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Supreme Court Rules in Favour of Doctor-Assisted Suicide

EngSoc: Upcoming Votes and Events

#BellLetsTalk: The Pros and Cons

twitter.com/TheIronWarrior

Facebook.com/TherironWarrior

The award-winning toboggan team in Kelowna, BC.

Everyone Loves Waterloo

“People’s Choice” among 9 podium finishes for Waterloo at GNCTR 2015

At 3:30 am on January 21, 26 students from the University of Waterloo were awake en-route to the airport to represent Waterloo at the Great Northern Concrete Toboggan Race (GNCTR) in Kelowna, BC. This competition, which lasted 5 days, is one of the longest standing engineering traditions and requires teams of undergraduate engineering students from across the continent to design, build, and race a concrete toboggan. The toboggan must weigh less than 300 pounds, hold five people, have a concrete running surface (only concrete can touch the snow), fully functional steering and braking mechanisms, and have a protective roll cage! This year GNCTR had 18 competing universities with over 430 students.

This year’s competing team consisted of civil, mechanical, and mechatronics students in their 2nd to 4th years. As the core team members had previously attended GNCTR (a first for Waterloo) the design was largely based off past experience. The team designed a wide aluminum-framed toboggan for greater stability. The two skis utilized a complex composite section, involving low-density concrete, rigid foam, GFRP-reinforcing mesh, and CFRP post-strengthening which acted in composite with the aluminum frame. A lightweight frictional steering system was activated by the rear rider. Braking involved a massive bear-trap-like steel plate dropping at the rear of the toboggan when engaged by the brakesmen.

Design work began last summer along with hundreds of hours spent batching and testing new concrete mixes. During the fall term design was concluded and a final concrete mix was selected. Construction of the ski formwork was done using 100% recycled wood material from past concrete canoe formwork. The skis were poured in late November, with the toboggan being assembled during December and the first week of January. The toboggan was then shipped in a crate, with the team flying out to meet it two weeks later.

This year, the University of British Columbia Okanagan (UBCO) played host in Kelowna, BC. Teams were judged on the toboggan design, technical report, technical presentation, performance on race day, and team spirit. Each day, teams could be heard yelling their school’s cheers or the competition chants, all while wearing their themed costumes! Waterloo went as the University of Waterloo Fire Department (UWFD), wearing firefighter outfits for the week, even on competition day skiing at Big White! The team’s technical exhibit was also built around this theme with all of the technical posters, samples, and report being themed around a fire hall.

This year, Waterloo performed quite admirably gaining awards in technical and spirit categories. First place trophies were awarded to Waterloo for Concrete Reinforcement, Most Sustainable Team, and People’s Choice (everyone loves Waterloo!). Waterloo also came home with six other podium finishes. University of Calgary came away as the winners of GNCTR 2015. The team had an incredibly memorable time in BC and in Waterloo designing and building the toboggan! A large contingent of the team is graduating this year and the younger students on the team are eager to carry on Waterloo’s successes. If you are interested in joining this fantastic and award winning team, please contact the team captains at uwaterlooconcrete@gmail.com.

The toboggan’s braking mechanism.

We had 713 students vote in this election, a turnout of about 18%. Even though 5 out of the 6 positions had only one candidate running, it is still important that people took the time to vote. The unopposed candidates still had to receive the approval of the engineering students to actually be elected. Your vote ensured that you had a say in choosing the people responsible for matters such as events and services, representing you to external groups and the KW community, academic issues, finances, and the governance of the engineering society as a whole.

Overall, I’m quite happy with the campaigns the candidates ran as a whole. They were all great to work with, and have put a lot of work into their campaigns. The winners will now certainly have their work cut out for them over their 16 month term.

This is Andrew Davidson signing off as CRO, and thanks for voting!
It’s been an eventful few days. The nut- a-snow-day, upcoming midterms, and the Iron Ring ceremony! But despite it all, including a very unfortunately placed production weekend, we’ve finished the second issue of the Iron Warrior this term. The first draft actually went out for review at 9PM Sunday - a personal record (admittedly with only two data points...).

We have a lot of articles this issue, including Ashlyn’s interview of Dr. Cham- dramouli M. Radhuramathan (if you have a prof you’d like to see featured, shoot me an email at iwarrior@uwater- loo.ca). We also have a few returning columns including the concrete Tobogang team and their MACIVE TROPHIES on the front cover. Kathy has also put together a killer, seasonally-appropriate crossword for this issue. There are also a lot of things going down with the Engineering Society right now: check out the EngSoc exec reports on pages 8 and 9 for any news about Isolmedic scheduling software and the upcoming E7 Referendum! And a big ol’ CONGRATULATIONS to the Concrete Tobogang team and their MACIVE TROPHIES on the front cover.

My two personal favourite articles of the issue are probably Meagan and De- vika’s articles on the effectiveness of Bell’s #Let’sTalk campaign to “raise awareness” for mental health. Is it help- ful, just a publicity stunt, or possibly both? Check it out on page 4.

I’d like to thank Nina for coming in to copyedit, and Bryan Mailloux for coming in to copyedit, and Bryan Mailloux for all the work done setting up the professors. The original of an egg!) Also kudos for putting the fine formatting issues despite having re- done them after the proofs. Layout Editors: Emmanuel Utuama Bryan Mailloux

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All of this is even more important in engineering, where there otherwise isn’t enough to look forward to except the turning of the world, the endless cycle of school and co-op and school and co- op, where school offers you nothing but an unending stream of assignments and labs, and you’ve landed a co-op place- ment that you’re somehow not absolutely stoked for despite claiming during the interview that you would love nothing more than to work in X field on Y pro- ject. Sorry, I’m exaggerating a bit there. Waterloo offers possibly the best under- graduate engineering education in Cana- da, and the prestige of its co-op program is unparalleled.

But, you know, it’s probably not healthy to just look forward to work and school. Co-op ends, people graduate. You gotta make your source of fun-generation self-sufficient. And sometimes it’s not enough to wait for fun times to fall into your hands, to wait for your friends to make plans for you or without you.

It’s important for each person to set goals for oneself - not just career goals, or school goals, but goals for things you actually enjoy. Try really hard to remem- ber the things you enjoyed before coming to engineering. Book a solo kayak trip on the Grand River. Hell, get your passport renewed and start putting to- gether a graduation trip (I’m going to New Zealand to fulfill my LOT-oriented childhood dreams, by the way. L> fellow travellers?) Book a piano room in the SLC and play covers of crappy pop songs by ear. Plan things beyond your midterm homework and study schedule. Plan things that really make you feel happy rather than just passing the time away. Plan things to look forwards to when you leave the University of Waterloo behind in the dust and you’re wondering where to go next. Plan things that make you feel hopeful that the future is more than death and taxes.

