lantern Corps comic book and read about a true hero, John Stewart the Lantern of Sector 2814.

DC Comics
John Stewart, who first appeared in Green Lantern vol. 2, #87 (1971/1972).

Top Ways to Do an Assignment Last Minute

WADE WILSON &
EDWARD BLAKE
3Z HANDSOMENESS
TOPZ (WITH A Z)

With our feet back on land and our fares paid to Charon, many engineers are finally done and can get out for a ton of fun in the sun. But as you wake up in a Monday haze, there's a good chance that you might realize that the world around you has had the terrible bad manners of continuing to turn, and just because you ascended from Hades it does not mean that those lines are any less dead. What are you going to do? Where are you going to go? Who are you going to call? We'll tell you whom: your friendly neighbourhood columnists! We've compiled for you a comprehensive guide to meeting deadlines at the last minute!

Butter-up the Boss

When you're in a jam, butter is always the way to go. Appendage stuck in a bottle? Butter it up. Candybar stuck in plainsville? Butter it up! We picked up this technique from our dear and handsome friend, Jacob Terry, whom Waterloo region recently placed second in the "Most handsomest boy" beauty pageant and awarded him the prize of ten dollars! Every time they try to speak, just interrupt them with a deluge of compliments. This works exceptionally well because it also prevents them from expressing their own anger. Of course, it isn't easy to come up with compliments all the time, so we recommend just pretending that you're talking to someone you really respect and find handsome, like Mahatma Gandhi, Pierre Trudeau, Jared from the subway ads, MLK Jr., Nelson Mandela, or Jacob Terry, editor of the Iron Warrior. Some of the world's smartest, most ambitious and handsomest men, like Jacob Terry, use this trick all the time. It's like Sir Arthur Conan Doyle wrote in his famous book, "Sherlock Holmes and the Case of the Haunted Cove", "Complimentary, my dear Watson."

Use Quotations

Some might claim that the excessive use of quotations or citations is a cheap ploy to fill space. Some might also say that some are just big jerks who suck and we hate them. Quotations are an important way to beef up your arguments and add credibility. Winston Churchill once said, "It is a good thing for an uneducated man to read books of quotations. Bartlett's Familiar Quotations is an admirable work, and I studied it intently. The quotations when engraved upon the memory give you good thoughts. They also make you anxious to read the authors and look for more." Now we know what you're thinking. Whoa, whoa whoa! Am I reading the "Classy Gazette" or "Exquisite Times"? You're not, but you might as well be. After all, as Hendrik Willem van Loon once said, "somewhere in the world there is an epigram for every dilemma." It's true, Mr. Willem van Loon, it's very true. Your job, reader, is to simply embark on a mission to find that quotation and use it. If there is still any doubt in your mind, just recall the immortal words of Jacob Terry, "I'm a very handsome boy who's not only handsome but also smart, but I'm still also handsome."

Don't Send a Corrupt File

Sometimes it totally happens that something was completely and submitted on time but then the file made like a youth exposed to Harry Potter and became irreparably corrupted! This legit happens on its own even though some people might be so crass as to make a Word doc with the expected size of one's finished work, open it in notepad and delete some of the gibberish you'll see making it corrupted and unopenable which some people might submit prior to deadline so that they can buy more time. Such people are turkeys of the lowest and scroundreliest order because when computers are being jerks and corrupting your files when they really were done on time, they make it look like they weren't! If you find yourself in this predicament, you had better hope that the person to whom you're submitting your assignment is kind and understanding and handsome.

Plagiarize

[This section has been redacted in accordance with uWaterloo Policy #71.]

Easy Topics

No matter what it is you're working on, there are always easy fall-back topics. After work term reports, for example, it was not difficult to decide that our absolute favourite word was "optimize". Or when writing an article on the top ways to do something, just give "ironically" crude advice about drugs, sex, and money. It isn't our fault that these always find our way into our articles, they're just the top ways to do near about anything!

