Note: This document is hosted here for archival purposes only. It does not necessarily represent the values of the Iron Warrior or Waterloo Engineering Society in the present day.

THE IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY VOLUME 28 ISSUE 5 | WEDNESDAY, MARCH 28, 2007

TalEng Impresses All
Page 10

LowRider Says Goodbye
Page 12

Check us out @ http://iwarrior.uwaterloo.ca/

Sustainable Technology Education Project (STEP)

An Interview with Michael McWilliam

Wind energy is one of the most promising renewable energies and a main focus for STEP.

ARA HASSERJIAN
3B MECHATRONICS

Ara: How urgent do you consider the energy issues that human kind faces to be?

Mike: If you follow Dr. King Hubbert's curve, we can predict that the peak in oil supply will occur between 2005 and 2020. At best, that gives us a little over 13 years before we enter an age in which oil is on a permanent decline. Our modern day society is predicated on cheap energy – our economy, our food production, transportation, etc. We need to change things very soon if we want to enjoy the same level of comfort we have today. Making big changes in society to change the practices in the large scale don't happen over night. I think we need to start looking from now for what is going to be the solution 20 – 40 years from now, because that is the type of time scale required to build the infrastructure to support a certain way of doing things

Ara: How urgent do you consider the energy issues that human kind faces to be?

Mike: If you follow Dr. King Hubbert's curve, we can predict that the peak in oil supply will occur between 2005 and 2020. At best, that gives us a little over 13 years before we enter an age in which oil is on a permanent decline. Our modern day society is predicated on cheap energy – our economy, our food production, transportation, etc. We need to change things very soon if we want to enjoy the same level of comfort we have today. Making big changes in society to change the practices in the large scale don't happen over night. I think we need to start looking from now for what is going to be the solution 20 – 40 years from now, because that is the type of time scale required to build the infrastructure to support a certain way of doing things

Ara: When was STEP created? Why did you decide to commit as much of your time and energy as you have to it, and what is your vision for it?

Mike: Step started in 2002 by Jeff DeLoyde and it started with the soul purpose of building a solar array on campus. After two years he raised about $40,000 with a very focused effort and managed to get a 2 kW array placed on Fed Hall. Personally, I had always been remotely interested in renewable energy, and I got wind of the project at its tail end and I did what little I could to help at that point. The reason for my commitment is the simple knowledge of climate change and

See "One", Page 4

Next-Generation Cycling Tour

ERIC VIETH
4B ELECTRICAL

Waterloo for Engineering, Waterloo for Science, Waterloo for Environmental Studies. These are the three most important sayings among the Next-Generation of students coming out of Canada's high schools. "Why?", you may ask? Because we're going to tell them! The Next-Generation project has been launched by two 4th Year Electrical Engineering students who look back at their post-secondary education only to see the positive effects that it has had on their lives. This field of study, and more importantly, this institution have enormous potential. The message is that with an education in Engineering, Science or Environmental Studies, the Next-Generation of university students will be prepared to face the challenges of a unified world by contributing to research and development of technologies with a new purpose: To increase Canada's

See "Project", Page 13

Letter from the Iron Editor: An Evaluation of this Term's Paper

HAROUT MANOUGIAN
EDITOR-IN-CHIEF

After Issue 4 hit the stands, the Iron Warrior received the following email from Michelle Croal in 1B Chemical:

"Hello. I just wanted to say that I love reading IW! The new webpage is awesome, and now I can get my dosage of UW Engineering while I'm away on co-op! Thanks and keep up the good work!"

You're welcome, Michelle. Making sure you have thought-provoking and informative material to read is our job.

This letter, filled with bright-eyed froshy enthusiasm, got me thinking about the circumstances that led me to first get involved with the paper, not too long ago. The IW really is a unique piece. When I had made a bunch of nerdy comics that weren't funny unless you had taken key engineering courses, my roommates loved them and suggested I submit them to the paper. Imprint, distributed throughout campus (usually with a disregard for other papers occupying the university-owned racks), did not have a readership that would appreciate or even understand the punch lines of the comics. I sent them, instead, to the Iron Warrior, then headed by Dan Arnott, a role model EIC whose wisdom has helped me get through this term. Excited that something I created was making people laugh, I applied to be Copy Editor for the next term. At the end of that stint last summer, Gabriel Chan, the last B-Soc EIC, asked me if I would be interested in the top job for the Winter 2007 term. Eventually, a resurrected Advisory Board approved my application and I started preparing the master plan for the term while on co-op in the Fall.

I knew that the Iron Warrior was not an Imprint so I didn't want to try to make it one. None of the Iron Warrior staff is paid nor does the paper collect money from undergraduate students. With less resources, it would be unfeasible and redundant to cover breaking news which is already delivered to the same racks. What the Iron Warrior excels at, however, is in providing Engineering-relevant content which no one else can provide. It is the official newspaper of the UW Engineering Society and keeps you up to date on what your executive is working on. No other outlet can bring you pictures from Scunt or tell you when the Engineering SemiFormal is. Where else can you read about the adventures of exchange students abroad or get inside information about the future site of new engineering buildings? The Iron Warrior gives you that snug feeling of belonging.