Including planning IRS pranks. It would be a shame if engineering students weren’t allowed to be joyful and methodi- cally-dreaded career goals, and play covers of crappy pop songs by ear. Plan things that really make you feel happy rather than just passing the time away. Plan things to look forwards to when you leave the University of Waterloo behind in the dust and you’re wondering where to go next. Plan things that make you feel hopeful that the future is more than death and taxes.

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On February 6, the Supreme Court of Canada voted in favour of allowing people with grievous and irremediable medical conditions to request the assistance of medical professionals in ending their lives. This decision will take effect in just 1 year leaving provinces and territories scrambling to come up with legislation narrowing this broad discretion. Although Palliative care can lessen the symptoms there remains many diseases which do not have cures. By choosing to end one’s life prior to reaching the extreme stages of the disease being suffered, patients aim to lessen the suffering of their loved ones. Physicians, on the other hand, spend much of their careers preserving life and the medical community has not universally embraced the idea of assisted suicide.

There is a great deal of grey area in allowing people with grievous and irremediable medical conditions to request the assistance of medical professionals in ending their lives. Ensuring that the patient is giving informed consent is perhaps one of the most important issues. A sick person may go through cycles of depression. When in a depressed state that person may ask for doctor assisted suicide while later realizing that their pain is bearable for a little more time with their family and friends. This second chance would be unrealized if suicide was allowed.

The group most benefitted by this Supreme Court ruling is people with degenerative conditions such as ALS, MS and Huntington’s disease. In many cases sufferers have a very defined way that their body begins to decline. First you might lose speech, then mobility, then your very knowledge of self. For the dying person the pain of their terminal illness is increased by watching their body’s functions disintegrate. This decision was not taken without account the complexitiy of the sub-glacial and pre-glacial geographic environment. The foundation investigations and associated site characterizations identified the continuous GLU (glacioclastite layer) in the area surrounding the breach. This BLU layer is recognized to be susceptible to undermined failure when subjected to the stresses associated with the embankment. The Panel also reviewed the roles and responsibilities of all involved and found no regulatory oversight and that all the regulatory staff were well qualified. The panel found that TFSC inspections would not have prevented the failure. The conclusion of the report is that the safety of any dam, water or tailings, relies on multiple levels of defense. At the time of design of the Mount Polley TFSC, the changes were not made to address this weakness in foundation which could have failed earlier due to overtopping of the embankment.

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This upcoming year will be incredibly important for the successful implementation of doctor assisted suicide. A great deal of debate and thought will have to be put into creating a law that will allow all people to die with dignity when their time has come.
Dr. Chandramouli Madhuranthakam is a well-known and well-respected professor from the Chemical Engineering department, loved by his students for his evident enthusiasm for his course material and passion for teaching. Completing his Bachelor and Master’s degrees in India, he soon moved to Canada to pursue his PhD degree and research career at the University of Waterloo.

This month, the Iron Warrior took some time to chat with this awesome professor. Here’s what he had to say:

Which courses are you teaching this semester?

This semester, I am teaching two courses in Chemical Engineering. One is Process Data Analysis, a 2A course, and the other is a 3B course called Heat and Mass Transfer.

Why did you choose to pursue a career in Chemical Engineering and become a professor?

After high school, I wanted to pursue Electronics Engineering, but I would have had to move out from my hometown to do that. My parents insisted that I stay in my hometown, so I attended Sri Venkateswara University. The options I had were chemical, mechanical and civil engineering. At that time, out of those three, chemical was an emerging field, so I thought I would be a promising career in that, and I ended up taking chemical engineering. I did a good job in my undergraduate, and after graduation, immediately there was an opening in the same department, as a junior faculty member. Most of the professors who taught me, they know me, and the professors who taught me, they know me, and then they offered me that position. So for one year, I was teaching undergraduates immediately after my graduation. I used to get very good applause when I used to teach, and I enjoyed it. Then, when I decided whether to continue this or not, my colleagues, who used to be my professors and advised me to pursue a research career, after which I could always come back and teach. I then completed my Masters at the Indian Institute of Science, which is a premier institute in India. There I got exposed to research experience and I enjoyed it. Then I quickly realized if I chose to pursue a career in academics, I could have the privilege of teaching and doing research. Further, if you want to settle in academics, you have to do a PhD, so that’s what drove me to do a PhD here in Waterloo.

What courses are you teaching this semester?

Why did you come to Canada to pursue your graduate studies?

I had as a group of friends here in Waterloo who did their PhD and told me about an industrial project which was an application of what I learned, and which I was interested in. So when I got the offer from the University of Waterloo, I accepted it.

What are your research interests?

My research focuses on designing micromachines and static mixers to make advanced materials. So what usually happens is that the properties of most materials depend on their structure, or morphology. You can actually control the structure when you make them in tiny reactors because you will have minimum diffusion limitations, and you can have different properties of the material. In my research, I design microreactors which are at a scale of 50 to 100 microns that can facilitate the polymer molecules to grow in one direction, uniformly and efficiently. My focus is also on using them for making value-added products such as composites and advanced materials in drug delivery systems. Within this research area, I also work on the feasibility studies, hydrodynamics of multiphase flows in static mixers and microreactors, control and optimization with respect to operating procedures. With my expertise in modeling and simulations, right now I mostly create simulations, but wherever possible I will verify it with experimental data when I have a lab. To explain you further, there could be many different structures or geometries, let’s say you want to design a specific structure for the microreactor, so how you actually do it is you make a 3D geometry of that structure, using AutoCAD. Then import this AutoCAD structure into a CFD software such as COMSOL, solve the multiphysics models which are nothing but heat, momentum and mass balances and postprocess the results. So that’s about my research in a nutshell.

What has been the most memorable experience so far in your career?

The most memorable event in my career was the offer I got from the University of Waterloo, not for a PhD, but the offer to be a faculty member. That was the most memorable event, to have the offer to teach and do scholarly work.

What do you like about being a lecturer?

I like to interact with the students, I love to explain things, especially when you see them feel happy when they understand something, and you see a glow on their face. I really like that.

Have your students taught you anything during your time as a lecturer?

It has taught me a lot. I am open to learn from anyone, and that’s what I tell students, that you should be ready to learn from anyone, because some things you might know better than me; it’s not always about the subject material. So you have to be open minded and open ended. I always learn a lot from students. For example, I might think that there is a certain way of explaining a concept would be the best, but from some student’s question, ask, or from the doubts that arise during the class, that will actually convince me that I should probably do it in a different way, a way that they want.

Do you have any advice for your students about how to be successful in their university career?

Overall, what I can say is that during this part of your life, you have a huge reservoir of energy, and you need to focus this for learning, gaining experience and acquiring knowledge. That should be your first priority, and it will help you down the road for the rest of your journey in life. Other than that, what I can suggest to students is the importance of planning and perseverance. Once you set your objective I think that you need to do it in a different way, a way that they want. Otherwise, if you do it halfheartedly it will actually leave you with bitterness everywhere. You will get nothing out of it.