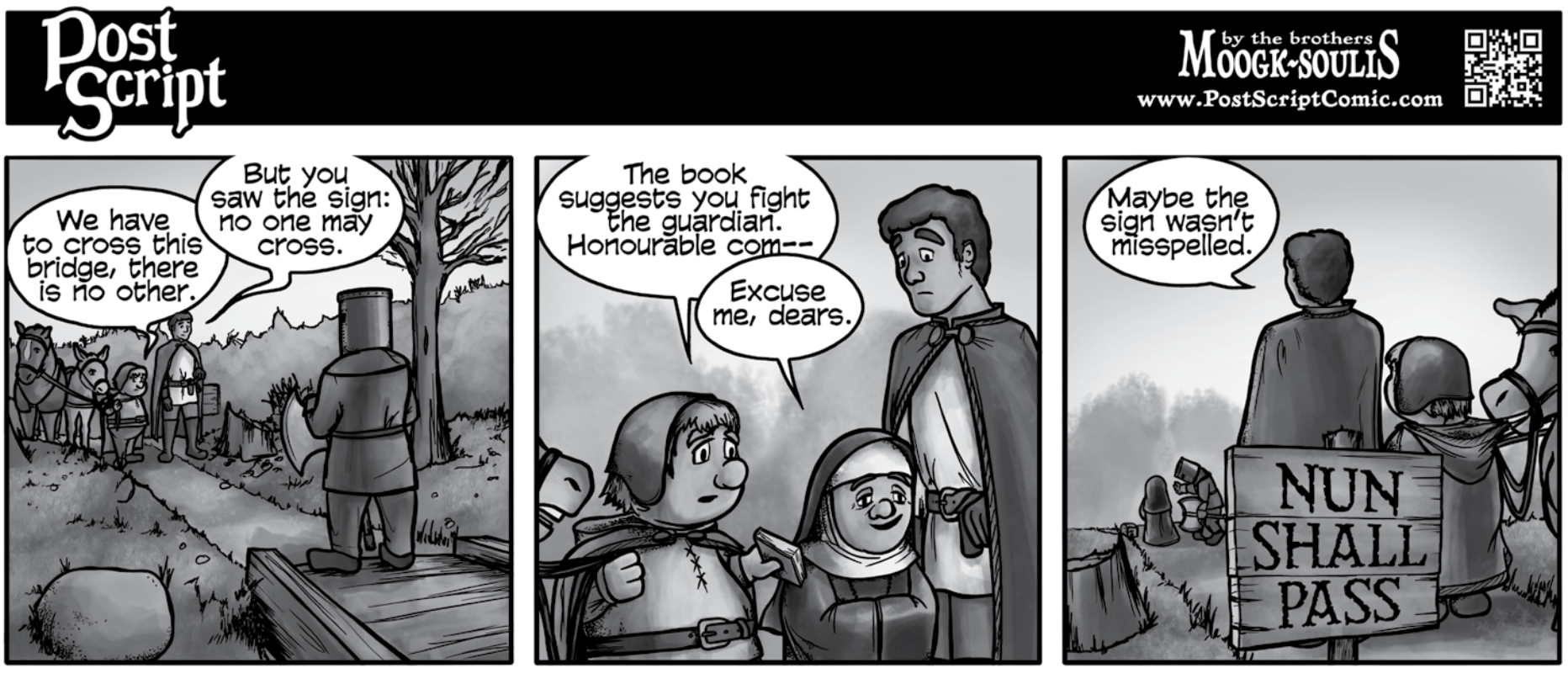
Drugs

No, we aren't talking about taking caffeine or Ritalin so that you turn into Bradley Cooper in Limitless or psychedelics to inspire your creativity. No, we're talking about giving drugs to your boss so that you can pretend that they received your assignment on time, and simply forgot about it; if that doesn't work, you can blackmail them with the pictures you took while they were in Wonderland.

Lie

When all else fails, you don't have much of choice. Owning up to your mistakes is really dumb when you still may have a shot with getting away with a lie. We saw this happen while out on Friday and Saturday at the national Alibi convention gathering information to write an amazing set of articles for The Iron Warrior. Unfortunately, there was a huge hurricane and we lost all of our information and also had amnesia so we couldn't recall it but it was only partial amnesia so we remembered this much about the convention.