I have tried to continue the strong tradition this term but was surprised that little is in place to hold me accountable now that the last issue is in print. To be transparent and fair, I decided to critique myself and the paper this term.

Taking my shortcomings first, the complaint I heard most often was that articles were pushed back because of a decision taken over the Christmas Break to keep the issues to twelve pages in order to save costs, decrease layout time, and avoid printing "filler" content of little value. This decision was helpful, however, in creating a buffer of articles for a rainy day, which came in very handy when midterms and Reading Week took their toll on submissions. With all the postponed material, though, Issue 3 still included a lot of relevant articles and twelve pages were filled without needing any filler.

Next, although, I had planned several regular features that I intended to put in every issue, many were canned because I did not follow up with those whom I had asked to write them.

Getting Frosh involved in a Winter term is difficult as the staff is chosen in the Spring before they arrive on campus, but I did advertise the kick-off meeting and visited the 1B classes with the EngSoc Exec at the beginning of the term. Despite my efforts, I failed to attract fresh faces to the paper's team, which was made up of many long-standing contributors and former EICs. I hope that students in first year will apply to staff positions by visiting the EngForms section of the EngSoc website.

Lastly, the Iron Warrior still does not have its own racks because I put off the project to the Spring 2007 A-Soc paper, which has already done a lot of research and obtained a WEEF grant for the project as of last term. As you may have noticed, Imprint shows no remorse in throwing our issues onto the floor on Friday morning although, to the best of our knowledge, the racks that we share are owned by the University. This is a practice that has made us limit our distribution to within the Engineering buildings, where we can keep a closer eye on our issues. In fact, the UW Gazette, a newspaper formerly published by the Office of Information and Public Affairs for faculty, staff, and students, is no longer published in part due to the similar abuse their paper underwent. The IW will put up a few of our own racks around campus to deal with the situation. Again, I apologize that this was delayed to the Spring. The fact that I was unable to find someone willing to be our Distribution Manager was also a factor.

The successes of the term are significant as well. An agreement with the EngSoc Executive saw the granting of funds to directors to place ads in the paper. Overall, with more frequent communication and announcements at EngSoc meetings, the ties between the paper and the Society at large were strengthened from some previous terms in which the two operated almost independently. Also, the look of the paper was updated for the first time in about seven years and the website was in turn jazzed up. This project was the brainchild of former EIC David Yip, who has worked on the new design for several terms. On the organizational front, the Iron Warrior has many more assets than it did at the beginning of the term. Thanks to WEEF, we now own a digital voice recorder, an LCD monitor, Microsoft Office (so we can finally open the Word files of which we get so many!), and the next version of our layout design software. Since we're talking about computers, thanks to Engineering Computing, the IW was able to get back on track just in time for the first issue after a fan seized up and allowed the computer to overheat, wrecking the main hard drive.

It may be premature to say that this has been the first term in a while where organizations on campus have not freaked out with something printed in the Iron Warrior (it typically happens with the last issue of the term). After reading an article about sex printed in the Fall 2006 term, a representative from the Dean of Engineering's Office expressed her disappointment with the quality of the article. It caught the IW staff off-guard considering that Imprint, which receives much more space, money, and support from the University, has published more risque articles in every issue for over a year. The truth was that the Dean's Office wanted the Iron Warrior to feature better quality articles in general as it is read by engineering students and professionals across the country and influences the faculty's reputation. In the end, both parties agreed that having higher caliber articles was a just priority but that the Iron Warrior was a student-run organization that did not answer to the school's administration. In response, a new Review Panel was created to get feedback from engineering students as to whether they wanted certain articles that were deemed borderline by the Editorial Board to be included in the printed paper. Over the term, this body was used twice. One article was accepted while the second was rejected. Dean Adel Sedra has expressed his approval of the direction the paper has taken this term.

That's the evaluation for the term. Now, it's time to properly recognize those whose contribution to the paper has been exceptional. According to the IW Policy Manual, I get to give out two awards at the beginning of the term. The Editor's Award is given to the staff member who most distinguished themselves through dedication, commitment, and contribution to the IW. Without a doubt, this reward goes to Michael Simoes, who has sacrificed many a Saturday with me in the IW office, laying out the paper. Frequently, Michael would arrive right on time at 7am and immediately start the layout work while I wandered in late, groggy from copy editing the night before. The Iron Pen Award goes to the staff member who contributed the highest quantity of published content. This term, it is awarded to Faraz Syed. He not only sent in the most articles, but they were well-researched and insightful. Please note, however, that all the people listed to the right of this article have done an amazing job this term. If you see them in class, grovel at their feet in gratefulness for providing you with the Iron Warrior.