Another important thing I want to tell you from my experience, is that good and bad, they never come separately; they always come together. It’s up to you to choose and identify what is good, and the results depend on your decision. Even when you work in a co-op or in an industry or anywhere, the good and bad be they will be together everywhere. These are some practical things that life will teach you, no uni-
If you were on social media on January 28, you probably would’ve noticed it was Bell Let’s Talk day. For each phone call or text on the Bell network, as well as each share and tweet with #BellLetsTalk, Bell promised to donate 5 cents to mental health initiatives in Canada. This year, they raised a total of $6,107,538.60. The donations are all part of a campaign by Bell, started in 2011. Along with Let’s Talk day, the campaign includes donating to current mental health organizations, investing in research, incorporating a standard for psychological health in the workplace for their own employees, and a standard for psychological health in the workplace for their own employees, and providing grants to new mental health initiatives. Overall, the campaign aims to reduce the stigma associated with mental health issues, allowing people to actually learn about mental health. Even our Prime Minister tweeted on Bell Let’s Talk day, in support of mental health; though as a blogger on Huffington post pointed out, he has done little to actually improve the issue in his time as prime minister, even when he had the opportunity. Political issues aside, it is clear that the campaign has been able to encourage other people to tweet with the hashtag as much as possible. In turn, tweets describing school lunch menus and complaining about a lack of sleep were slapped with #BellLetsTalk before sent into void of the internet, meaning that any sort of search of the hashtag itself yielded more mundane tweets about lazy cats and cold coffee than actual discussion about the issue surrounding public views on mental illness.

This should sound quite familiar to another viral attempt at fundraising that took the world by storm—the Ice Bucket Challenge of last year, aimed to promote awareness and raise funds for the research of Lou Gehrig’s disease (amyotrophic lateral sclerosis, also known as ALS). While the success of the campaign’s fund raising cannot be denied by the nearly $30 million raised, once again the less tangible goals fell quickly into neglect as the challenge became more of a publicity stunt for celebrities to participate in, allowing to easily boost their image as being ‘involved’ and ‘generous’. Social media isn’t the only offender in this regard—much controversy has surrounded the advertising associated with breast cancer awareness, with slogans such as ‘save the boobies!’ or ‘save second base!’ plastered onto t-shirts and plastic bracelets. Aside from the obvious reality that mastectomies are not uncommon in order to remove malignant tumours, the campaign also strikes one chord in the fact that it is focused on saving a body part more than the human itself. If the promotion was aimed to do anything aside from profiting on the merchandise (say, bringing awareness into the reality of living with breast cancer), it certainly didn’t do a good job of it.

So what’s the deal? Why does it seem that every attempt of marketing a worthy cause ends up more force than farce? If we had to blame anyone, it’s because of the point towards the great shift that we’ve seen in successful advertising in the past few years. Advertisements gone viral spread like a disease through social media, but to the point that the product it is advertising becomes drowned by whatever joke or gimmick afforded such attention (the Old Spice commercials featuring half-naked men with diamonds on horses is a prime example of this), one’s own consumption of media blinds us from the message intended by the creators, choosing instead to focus on the aspects we find amusing. It seems as though advertisers are beginning to understand this. Advertisements are quickly becoming more and more eschewed from the product or service that they are attempting to sell, resorting to bizarre skits and quirky catch-phrases in a desperate attempt to catch even a brief hold of the internet’s small attention span. With some great luck, they might succeed, get their day or week in the spotlight, fade back into obscurity, and return to the drawing board to try to win the lottery a second time. Money is made, but the longterm impact is minimal at best.

Is there a definitive remedy for this issue of campaigns losing their message in their own virulence? Of course there are steps that can be made in the right direction—for example, if there is little mess- age to be delivered in the first place, such as the ‘Save the Boobies!’ style of promotion, there is no hope in the audience ever taking it the right way. However, though, it largely falls into our own hands to make sure that we don’t strip away the morals for our own short-lived amusement. Next time there is a surge of interest in a particular issue or cause, try to participate in legitimate conversation about it. Educate yourself and others about the matter, especially if it interests you. Most importantly, though, try to do something that will elicit genuine change. And whenever you do, take resources, or even just try to inform your peers on what they might not know. Maybe it’s not much, but if no lasting improve- ments are made while a campaign has the limelight, it can hardly be called a campaign at all.

That said, be sure to look before you leap aboard the bandwagon. #kony2012
Lack of Female Profs Stems From Far Greater Issue

Most of us can count the number of female professors we’ve had on the fingers of one hand. This seems to be well known and even accepted; you probably don’t need another long, propaganda-like article promoting women’s participation in science and engineering. For example, thought it would be interesting to gather and share information about passport holders in Canada, sharing a video of a terrorist attack online could constitute a criminal offense, anyone deemed to be a threat to national security will be prohibited from boarding a plane; the problem at the bottom. Fewer women are choosing these fields and therefore inevitably, there is limited representation at higher ranks. So again, why? Because of deeply rooted societal stereotypes and biases. Now you might think, this is the 21st century, how are issues from the dark ages still around? Well, they are. These are so ingrained in our culture that often we are unconsciously unaware that they could be affecting our judgment.

But perhaps the most troubling aspects of Bill C-51 is that it defines “threat to national security” that can be made by the way I see it, the questions isn’t why should any sort of parliamentary oversight so there is no reason to believe why any attempt to ensure that these powers are not abused. CSIS, under the name of Public Safety Canada (the government department which will undoubtedly be the source of future economic growth worldwide. The same way little girls should not be forced into pink dresses complete with tatas and boys should not have to wear Buzz Lightyear or Spider Man gear (unless by choice), we should not attempt to influence academic interests, choices, and culture that often we are unconsciously unaware that they could be affecting our judgment.

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But if you aren’t one of those unfortunate students who are exploring the results. So now we know we have a problem and how are issues from the dark ages still around? Well, they are. These are so ingrained in our culture that often we are unconsciously unaware that they could be affecting our judgment.

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Point Vs. Counterpoint

Should formula sheets, if required, be provided by the professor?

ELIZABETH SALSBURG
2N TANTOENGINEERING

Midterms are upon us. Material needs to be quickly reviewed, understood, and in some cases, *gasp* memorized. Symbols and equations swarm our fuzzy brains as the stress of hell week sets in.

It’s the class before the midterm. A classmate inevitably puts up their hand and asks, “Will this formula be given on the exam?” Followed by, “Which formul
as will be given on the exam?”