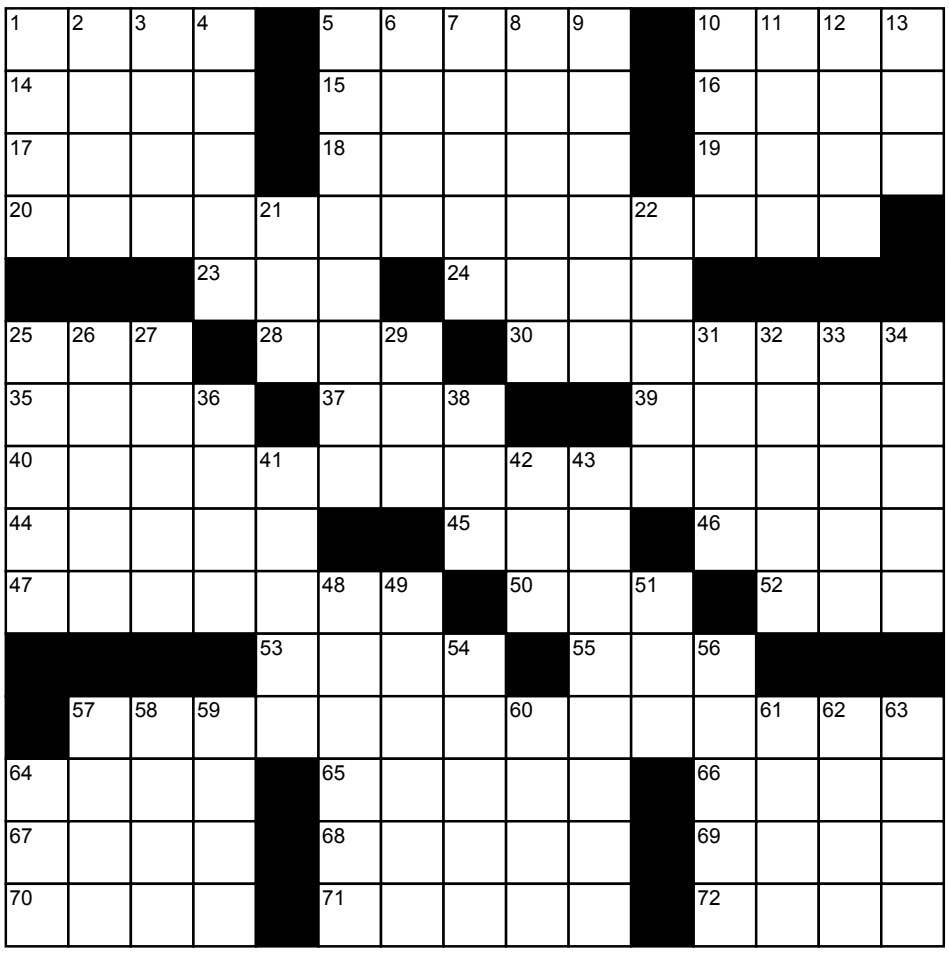
And there you have it: a comprehensive guide which took us a very long time to write about something that is very relevant and not at all leaning heavily on the narcissistic notion that being meta is a crutch for the lazy to appear more thoughtful than they are. Unlike Jacob Terry, who actually is more insightful … and handsome.



The Iron Crossword

Post Exam Stress

STUART LINLEY
3A NANOTECHNOLOGY



ACROSS

1 Found with pans
5 Function or faceted go-with
10 People of recent celebration
14 Work for
15 'Spin _ ____' (tell a story)
16 Bubbly chocolate
17 Scram
18 Shortwave, e.g.
19 Boisterous
20 (Treat 20&57-Across as a single answer; see 57-Across for clue)
23 Taro dish
24 Licensed, in ON
25 Foreign relations group
28 Wildebeest
30 Canadian natives
35 Like some exams
37 Y. preceder, perhaps
39 Bring together
40 After midterm activities
44 Perfect
45 Pool item
46 Views
47 Decorative molding
50 Swab
52 Mouths, medically
53 Angle, as a curve
55 NFL or NBA athlete
57 Post-midterm feeling as work piles up? (See 20-Across for instructions)
64 List
65 Set
66 Fantastic number
67 Went down
68 Jumped
69 Sicily feature
70 Joy
71 Detect
72 Shoot!

DOWN

1 Mexican currency
2 Hawaiian island
3 Certain gait
4 Mr. Dogg
5 Common Sp. surname
6 Yes; duh
7 Serve (out)
8 Creamy dessert
9 Encircles
10 Spanish surrealist
11 ____ Flux (2005)
12 Knock out
13 Turf
21 Horn or light go-with
22 L'il Abner surname
25 L'il Abner, e.g.
26 He walked into Mordor
27 Less common
29 Ship preceder
31 Halogens
32 Sicilian town
33 Playful animal
34 Chaturanga inventor
36 Thin
38 Spasm
41 Excuse
42 Block (up)
43 Beginner
48 Channels
49 Main dish
51 Before
54 Islamic tome
56 Chance
57 Ring, as a bell
58 Green Gables girl
59 Microwave
60 Trumpet solo
61 Tiny bit
62 Little guy
63 Decades, perhaps
64 Flavour enhancer

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

Sudoku

#2012-08

JACOB TERRY
2B NANOTECHNOLOGY

Easy

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

Medium

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

Hard

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

Issue #4 Deadline:
Friday, June 29 at 6:00 PM
Send your submissions to:
iwarrior@engmail.uwaterloo.ca

THE IRON INQUISITION

Emily Gruber, 2B Nanotechnology
Nan Huang, 2B Nanotechnology

"Do you support the Quebec student protests?"

"It's good to start, but they don't have a lot of basis since they have the cheapest tuition."
Shawn Simmons, 2B Chemical

"Yes, because tuition fees are too high. I'm glad someone's standing up for students."
Raymond Fung, 2B Nanotechnology

"If you have co-op, you don't care. It's all perspective. Arts students would say otherwise."
Charlie Ou Yang, 3A Computer

"I don't. I think they should suck it up. They have the lowest fees in Canada."
Ishan Prabhu, 2B Civil

"Tell them to get a job."
Noah Wolfe, 2B Civil

"No. I think the protesters are going about it the wrong way, and I dislike social dissent."
Kal Sobel, 3A Mechatronics