Of course, now that you know the ins and outs of the paper, you want to join the staff for next term. Well, you can. Fill out the form on the EngSoc website at http://engsoc.uwaterloo.ca (under EngFORMS) for your preferred staff position. Although I won't be on campus for any more B-Soc terms due to the ECE fourth-years switching streams, I look forward to reading your articles online.

EngFORM for F07 positions at http://engsoc.uwaterloo.ca/www

THE IRON WARRIOR

The Newspaper of the University of Waterloo Engineering Society

The Iron Warrior is a forum for thought provoking and informative articles published by the Engineering Society. Views expressed in The Iron Warrior are those of the authors and do not necessarily reflect the opinions of the Engineering Society.
The Iron Warrior encourages submissions from students, faculty and members of the university community. Submissions should reflect the concerns and intellectual standards of the university in general. The author's name and phone number should be included.
All submissions, unless otherwise stated, become the property of The Iron Warrior, which reserves the right to refuse publication of material which it deems unsuitable. The Iron Warrior also reserves the right to edit grammar, spelling and text that do not meet university standards. Authors will be notified of any major changes that may be required.
Mail should be addressed to The Iron Warrior, Engineering Society, CPH 1327, University of Waterloo, Waterloo, Ontario, N2L 3G1. Our phone number is (519) 888-4567 x32693. Our fax number is (519) 725-4872. E-mail can be sent to iwarrior@engmail.uwaterloo.ca

Point vs. Counterpoint

Should IW Receive Direct EngSoc Funding?

ANDREW DODDS
2A MECHANICAL

More money? With tuition going up, the possibility of a non-refundable bus pass, and loads of other fees and cost-of-living increases, how could I ask that money be directed to the Iron Warrior? I think you'll find that there are many reasons why direct continual EngSoc funding is a very positive and needed influence on the Iron Warrior.

First off, I think I should point out the obvious reason why you should agree with me that the Engineering Society should fund the Iron Warrior Newspaper: you are reading this. By reading this paper right now, or by reading it online, it proves that you have a reason to want this paper to be around, and to be of good quality, whether you read this article or any other. Engsoc funding goes to fund various initiatives, such as the student teams, and events. How many events do you attend? Probably not all of them. And how many events happen five times a term? Again, not many. However, this paper does come out a whopping five times each term, and is likely enjoyed by far more people than most other things that EngSoc funding goes to. Reminder though, in no way do I wish to say that any team, event, or other recipient of EngSoc funding or support is a waste, undeserving, or without merit in any way, shape or form.

Think beyond this as well. The Iron Warrior is "The Newspaper of the University of Waterloo Engineering Society - Since 1980", and yet it bears this title without receiving any continual funding. Would you feel it's fair for people to hop the border into Canada, bill our health care system for huge sums of money, benefit from our schools, our infrastructure and everything else we provide, without them ever paying a single penny of taxes to fund these things? Last year EngSoc pulled Issue 5 and forced an additional Issue 6 to be printed; should such power be exerted without direct continual funding, should EngSoc be able to control something it doesn't currently show it believes in enough to give it continual financial support? In every issue in fact, EngSoc also uses the paper to give us their executive reports, every election to give us information on the candidates, and uses it to publicise events throughout the term, which is only further reason that all that representation should come with some continual funding.

It is true though that EngSoc has given financial infusions to the paper to keep it afloat, at first as loans since our only funding is ads, and they don't pay out until after the issue with their ad is printed, and then as infusions when revenues were so low as to need it, but only on an individual basis. It is also true that Directorships can buy ads in the paper, and that they wish to continue to do this, but this is neither a huge source of funding, nor a reliable continual one. Direct continual funding could perhaps secure an arrangement of space for EngSoc event ads, an EngSoc event wall of sorts.

Why does the paper need funding though? The fact is that it costs about $500 per issue to print the Iron Warrior. This is certainly no small amount, considering you print fifteen issues a year, plus a frosh issue and then also the occasional election issue or other special issue. Ads cover some of that, and the goal is to break even, but slow ad funding has left us wanting of late.

This problem of low ad revenues exists partly because IW support from students is getting low. In my Fall 2004 term, we were able to consistently put out issues of 16 pages in length for the term, with one of 20 and another of 24 to cap off the term. This term we've had four issues and only reached 16 pages for half of them.

Why is there no support anymore for IW, in terms of writers? It's because there's no reward. With hatred for PDEng still high, students would be foolish to say that it has no value, and yet go to write for the paper and put on your resume a different source that also provides improvements in writing and other non-technical skills that PDEng is also present to enhance. Look across campus to Imprint: they have a lovely system. Their budget, roughly 35% funded by the Imprint fee and almost all the rest through advertising, is massive, roughly $365,000 annually. Of that, $145,000 is paid to retain the services of three full-time staff (Their Editor-in-Chief, and General and Ad Managers), along with seven work-study students and two summer part-time helpers for the Frosh issue. In addition to that, about $15,000 is given in Honoraria each year to the staff, for their hard work and dedication. Nobody who works for the IW is paid a single cent. Our reward is a cookie (or doughnut, etc) at each meeting, lately upgraded to a couple of meetings with a sandwich. We do fairly well there, but still Imprint has the edge with free Pizza weekly. Believe it or not, this does make a difference. Motivating more people with simple things like that, tailored to our own supply of money and motivators, can make a big difference. With more people, we could finally have a term where the Masthead (read: place where it says who does what for the paper) doesn't have a single [vacant] listed. Yes, there's only one this term, but there have often been terms with many of them, or with people filling them who lacked motivation.