Collective anxiety builds in those of us who don’t have photographic memory or prefer not to memorize. The professor responds with something to the effect of one of the following: “The formula sheet provided will have all of the formulas that you need.” Or “The formula sheet provided will have most of the formulas you need, but this particular formula is fundamental and should be in your bones,” or, “That’s up to you—you’re responsible for your own formula sheet. One 8.5 by 11 inch sheet of paper, single sided.”

Disclaimers: the best way to ensure you fit back and (relax!), all that you need will be given to you—now you just need to know what it is. Or you can create make-up formulas. Whether you are making up formulas or learn- ing out of room as you squeeze in every possible equation and example; to the point where there is so much overwhelmin- ing detail that the writing is so very teeny weeney that you can barely read it.

These arguments may seem somewhat small at first glance, however they do translate into what can be a significant difference.

It is fair if everyone is provided with the same formulas. This avoids the scenario in which more than half the class forgets to put the most ridiculously obscure, random, seemingly useless formula that you learned in the course, to the point where the class on what was supposed to have been a snow day and nobody made it except the prof and possibly some nargals that were living in that lecture hall anyway. Furthermore, it is frankly silly for perfectly intel- ligent people (with no photographic mem- ory) to be unable to complete a question simply because they didn’t include that particular formula on their formula sheet.

Tell me, how helpful are the points on the exam: To assess the students’ understanding of the course material. Forgetting to include a formula on the formula sheet, thereby making it impossible to answer the question, is in absolutely now way indicative of un- derstanding.

This is particularly important as many of the questions we see on exams are more complex and yes, as painful as it is to bor- row this expression, “multi-step.” Chances are that you will need one formula to find a particular quantity and suddenly realize, “Crap, they didn’t give me this other thing that I now need to get what they’re asking for.” You’re the idea. And then you sud- denly realize, “Crap, I don’t have that for- mula!” so you try to B.S. up an explanation saying you would do that, or the other thing. Whatever. The point is, you need to know the material when done properly. Reviewing the material systematically will help you formulate a good formula sheet (pam intended). That being said, a similar process should be followed regardless of the “format” of the formula sheet. If you need the motivation of making your own formula sheet, read the material in metic- ular detail, then you are missing out on learning the material properly in courses where this is not an option.

It is therefore evident that professor-provided formula sheets are better than making your own. When everyone gets the same formula sheet, there is no chance of students being unable to answer a question for the sole reason of not having a particu- lar formula. Better still, it forces students to focus on understanding the concepts rather than worry about which specific formulas they will need. Finally, it encourages the application of a strong studying approach across all courses.

So what does this all mean? The next time your professor asks if you’d like to make your own formula sheet, think twice—and let them do the dirty work.

SHERWIN KWAN
4B MECHANICAL

Engineering is a subject which stands mid- way between scientific and mathematical theory on one side, and directly-applicable techniques (such as taught in trades schools) on the other. So usually, in an engineering course, students will be expected to have some theoretical knowledge (say, differential equations), but the focus is on being able to apply such knowledge correctly to problems which may be commonly encountered (e.g. heat conduction). Therefore, many profes- sors will allow students to have a reference of some type during an exam — what is being tested is not the ability of a student to recall an equation or basic principle in the absence of any resources, but the ability of a student to solve a problem given the appropriate re- sources.

Assuming that allowing an entire text- book as a reference is not desired, professors choose one of two models: a) a prof-created reference sheet, which contains a number of equations, generally without explanation, supplied to every student at an exam, or b) every student to bring one reference sheet of their own making. It is my belief that a student-made reference sheet is more favourable to the student trying to get a good mark. A professor-created reference sheet, I will not deny, has several benefits. First of all, you just have to show up at the exam and voilà! There it is. You need not waste time trying to craft a reference sheet, and can focus exclu- sively on practice problems if you wish. Second, unless you have a sadistic professor, you will have all the formulas you need for the exam. Third, there will not be any errors, and if there does happen to be an error, then one of the proctors at the exam will normally write a correction on the chalkboard.

However, I believe these are outweighed by the benefits of being able to make and bring your own reference sheet. Every stu- dent learns differently. Perhaps you’re strong at optics, but a dynamics problem will leave you scratching your head. Meanwhile, your friend Jane is great at anything with moving parts and forces, but if you give her an optics problem she’ll just stare at the exam paper as though it were the mirror described in the problem. If you can make your own refer- ence sheet, you get to tailor it to your own strengths and weaknesses, using more space on the equations and concepts from the topics you need help on.

Also, prof-supplied reference sheets often don’t explain what all the funky symbols mean in their formulas. Many a student has duly written the appropriate formula down, only to blow the question because the “d” they thought was a diameter of an orifice was actually the distance between two orifices. And who’s not intimidated by an equation by eight symbols, five of them Greek? With a reference sheet you make yourself, you are entitled to write, not only the equations, but also explanations for any confusing symbols to assuage your worries.

To the objection that making a reference sheet is a waste of time, I would say that it is actually a great study method. During the process of making a reference sheet, you need to look through all the topics being cov- ered and extract the most important informa- tion. By doing so, you will become at least passingly familiar with all the content you need to know. Perhaps you’ll end up writing down too much — equations and concepts you don’t end up having to use. But the same is true for a prof-supplied reference sheet: they often have extraneous equations scattered be- tween the ones you actually have to use. An- ecdotally, I’ve even made “reference sheets” for courses which didn’t allow one, just to familiarize myself with all the important in- formation for the course.

Now some students might not have much confidence in their abilities to create a refer- ence sheet. Not to worry, though. Your entire class is making reference sheets, and you can help each other out with less familiar topics. Unlike on a real exam, it’s not an offence to get ideas from other people and use them on your own reference sheet.

Now prof-supplied reference sheets can be very useful, and I don’t mean to discour- age anyone currently studying for a midterm which uses one. And they might even be better if you have a large number of exams created by a professor who has never taught that type of exam. Therefore, if you have extraneous equations scattered between the topics you actually have to use, you can get a good mark. A professor-created reference sheet, I will not deny, has several benefits. First of all, you just have to show up at the exam and voilà! There it is. You need not waste time trying to craft a reference sheet, and can focus exclu- sively on practice problems if you wish. Second, unless you have a sadistic professor, you will have all the formulas you need for the exam. Third, there will not be any errors, and if there does happen to be an error, then one of the proctors at the exam will normally write a correction on the chalkboard. However, I believe these are outweighed by the benefits of being able to make and bring your own reference sheet. Every stu- dent learns differently. Perhaps you’re strong at optics, but a dynamics problem will leave you scratching your head. Meanwhile, your friend Jane is great at anything with moving parts and forces, but if you give her an optics problem she’ll just stare at the exam paper as though it were the mirror described in the problem. If you can make your own refer- ence sheet, you get to tailor it to your own
Hello again Waterloo Engineering. These past two weeks I’ve been trying to catch up again with issues surrounding the Infotextile scheduling software. A highly polarized topic, this software may impact the way that some engineering departments schedule their cohort times and locations. At this time, I am looking for any students who are interested in becoming more involved in the discussion surrounding how this new software compares to the old system and what issues may present themselves with a cohort-based program to send me their name and contact info at president@engsoc.uwaterloo.ca. Although this might seem like too much work to get to a point where I can reach out to you to become involved in this cause, I expect to begin regularly sending emails to interested students during reading week and through to the end of the term, so please help to advertise this opportunity to any students who may be interested.