If you consider that there are over four thousand Engineering students, if even $1 from the EngSoc fee were diverted to the Iron Warrior, it would just about cover every single issue for the whole year, and allow the meagre ad revenues to give back to our contributors, and to provide motivation for others to contribute, in order to improve the size and quality of our Engineering newspaper. Maybe this sounds crazy, but MathSoc is actually responsible for 100% of mathNEWS funding (they carry no ads), and we all pay a fee to Imprint each term; are they both deserving of funding and the Iron Warrior not?

With more people, more motivation, we would have bigger issues with better stories, increasing the enjoyment of the paper and in time its circulation. In rewarding our staff and their hard work, perhaps I, who started in 2004, wouldn't feel that I am the youngest person on staff, and we would actually see fresh blood each fall. In improving our issue size and quality it becomes more impressive to employers who see IW staff on a resume. At the same time, that will attract more advertisers, since the paper is more impressive and would have a greater circulation. In time, the need for EngSoc funding could diminish or disappear. If left without funding, no motivation is present to encourage new people to contribute (currently a huge problem), and as time wears on the paper will only get worse and worse. But with some help, the Iron Warrior can get back on its feet, get sturdy, and in time stand firmly on its own.

I would even suggest expanding one of our Iron Warrior Editorial board positions into an important Directorship: Advertising Manager. The Iron Warrior, the Student Teams, and all events could use and would love more sponsorship. If we could have a single united Directorship to oversee some or all of the Engineering groups looking for advertising/sponsorship/funding, it could greatly improve the results we get. This could allow us to contact all possible sponsors and donors, and allow them to advertise in the paper, or sponsor specific teams or events, and would allow the rates to be streamlined, and stop us from competing for funds, and instead uniting us in order to receive greater returns.

Perhaps another way to help our funding would be to use our representatives in FEDS to look into the possibility of taking the money all Engineering students contribute to Imprint each term, or even a single dollar of it if they were pushy about the issue, and allowing it to go to the Iron Warrior each term for Engineering students. Imprint clearly already gets plenty and does very well with it, so we could see if we could take the Engineering student contribution and apply it to our paper. If that were possible, it could be very beneficial.

In the end, I think it is fairly clear that continual EngSoc funding has great potential to benefit not only the Iron Warrior, but also those who contribute to it, those who read it, and the Engineering faculty as a whole. I think that this issue is worthy of attention and focus from our Engineering Society, and I hope that at last we might generate some attention to this issue, and get ourselves into a much better situation for everyone in the end.

DAN ARNOTT
3B ENVIORMENTAL

Recently, the Iron Warrior applied for and received WEEF funding for several important upgrades, including Microsoft Office. Considering our PC is now two years old, the question is raised: why did it take two years for us to get Microsoft Office? This, in turn, raises the broader question: should the Iron Warrior receive direct funding from EngSoc to help us run a better paper? I would say no.

The Iron Warrior currently does not receive direct funding from EngSoc, although EngSoc does provide periodic grants on an as-needed basis. The Iron Warrior pays for its publication with advertising revenue and the occasional donation. If the Iron Warrior were to receive direct funding, that would mean one of three things: either part of the $14 EngSoc fee would go directly to the Iron Warrior, the EngSoc fee would have to be somewhat increased to include Iron Warrior funding, or an optional Iron Warrior fee would have to be introduced.

"If EngSoc funds us, where's the motivation? We can turn out an absolute piece of crap, and as long as we get the exec reports in, we'll still get our paycheque at the end of the day."

All three of the above options are problematic. If the IW takes part of the existing EngSoc fee, there is less money available in the EngSoc budgets for all the other events we've grown accustomed to. If the EngSoc fee is raised, or if an optional IW fee is introduced, students will be provoked to rage, as the mere mention of any increase in fees sends them into a Bruce Banner/Incredible Hulk-style fury. And you wouldn't like the engineering student body when it's angry. The fact that I spend so short a time on raising fees goes to show how opposed most students are to this on principle.

But let's put these arguments aside for a moment. Let's say that there's a way for EngSoc to fund the Iron Warrior directly anyway. Some say this would have a positive impact on newspaper quality, providing new equipment, more resources, and possibly even a small honorarium for writers and staff. I maintain that direct funding from EngSoc will have the exact opposite effect.

Currently, the Iron Warrior obtains its funding chiefly from advertising revenue. We are required to produce a high-quality paper, a paper people will want to advertise in, and we are required to take the initiative to seek out these advertisers ourselves. If EngSoc funds us, where's the motivation? We can turn out an absolute piece of crap, and as long as we get the exec reports in, we'll still get our paycheque at the end of the day. I don't think our fine paper ought to succumb to this kind of apathy.

There is also the question of EngSoc influence on the Iron Warrior. If they pay for it, they should have some control over the content. Anyone who remembers the "Irongate" incident of the Summer 2006 term knows that conflicts can arise over the differing opinions of Iron Warrior staff and EngSoc executives. While this was an isolated incident and should no longer affect IW/EngSoc relations, the freedom of the press and the independence of the Iron Warrior from the EngSoc Exec must be maintained. There are more pragmatic reasons for this: if EngSoc funds us, they may be required to implement some sort of quality control on the paper. This will require time on their part and our part, and will introduce yet one more step before publication. Time is at a premium with Waterloo engineering students, and we need all we can get. Involving EngSoc with the Iron Warrior would take valuable time away from both parties. This ought to be avoided.

Believe me, I'd like a few dollars in my pocket in return for my tireless efforts term after term. But the cost to the engineering student body is too great, in terms of money and newspaper quality. Therefore, the Iron Warrior should remain financially independent of EngSoc.

One Small STEP for Man...

Continued from Page 1

pollution, and knowing that these things are going to impact my life, and they will happen in my lifetime. So it would be irresponsible of me, knowing these things, to not do anything about it, and that is why I got involved in a big way. I think we have a very valuable resource in the audience we get with this University. You have thousands of potential professionals entering the university and graduating as professionals every year. They spend 4 to 5 years here, and they have many ideas impressed upon them and that ends up forming who they are, and what they do in the real world. Mike Lazaridis is a prime example of how one comes to this school, absorbs some of the thought that is happening here, and then he starts a company like RIM, which has had a huge impact on society. I want to use that success by having lots of examples of renewable energy technology on campus so every student gets exposed to this stuff, and when they become political and business leaders, they are properly educated on it, and hopefully, they choose a sustainable future.

Ara: How are the political and international conflicts of today's world related to the energy crisis, in your view?

Mike: For any nation, the cheaper the energy source, the easier it is to run your economy, the more trade potential you have, and consequently, wealth in your society. When you enter an age of declining resources, you will see people fighting over it. From a theoretical point of view, declining resources will cause conflict. Regarding the Iraq or Afghani war, however, how closely it is related to energy is a matter of speculation.

Ara: Among the renewable energy technologies that we are aware of today, how do you rank them in relevance and potential for realization in the short term and how does that relate to the work of STEP.

Mike: The control management of the electrical grid is on supply side management. When you turn on the light, you don't have to tell the power company that you are about to do so. They sense you turning on the light so they react to it by adjusting the throttle. That's supply side management. Since you have no control over the wind blowing, or sun shining or any of those types of dynamics, you can't do supply side grid control with many of the renewable sources. You can only have renewable energy like solar and wind in short supply, with the exception of medium to large scale hydro electricity which can be controlled by reservoirs. The paradigm shift to where we no longer think of energy as something that's there all the time whenever we need it is one that we will have to make - we're going to have to relinquish that control, and start storing energy. Where the wind turbines and solar panels and the hydro dams harvest energy, we need some kind of mechanism to store it. Pumped hydro is a good one, and all across the escarpment, we can have pairs of lakes to transfer energy – I can see hydro as a very good energy storage mechanism for some areas. In areas where you have large salt caverns, you can do pressurized gas energy storage. There is talk about using super conducting inductors and super capacitors. In any case, we have to move away from the grid system where the generation and demand is perfectly in sync due to natural gas.

Many people are thinking about bio fuels for replacing oil. I think that's a flawed point of view. Bio fuel competes with a food resource. The only reason why bio fuel can be produced today is because of modern day high intensive farming practices. But these require a lot of mechanism – all the tractors burning oil. Now if you have to start growing your oil, then much of your oil goes into powering the tractor you need to grow it. How much land do you need then for fuel production when you have those offsetting yield factors and then how much food are you going to be producing? There have been studies done to see the potential of bio fuels for feeding the worlds energy demands, without competing with food production, and a very small fraction of the worlds energy can be sustainably supplied by bio fuel. I think in the long term a lot of our energy is going to have to come from wind, solar, hydro, geothermal, and tidal. If I were to rank the technology, I would have to say that in all cases hydro will always be number one. It has the greatest amount of energy density, it is perfectly clean and renewable and despite the fact that many of the large scale hydro sites have been developed, there is still a lot of potential for small and medium scale hydro sites around the world. It is compatible with supply side management and you can maintain a lot of the grid's functionality today just by developing all the different hydro sites. If you are not near the ocean, I would say wind is the next best one. In certain areas, tidal is I think another good energy source. If the geography is right, then it can be superior to wind. Solar has to come down considerably in initial cost for it to have any major impact. Geothermal is another one of those that is applicable just in certain areas.