In other news, my successor has been ratified! Hannah Gauthreaux is a 2017 Management Engineering Student who has some big plans for the next 16 months as the incoming Engineering Society President. If you haven’t had a chance to say hi to her during her campaign, you should look out for her on campus between now and the end of the term to chat about what you want to see from EngSoc over the next year or so. I sure she’d be happy to hear from you!

Also, speaking of new leadership, make sure to briefly mention the Engineering 7 referendum that is happening this term as well. On A-Society in Fall 2014, the students voted in favour of the establishment of an optional $25 termly donation to go towards a $1M student contribution to the building of E7, beginning once the building is open. This same referendum is being run on E7-society this term, and if the students once again vote in favour, the referendum will be passed. Currently, we are looking for nominations for the Yes and No committees, which are tasked with promoting their respective stance to the students. For more information or to get involved, please contact the CPH@engsoc.uwaterloo.ca. Also, keep a eye out for the campaign and polling periods after the break.

After breakfast on Sunday, remaining president and those of you who have Iron Rings will likely have their Iron Rings; if you’d like to get your little while, these include Romantic Pictures with the Tool, First-Year Mentorship, and those interested in learning more about the First-Year Integration Conference or other EngSoc events, please come out to Puppies in POETS on Monday 16th.

Hello friends, I hope bell week is treating everyone that has it alright this week! There are a few cool things coming up in the next little while, these include Romantic Pictures with the Tool, READING WEEK, Puppies in POETS, and TalEng.

Congratulations to all the 4th years who now have their Iron Rings; if you’d like to get your picture taken with The Tool in a roman- tic setting, have I got an event for you! Come out to POETS on Thursday Feb 12th for this, and those of you who have Iron Rings will be able to take pictures with our favourite mini-tool also made an appearance at the conference, being worn by two first-year delegates. I would like to add that during my term as VP-External I have brought the mini-tool to two conferences and have not lost it. All-in-all, upon returning to Waterloo I feel we have nine first-year stu- dents who have acquired new skills they can contribute to the Engineering Society.

The Ontario Engineering Competition took place from February 6 to 8, and was hosted by Ryerson University in Toronto. In total, WaterlooEngineering Society “A” and “B” combined sent forty-five competitors to seven different competitions. The competi- tions were: Junior Design, Senior Design, Innovative Design, Consulting, Technical Speaking, Debate, and Programming. Having competed at the Ontario Engineering Competition before I can personally say that it is an amazing experience. Every competition offers something challenging that truly tests and engineer’s skill set. It, like the First-Year Integration Conference, is also a fantastic opportunity to meet students from other Eng- ineering Schools in Ontario. Waterloo sent several professors as judges for the competi- tion. On another note, Waterloo will be host- ing the Ontario Engineering Competition next year, in 2016.

Working hard, February has been a fantas- tic month for conferences and competitions where Waterloo can showcase its talent pro- fessionals. If you are interested in learning more about the First-Year Integration Conference or the Ontario Engineering Competition, please email me at vpexternal@engsoc.uwaterloo.ca.
Hello Engineering Students!

I hope that everyone has had a great term so far! I know that there will be many fun events after reading week to look forward to, so keep getting excited about all things EngSoc!

The past two weeks have been particularly interesting as far as finances for EngSoc go. The EngSoc budget was approved at the 2nd meeting of the term, and some great discussion took place as to how EngSoc operates financially, every term you are charged an EngSoc fee as a part of your tuition (this term was $15.45) and this money is used to fund different events throughout the term, as well as cover operating expenses for the society (such as EngSoc office front desk staff, C&D expenses, Sponsorship, and ECIF).

Event directors then submit budget proposals for the events they want to run.

This term was an interesting case where EngSoc had more money to allocate than was requested by directors, which is a problem since we are a non-profit organization (we can’t have a positive number on our budget). I had originally allocated this surplus funds to existing directorships to allow for larger scale events since both Sponsorship and ECIF are set to certain amounts based on our Policy Manual. However, at the 2nd meeting when we discussed the budget a member motion was made to ignore the policy manual sponsorship cap of $6500 and reallocate all excess fees to Sponsorship and C&D expenses, Sponsorship, and ECIF.

However Monday was scheduled to be coverall day, and all the fourth years on this great achievement. Let the struggle has finally paid off. In the spirit of all the iron ring celebrations I would like to shed light on what the ring symbolizes and where it all began.

The Iron Ring is made from either wrought iron or stainless steel. Most Canadian universities only offer stainless steel rings because iron is not the most suitable material to be worn on the finger blackish and slowly deteriorate, making the ring loose. This ring is worn on the pinky finger of your working hand.

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Let’s Talk Ring

The rings are given at the ceremony known as The Ritual of the Calling of an Engineer. This is a private ritual written by an English poet Rudyard Kipling. The ceremonies are held at individual universities each assigned one of the twenty-six wedges of the Iron Ring.

The Iron Ring is made from either wrought iron or stainless steel. Most Canadian universities only offer stainless steel rings because iron is not the most suitable material to be worn on the finger blackish and slowly deteriorate, making the ring loose. This ring is worn on the pinky finger of your working hand.

Congratulations again to all the fourth years on this great achievement. Let the ring symbolize the pride which engineers have while reminding us of our humility towards the profession.

If you have and questions feel free to contact me via email on vpeducation.b@engsoc.uwaterloo.ca.
Graphene
Cheaper, better, faster, stronger

BRYAN MAILLOUX
18 MECHATRONICS

Regardless of the engineering discipline you’re in, you’ve probably heard of the incredibly versatile material known as graphene. Made of a sheet of carbon atoms only one atom thick, it just happens to be the best electrical and heat conductor discovered, as well as the strongest known material. The unique properties of the material would open up a whole range of engineering applications, including carbon nanotubes for supercapacitors, and perhaps even foldable electronic devices. That is, if it could produce what it couldn’t produce it.

For a long time, the problem in creating graphene was isolating the carbon sheets that compose the material. In 2004, researchers Andre Geim and Kostya Novoselov from the University of Manchester stumbled upon a very low-tech method to obtain graphene: they noticed that they were able to remove graphene sheets from a carbon on a chunk of readily-available graphite (the stuff in pencil leads) using a piece of tape. Repeating the process several times, the researchers found a layer of carbon atoms only one layer thick: graphene. The discovery earned the researchers the Nobel Prize in Physics. Despite not needing any sort of special equipment to create the material, however, actually implementing it in industry turned out to be quite difficult, as sheets of graphene of a size suitable for practical application were far more difficult to produce.