Ara: What can you say about moving to hydrogen as a means of energy distribution through fuel cells?

Mike: I'm fifty-fifty on hydrogen, to be honest. Right now, if we were to produce hydrogen we would get it from natural gas by reforming it and the conversion efficiencies there are not that bad. You're not actually doing anything because you are basically displacing the pollution from the city to the reforming plant. You end up consuming more natural gas than you would otherwise. So if we were to use reforming I'm not in support of hydrogen. If you were to make it through electrolysis, the electricity to hydrogen to electricity – your only getting a small percentage of the original energy out of it. Essentially it's an energy storage mechanism and it's not a very efficient one. There is a lot of infrastructure that has to be put in place to make the hydrogen economy go and I have a lot of reservations for it because it requires a huge amount of public funds for just this one technology, and it's not a simple technology. You can't put hydrogen in just anything. It can diffuse through most materials so the storage and transportation is exceedingly difficult. It takes a large amount of energy just to compress the hydrogen into a compact form. The fuel cells for hydrogen are very temperamental devices and they are very susceptible to being poisoned. A good analogy can be borrowed from Dr. Roydon Fraser. He compares technologies to things in biology. He says that if you have an organism that is highly efficient and highly specialized, it will actually fail in society because it can't handle the minor perturbations in the environment. With fuel cells, you need specialized technicians to support the maintenance of it. If you were to give these vehicles to everyone you would need highly educated people to maintain the vehicles. You would draw large amounts of economic resources just to maintain the transportation of society when they can be used better in other ways. I think that batteries are a well understood technology that can be used just as well. We have to rethink transportation. Most of us live in a city and drive maybe 40 minutes a day, and we can easily do that with a battery powered car. Mass transportation through subways and street cars, if they were more abundant, efficient, and comfortable for people, would get us much further. I think the financial investment you would need to support that system would be a lot less than supporting a hydrogen system. For rural and long distance transportation, it's going to be exceedingly expensive to have an electric train corridor from, for instance, Vancouver to Toronto. These types of applications will depend on chemical fuels, since these are the most energy dense. Hydrogen is like one of those carriers that we can use when we are producing more energy than we need and then we can use that hydrogen to support long distance transportation. So I do think hydrogen has its place, I just don't think it has a place as a replacement for the internal combustion engine in general.

Ara: How important do you consider education on sustainable technology to be?

Mike: Sustainable technology is a lot different from the conventional technology so to use it properly you have to know the differences. Energy is a very political topic because the distribution and infrastructure is so huge that you can not make changes unless you have government support, and you don't have government support unless you have public support. So people as a whole have to be educated and knowledgeable, for society to actually make the right choices. This is why it is very important for this type of education to exist.

Ara: What are some of the greatest milestones in the history of STEP, and what are some of the projects it currently busies itself with.

Mike: Some of the milestones since its conception are the solar panels on Fed Hall. It's a 36 panel array, 2 kW, and that was built in 2004. We have had some issues with it such as the replacement of its inverter, which is considered a milestone also so now it is connected and producing energy onto the grid. We are very close to actually installing some energy monitoring equipment so we can post its performance data on the website and on the sign outside. Our next project was launched by Brandon Seegmiller and this was when I became involved. We arranged for some solar thermal panels to be installed on the roof of the PAC. They have not yet been

Continued on Next Page

Continued from Last Page

installed because the roof of the PAC will be replaced first, so we will have to wait.

Our current project is the placement of a wind turbine on North Campus, and we are writing a proposal which we hope to submit to President David Johnston this summer. We are at the very beginning of the project. Since the solar project ended, we have been doing many public education projects to keep the group moving since we didn't really have a physical project to be working on other than doing some of the preliminary work for the project. So in the near future we will be entering a real engineering project management phase where a lot of engineering skills will be required, and there are many opportunities for engineering students to become involved, and learn a lot about wind energy and project management. Getting involved now is a good time, since it will probably take four years to complete the project. Unfortunately with just the way school works, people are always graduating or forced to leave STEP for various reasons, so we need to recruit to make up for the people we lose all the time.

Ara: Which engineering branch is STEP's work best suited for:

Mike: STEP is definitely a multidisciplinary project. Fundraising, and coordinating with contractors and companies are all business skills, but some of the project management tasks like arranging crane lifts and doing geotechnical studies fall under the civil discipline. And doing preliminary calculation on wind energy yield and selecting the actual wind turbine fall under the mechanical engineers jurisdiction. The electrical connections and data monitoring falls under electrical, computer and software engineering. Also the statistical analysis of the wind resource is a math task. The administrative work needed to co-ordinate and synchronize is a business task. One of the things we are trying to do is develop a computer application to organize all the information – that is a computer science task. Our volunteer base is made of people from all faculties: Engineering, ES, Arts, AHS, Science, Math, and they all find their niche in it and we need them all to work together.

Ara: How would an interested student go about joining STEP

Mike: The best way to get involved is to email the step email account: step@feds.ca. We will add you to our list, inform you of all the meeting times, and once you show up, one of us will give you an introduction, and that's it, you're plugged in! When was STEP created? Why did you decide to commit as much of your time and energy as you have to it, and what is your vision for it?

Step started in 2002 by Jeff DeLoyde and it started with the soul purpose of building a solar array on campus. After two years he raised about $40,000 with a very focused effort and managed to get a 2 kW array placed on Fed Hall. Personally, I had always been remotely interested in renewable energy, and I got wind of the project at its tail end and I did what little I could to help at that point. The reason for my commitment is the simple knowledge of climate change and pollution, and knowing that these things are going to impact my life, and they will happen in my lifetime. So it would be irresponsible of me, knowing these things, to not do anything about it, and that is why I got involved in a big way. I think we have a very valuable resource in the audience we get with this University. You have thousands of potential professionals entering the university and graduating as professionals every year. They spend 4 to 5 years here, and they have many ideas impressed upon them and that ends up forming who they are, and what they do in the real world. Mike Lazaridis is a prime example of how one comes to this school, absorbs some of the thought that is happening here, and then he starts a company like RIM, which has had a huge impact on society. I want to use that success by having lots of examples of renewable energy technology on campus so every student gets exposed to this stuff, and when they become political and business leaders, they are properly educated on it, and hopefully, they choose a sustainable future.

Ara: How are the political and international conflicts of today's world related to the energy crisis, in your view?

Mike: For any nation, the cheaper the energy source, the easier it is to run your economy, the more trade potential you have, and consequently, wealth in your society. When you enter an age of declining resources, you will see people fighting over it. From a theoretical point of view, declining resources will cause conflict. Regarding the Iraq or Afghani war, however, how closely it is related to energy is a matter of speculation.

Ara: Among the renewable energy technologies that we are aware of today, how do you rank them in relevance and potential for realization in the short term and how does that relate to the work of STEP.

Mike: The control management of the electrical grid is on supply side management. When you turn on the light, you don't have to tell the power company that you are about to do so. They sense you turning on the light so they react to it by adjusting the throttle. That's supply side management. Since you have no control over the wind blowing, or sun shining or any of those types of dynamics, you can't do supply side grid control with many of the renewable sources. You can only have renewable energy like solar and wind in short supply, with the exception of medium to large scale hydro electricity which can be controlled by reservoirs. The paradigm shift to where we no longer think of energy as something that's there all the time whenever we need it is one that we will have to make - we're going to have to relinquish that control, and start storing energy. Where the wind turbines and solar panels and the hydro dams harvest energy, we need some kind of mechanism to store it. Pumped hydro is a good one, and all across the escarpment, we can have pairs of lakes to transfer energy – I can see hydro as a very good energy storage mechanism for some areas. In areas where you have large salt caverns, you can do pressurized gas energy storage. There is talk about using super conducting inductors and super capacitors. In any case, we have to move away from the grid system where the generation and demand is perfectly in sync due to natural gas.

Many people are thinking about bio fuels for replacing oil. I think that's a flawed point of view. Bio fuel competes with a food resource. The only reason why bio fuel can be produced today is because of modern day high intensive farming practices. But these require a lot of mechanism – all the tractors burning oil. Now if you have to start growing your oil, then much of your oil goes into powering the tractor you need to grow it. How much land do you need then for fuel production when you have those offsetting yield factors and then how much food are you going to be producing? There have been studies done to see the potential of bio fuels for feeding the worlds energy demands, without competing with food production, and a very small fraction of the worlds energy can be sustainably supplied by bio fuel. I think in the long term a lot of our energy is going to have to come from wind, solar, hydro, geothermal, and tidal. If I were to rank the technology, I would have to say that in all cases hydro will always be number one. It has the greatest amount of energy density, it is perfectly clean and renewable and despite the fact that many of the large scale hydro sites have been developed, there is still a lot of potential for small and medium scale hydro sites around the world. It is compatible with supply side management and you can maintain a lot of the grid's functionality today just by developing all the different hydro sites. If you are not near the ocean, I would say wind is the next best one. In certain areas, tidal is I think another good energy source. If the geography is right, then it can be superior to wind. Solar has to come down considerably in initial cost for it to have any major impact. Geothermal is another one of those that is applicable just in certain areas.

Ara: What can you say about moving to hydrogen as a means of energy distribution through fuel cells?