A new method for creating graphene, however, could reduce the cost of the material thousandfold. Shou-En Zhu, a researcher at the Delft University of Technology in the Netherlands, has devised a deposition process involving a mix of gases, including methane, circulating over a copper sheet heated to a thousand degrees Celsius. The copper strips the carbon atoms from the methane molecules, leaving hydrogen gas and a thin sheet of carbon on the copper plate. Zhu’s method could be the key to bringing graphene out of the lab and into industry.

While graphene does indeed seem to be a wonder material, some say that its properties are greatly overstated and the publicity surrounding it is excessive. One of the most promising applications of graphene in electronics, its potential use in super-fast logic chips, has already been shot down: the fact that graphene comes in a continuous sheet of atoms makes it useless as a semiconductor, and thus it cannot be used as a transistor. Inconsistently, researchers are already observing the properties of graphene-related materials, such as silicon and phosphorus (single sheets of silicon or phosphorus can be formed with graphene) as potential semiconductor alternatives. These materials, however, face their own problems, notably the fact that they first need to be grown, and thus are not a ready replacement for silicon.

Perhaps, with some more technological advances, these graphene-like materials will become the new “wonder materials” of the near future.
Cofounders
EyeCheck

In this column, I interview co-founders of recently formed start-ups that have come out of the University of Waterloo. With the prevalence of programs such as Velocity Science, Garage, and Foundry, as well as other organizations in KW such as Communitech and the Accelerator Centre, the opportunities available for entrepreneurs to implement their ideas are boundless. In this issue I interview Ashutosh Syal, who started EyeCheck along with co-founder Dassal Desai in 2014. EyeCheck develops cheap and portable solutions for the diagnosis of vision impairments, to be implemented in developing countries.

Ashutosh Syal (l.a.) Ashu meets me at the SLC, and we decide to conduct the interview on the main floor in M3, as this seems to be the quietest spot in the vicinity. Ashu informs me that Dassal is unable to make it since he is currently in India carrying out field tests in SLC, and we decide to conduct the interview.

Through our conversation, I recognize the enthusiasm that Ashu maintains when talking about his company and the motivation behind their technology, as well as his sincerity when it comes to achieving EyeCheck’s goal of fast and inexpensive vision impairment diagnosis.

EyeCheck started out as an idea for a Fourth Year Design Project in 2013, when Ashu and Dassal were in their third year of Systems Design Engineering. Through collaborations with the School of Optometry, the team was able to design a proof of concept system that could detect patients in reflected light corresponding to visual defects in artificial eyes.

The push to form a start-up came on the day of their design symposium. Ashu elaborates, “Mike Kirkup [Director at Velocity] came by and asked us if we had thought of applying to Velocity. Dassal and I hadn’t at the time, but decided to look into it. We applied, and the rest is history. Since then we’ve expanded to include Communitech and GreenHouse as our mentors, and things have started to move much more quickly.”

The motivation to build an affordable system to detect vision problems is inspiring: “While researching for our project, we were seeing numbers like a quarter of children not seeing numbers like a quarter of children not seeing. While researching for our project, we were seeing numbers like a quarter of children not seeing. While researching for our project, we were seeing numbers like a quarter of children not seeing. While researching for our project, we were seeing numbers like a quarter of children not seeing. While researching for our project, we were seeing numbers like a quarter of children not seeing. While researching for our project, we were seeing numbers like a quarter of children not seeing. While researching for our project, we were seeing numbers like a quarter of children not seeing. While researching for our project, we were seeing numbers like a quarter of children not seeing. While researching for our project, we were seeing numbers like a quarter of children not seeing. While researching for our project, we were seeing numbers like a quarter of children not seeing. While researching for our project, we were seeing numbers like a quarter of children not seeing. While researching for our project, we were seeing numbers like a quarter of children not seeing.

Continued on COFOUNDERS on page 13

Unboiling an Egg

CAITLIN MCLAREN 3A CHEMICAL

Everybody hears it as an example in thermodynamics: “You can’t unboil an egg. You can’t unboil an egg.”

Now, that example has been proven wrong.

Eggs are full of proteins, which are complex molecules that need to be folded in a particular way in order to work. Heat, changes in pH, and other stresses can change the shape of a protein, rendering it unable to perform its biological task. This is called “denaturing” the protein. In the case of eggs, it makes them delicious. In the case of proteins used in cancer research, it makes them useless.

The new antibiotic on the block

Teixobactin

The term “super-bug”, now commonly used to describe antibiotic-resistant bacteria, did not exist in 1962. The team at the University of California, Irvine had this problem. How did they solve it? It will be a very long time (if ever) before we are able to purge biases and stereotypes from ourselves and our work. This is one of the reasons that the SFF’s iChip is a game-changer.

Continued from IMPACTS on page 6

Lack of Female Profs

Continued from LACK on page 6

by their family and by their peers, and (insofar as possible) not be swayed by social and societal dynamics at play in their field of choice.

A lot can happen in 53 years. Man has stood on the moon, the cold war ended and more wars began, the internet came into existence and almost immediately began serving as a platform for animal videos. Medical techniques and antibiotics have become increasingly strong, but so have the bacterial infections that they fight. The term “bug to bug,” now commonly used to describe an antibiotic-resistant bacterial infection, did not exist in 1962; they were still focusing on normal bugs. When isolating new classes of antibiotics researchers typically tuned to the soil to find bacteria which produce antimicrobial compounds that are non-toxic to humans. This method produced many antibiotics in the early years of research – twenty classes before 1960, but only two since then. The deliberate holding back of various strains of antibiotics has allowed medical professionals to remain one step ahead, but the stock is quickly running out. We’re fighting a losing battle.

Teixobactin is a new antibiotic observed by a team of researchers at Northeastern University in Boston led by Kim Lewis. Teixobactin is able to kill bacteria by preventing them from building cell membranes. It has been successfully tested on antibiotic-resistant infections in mice, and when researchers tried over several weeks to evolve strains of bacteria that could resist teixobactin, they were unable to. Teixobactin seems to be immune to resistance. The drug works by blocking bacterial cells access to Lipid II, which is needed to create cell membranes and walls, and Lipid III, which preserves existing walls and membranes. This two-prong attack is likely why teixobactin is so hard to adapt to. An existing antibiotic, vancomycin, also works by withholding Lipid II. Vancomycin was used for around 30 years before bacteria were able to evolve and resist it. Lewis hopes that it will take even longer for bacteria to adapt to teixobactin.

Teixobactin was discovered using a different method than most previous antibiotics. The team used a device known as the iChip to discover the drug, and are very optimistic about the potential of the tool. Bacteria are constantly fighting each other, providing a tremendous source of potential antibiotics, but 99 percent of these bacteria won’t grow in lab conditions. The iChip can bring the natural environment of the bacteria to lab. Really it is just a small board that can separate cultures of bacteria, and keep them in their natural environment at the same time. By separating the bacteria cultures which are already growing, each can be studied independently. This allows researchers access to things they’ve never seen before. The discovery of teixobactin is momentous on its own, but the iChip and its potential may be the most important part of this discovery. Teach a person to fish and you’ll feed them for life.

Terror Legislation

Continued from IMPACTS on page 6

they do and why they do it, etc.

Some might see financial need, aspiration, or similar incentives enough for accepting any offer. It is critical to realize the distinction between being a good “engineer” and an average technician, just getting the job done. A good engineer does not sell their expertise in return for monetary compensation only. Good engineers approach life, including their job, as an engineering problem, applying their critical thinking and engineering judgment.

In the end, we do not wish to preach about whom to work for (or not), because, if nothing else, a good engineer is never going to adapt. But we would like to remind everybody of the distinction between good and average engineers, and those simple questions that make the difference while considering a job.

Watch that movie: Good Will Hunting.

Donovan Maudsley

2A MECHANICAL

A lot can happen in 53 years. Man has stood on the moon, the cold war ended and more wars began, the internet came into existence and already most immediately began serving as a platform for animal videos. Medical techniques and antibiotics have become increasingly strong, but so have the bacterial infections that they fight. The term “bug to bug,” now commonly used to describe an antibiotic resistant bacterial infection, did not exist in 1962; they were still focusing on normal bugs. When isolating new classes of antibiotics researchers typically tuned to the soil to find bacteria which produce antimicrobial compounds that are non-toxic to humans. This method produced many antibiotics in the early years of research – twenty classes before 1960, but only two since then. The deliberate holding back of various strains of antibiotics has allowed medical professionals to remain one step ahead, but the stock is quickly running out. We’re fighting a losing battle.

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Geek Culture: The war of the Renaissance fathers

Hi, folks, and welcome to Geek culture. It is a weekly collection of reviews for geek needs from comic books, superhero movies, TV shows and much more. If you have any content suggestions, submit an essay on the subject and we will get back to you. I am Chris Columbus, author of the first book in the series. Because of the extensive portrayal of the world of S.H.I.E.L.D. in the comic, the movie could have compensated for any weaknesses in the movie. Columbus benefitted from this and the subsequent books in the series because it is tight and capable and infectious, and will leave you smiling.

Harry Potter and the Chamber of Secrets (2002)

I enjoyed Chris Columbus’ second stab at the series more than the first but this was caused by improvement of the source material. Chamber of Secrets is one of the best books in the series because it is tight and you hit with a mystery from the get-go. Columbus benefited from this and an obvious increase in his special effects budget, so he can’t really stand up to them, but he does his best.

Harry Potter and the Goblet of Fire (2005)

The Goblet of Fire, as a book, is enjoyably structured in that the Trisward Tournament lends a sense of tension to the proceedings, even if it’s just a high school competition. However there’s way too much stuff happening in the movie and Harry’s adolescent dating woes seem trivial after the excitement of the Iron Ring Ceremony, the Chamber of secrets is reached, and year 3’s arch-enemy godfather popping up in a shack.

The movie could have compensated for this weakness with a more brooding, more shadows, and more hints that something is wrong in the neighbourhood but instead favours a raving Michael Gambon as Dumbledore and a dance between Rupert Grint and the venerable Maggie Smith. You can’t have a farcical corn com through the first two thirds of the movie and then a showdown with the restricted Dark Lord in the last third. Not impressed.

Harry Potter and the Order of the Phoenix (2007)

At this point I know that Rowling’s editors just threw up their hands and let her write whatever the hell she damn pleased. So David Yates’ editorial team tackled the Herculean task, wrangling the series’ longest book into the shortest movie by focussing on Harry Potter’s struggle against the forces of S.H.I.E.L.D. from danger. Great historical minds, such as Newton acciden-
tually leaves you with a lot more

Love You Like a Love Song

Each line could double as a wedding vow, a statement of absolute trust: “Harry these lines will always protect you. And this mind will never neglect you. The joy of “Adorn” is palpable and infectious, and will leave you smiling for a long time. Disclosure ft. Sam Smith – Latch

“Latch” has to be a contender for hardest song ever, right? Sam Smith does a wonderful job as the performer in the song. It’s seductive and absolutely massive, blow-off-the-raters choruses while discussing the wild-eyed feeling at the start of something perfect you never want to leave their side. Musically, Disclosure streamlines their modern house sound to craft a timeless pop song. Plus, “Latch” is a front-room chorus you know you can’t sing but do anyway, which is icing on the cake of this perfect song

Rhye – Open

Rhye is a duo made up of two men, one instrumentalist and one vocalist. But upon historical “Opening,” results disguised yes, didn’t believe that was the case. “Open” is awash in lovely androgyny, with singer Mi-

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Take Five: Humus!

The Iron Warrior

WEDNESDAY, FEBRUARY 11, 2015

NANCY HUI
4B CIVIL

ALEX TOTH
4B CHEMICAL

This week, instead of writing about one specific album, I decided to combine three things I really enjoy: music, lists, and cheesy romantic gestures. Since Valentine’s Day is approaching and my girlfriend suggested I write an article in honour of it, I thought it would be a good time to discuss the love song. The theme of love, in some form, is probably the most common theme in music now and forever. However, not all songs containing the theme of love can be considered love songs. There are songs that deal with the absence of love, searching for love, and falling out of love; but none of these songs are love songs in the purest sense. A true love song is one that is able to project a feeling of emotional attachment onto the listener; a sense of happiness that can only come from being fully in love. It’s a song that makes you feel good, and leaves a warm glow even after it’s finished. So without further preamble, I’ve chosen five songs, all released in the last 5 years, which I believe best capture that feeling.

Beyoncé – “1+1”

In concert, Beyoncé performs this song alone on stage, in a sparkly blue jumpsuit. Halfway through the song, a cable lifts her off the ground and carries her to a separate stage, where she finishes the song lying on top of a round platform. If you’re curious about what it’s like to be described in one word, “grandsciss” seems fitting. However, the performance pales in comparison to the album song. Freely rearranged to Jay-Z and using that emotional mile-

album of the week

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continued on page 13

THE IRON WARRIOR
Hi Warriors, it’s that time of the term where there are a lot of project deadlines to meet, job interviews to ace, it feels like the number of deliverables per class has doubled, and hell week is creeping up very slowly. The days feel longer and the nights even shorter. With all this work in a short amount of time to deliver, it is important not to let the stress get the better of you.

Dealing with all this heat – stress – is just as important as accomplishing our set out work because stress can affect how well you can perform and focus on achieving a goal. So, here it is four tips on how to work because stress determines how well you can perform a particular task, gives you a way to check your progress during that time and your efficiency at dealing with the task. In a way, it’s like checking the “runtime” of your own processor (mind) and algorithm (strategy) of dealing with a problem. As a result you can adopt various strategies to help you improve your runtime (rate of work) when working towards a goal. For example, allocating a certain amount of time on performing a particular task, gives you a way to check your progress during that time and your efficiency at dealing with the task. In a way, it’s like checking the “runtime” of your own processor (mind) and algorithm (strategy) of dealing with a problem. As a result you can adopt various strategies to help you improve your runtime (rate of work) when working towards a goal.

Second, engage in an extra-curricular activity to take your mind off school work. Playing sports or going to gym is amazing way to de-stress as well as help develop both the mental and physical stamina needed to stay focused. Apart from sports, there are a lot of extracurricular activities you can engage in such as joining a de-sing team, learning a new programming language, reading, event planning and many more. Extracurricular help you develop essential skills you need to succeed in your career. By challenging yourself, and explore different possibilities apart from academic work. A final bonus of engaging in an extracurricular activity is that it allows you to stand out during job interviews and can even land you an interview. It’s like killing two birds with one stone.

Third, one of my favourite ways, is meditation. Meditation is an amazing way dealing with anxiety and stress. It could be as simple as taking a few minutes after class to relax or coming for 30 minute a meditation session. The purpose of meditation is to allow you to aware yourself from thinking and allowing you to take control of it. One of my favourite quotes from the television show Legend of Korra that I feel describes the essence of meditation is, “Let go of your earthly tether. Enter the void. Empty, and become wind.” This simple quote explains the whole purpose of meditation. My interpretation of this saying is as follows. Let go of your earthly tether is simply removing all your worries and anxiety from your mind. Entering the void and being empty can be viewed as being in a state of calmness and being at peace with yourself. Finally, becoming wind is achieving the goal you set out to do and being the person you want to be. Off course don’t become an anarchist or without meditating. That’s a little too much for you LoK fans.

Finally, understanding your strengths and weaknesses is essential to getting around any stressful situation and in doing so you can structure ways of handling your problems. For example, I am a very slow writer but fast reader. But why stories? Well the fact is, facts are not always true. Make sure to verify the facts. As an example, if you are looking for information on performing a particular task, gives you a way to check your progress during that time and your efficiency at dealing with the task. In a way, it’s like checking the “runtime” of your own processor (mind) and algorithm (strategy) of dealing with a problem. As a result you can adopt various strategies to help you improve your runtime (rate of work) when working towards a goal. For example, allocating a certain amount of time on performing a particular task, gives you a way to check your progress during that time and your efficiency at dealing with the task. In a way, it’s like checking the “runtime” of your own processor (mind) and algorithm (strategy) of dealing with a problem. As a result you can adopt various strategies to help you improve your runtime (rate of work) when working towards a goal.

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The Irish had a thing for (men’s) nip-plugs.

Babies breastfeeding from their mothers is cool. Everyone’s done it. However, the ancient Celts in Ireland decided to take things a step further. They would tie a dude’s nipples to the top of a pyramid. It’s pretty common knowledge wars and human sacrifices and all. Of course, a fierce bunch anyway, what with their constant desire to become king (probably by overthrowing the current one). Of course, this was mainly good old-fashioned sexism. They also disproved of women wearing pants, because of course two social equals couldn’t have sex! The scandal!

Of course, since a young teenager wasn’t exactly considered a full citizen yet, he was considered inferior. Of course, it was considered sacred.

The Aztecs sacrificed people. I may have mentioned that before. You know, the whole undrafted rookie, and he has just won Superbowl XLIX: Gridiron Glory!

The Aztecs wanted to become king (probably by overthrowing the current one). Of course, this was mainly good old-fashioned sexism. They also disproved of women wearing pants, because of course two social equals couldn’t have sex! The scandal!

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THE IRON WARRIOR
WEDNESDAY, FEBRUARY 11, 2015

DISTRACTIONS
by David Rousso, 1B Nanotechnology

THE SPONTANEOUS LOW TEMPERATURE ORGANIC SUBLIMATION PHENOMENON
SPONTANEOUS LOW TEMPERATURE ORGANIC SUBLIMATION IS A WELL-KNOWN AND WIDELY PRESENT PHENOMENON WHERE TASTY FOOD AND WHEN LEFT OUT UNTENDED, CAN SPONTANEOUSLY SUBLIMATE. THIS UNUSUAL PHENOMENON HAS YET TO BE STUDIED CAREFULLY AS, FOR SOME REASON DESPITE THE TEDIOUS RESEARCH CONDUCTED IN OUR LAB OVER THE PAST 2 YEARS, THE COOKIES USED FOR THE EXPERIMENT EITHER SEEMED TO REFUSE TO SPONTANEOUSLY SUBLIMATE, WHEN THE CAMERAS WERE ON, OR SOMEHOW QUICKLY DID SO DURING THE TRANSPORTATION FROM THE OVEN TO THE SETUP DURING THE OTHER INVESTIGATORS’ BREAKS. SO DESPITE THIS, Y0U N0 TIVITY....

WHAT DO YOU CALL A JOKE THAT HAS LOST ITS PUNCHLINE?

CLASSICAL PHYSICS IF I THROW THIS BALL AT YOUR FACE, YOU ARE ABLE TO ACCURATELY ESTIMATE ITS STARTING POSITION AND MOMENTUM AND THEREFORE CALCULATE ITS TRAJECTORY IN ORDER TO MOVE YOUR ARMS TO REFLECT IT.

QUANTUM PHYSICS IF I MONKEY PANTS GENERAL STATUS CALCULATOR.

Things we eventually stop caring about
by Joanna Liu, 1B Chemical

Wearing pajamas to class

Drinking four large cups of coffee/day

Having aliens invade Earth

Eventually...not sleeping

Wearing casual clothes [instead of cooking]

Staying until 11PM to study

by David Rousso, 1B Nanotechnology
**Why did you join Facebook?**

*“A lot of girls had it.”*  
Clutch, 1B Tron

*“My mom told me all the cool kids had it.”*  
Matt Cherry, 1B Mgmt

*“It became the only way to communicate, and it was a big deal if you didn’t have it.”*  
Keshav Iyengar, 3A Mech

*“All my rehearsal schedules were on Facebook.”*  
Teresa Lunini and Katie Chin, 3A Mech

*“I thought the web design was interesting.”*  
Yupeng Zhao, 4th year ECE Exchange

*“To get info on assignments on my class group.”*  
Kevin Mohamed, 3A Mech