Mike: I'm fifty-fifty on hydrogen, to be honest. Right now, if we were to produce hydrogen we would get it from natural gas by reforming it and the conversion efficiencies there are not that bad. You're not actually doing anything because you are basically displacing the pollution from the city to the reforming plant. You end up consuming more natural gas than you would otherwise. So if we were to use reforming I'm not in support of hydrogen. If you were to make it through electrolysis, the electricity to hydrogen to electricity – your only getting a small percentage of the original energy out of it. Essentially it's an energy storage mechanism and it's not a very efficient one. There is a lot of infrastructure that has to be put in place to make the hydrogen economy go and I have a lot of reservations for it because it requires a huge amount of public funds for just this one technology, and it's not a simple technology. You can't put hydrogen in just anything. It can diffuse through most materials so the storage and transportation is exceedingly difficult. It takes a large amount of energy just to compress the hydrogen into a compact form. The fuel cells for hydrogen are very temperamental devices and they are very susceptible to being poisoned. A good analogy can be borrowed from Dr. Roydon Fraser. He compares technologies to things in biology. He says that if you have an organism that is highly efficient and highly specialized, it will actually fail in society because it can't handle the minor perturbations in the environment. With fuel cells, you need specialized technicians to support the maintenance of it. If you were to give these vehicles to everyone you would need highly educated people to maintain the vehicles. You would draw large amounts of economic resources just to maintain the transportation of society when they can be used better in other ways. I think that batteries are a well understood technology that can be used just as well. We have to rethink transportation. Most of us live in a city and drive maybe 40 minutes a day, and we can easily do that with a battery powered car. Mass transportation through subways and street cars, if they were more abundant, efficient, and comfortable for people, would get us much further. I think the financial investment you would need to support that system would be a lot less than supporting a hydrogen system. For rural and long distance transportation, it's going to be exceedingly expensive to have an electric train corridor from, for instance, Vancouver to Toronto. These types of applications will depend on chemical fuels, since these are the most energy dense. Hydrogen is like one of those carriers that we can use when we are producing more energy than we need and then we can use that hydrogen to support long distance transportation. So I do think hydrogen has its place, I just don't think it has a place as a replacement for the internal combustion engine in general.

Ara: How important do you consider education on sustainable technology to be?

Mike: Sustainable technology is a lot different from the conventional technology so to use it properly you have to know the differences. Energy is a very political topic because the distribution and infrastructure is so huge that you can not make changes unless you have government support, and you don't have government support unless you have public support. So people as a whole have to be educated and knowledgeable, for society to actually make the right choices. This is why it is very important for this type of education to exist.

See "One", Page 6

...One Giant Leap for Mankind

Continued from Last Page

Ara: What are some of the greatest milestones in the history of STEP, and what are some of the projects it currently busies itself with.

Mike: Some of the milestones since its conception are the solar panels on Fed Hall. It's a 36 panel array, 2 kW, and that was built in 2004. We have had some issues with it such as the replacement of its inverter, which is considered a milestone also so now it is connected and producing energy onto the grid. We are very close to actually installing some energy monitoring equipment so we can post its performance data on the website and on the sign outside. Our next project was launched by Brandon Seegmiller and this was when I became involved. We arranged for some solar thermal panels to be installed on the roof of the PAC. They have not yet been installed because the roof of the PAC will be replaced first, so we will have to wait.

Our current project is the placement of a wind turbine on North Campus, and we are writing a proposal which we hope to submit to President David Johnston this summer. We are at the very beginning of the project. Since the solar project ended, we have been doing many public education projects to keep the group moving since we didn't really have a physical project to be working on other than doing some of the preliminary work for the project. So in the near future we will be entering a real engineering project management phase where a lot of engineering skills will be required, and there are many opportunities for engineering students to become involved, and learn a lot about wind energy and project management. Getting involved now is a good time, since it will probably take four years to complete the project. Unfortunately with just the way school works, people are always graduating or forced to leave STEP for various reasons, so we need to recruit to make up for the people we lose all the time.

Ara: Which engineering branch is STEP's work best suited for:

Mike: STEP is definitely a multidisciplinary project. Fundraising, and coordinating with contractors and companies are all business skills, but some of the project management tasks like arranging crane lifts and doing geotechnical studies fall under the civil discipline. And doing preliminary calculation on wind energy yield and selecting the actual wind turbine fall under the mechanical engineers jurisdiction. The electrical connections and data monitoring falls under electrical, computer and software engineering. Also the statistical analysis of the wind resource is a math task. The administrative work needed to co-ordinate and synchronize is a business task. One of the things we are trying to do is develop a computer application to organize all the information – that is a computer science task. Our volunteer base is made of people from all faculties: Engineering, ES, Arts, AHS, Science, Math, and they all find their niche in it and we need them all to work together.

Ara: How would an interested student go about joining STEP

Mike: The best way to get involved is to email the step email account: step@feds.ca. We will add you to our list, inform you of all the meeting times, and once you show up, one of us will give you an introduction, and that's it, you're plugged in!

Engineering Society Executive Reports

16 Months Goes By So Fast

JEN CARROLL
PRESIDENT

Well, not really. I'm sure you can all relate, sometimes it feels like the school/work term will never end and then other times it just flies by. Being on EngSoc exec has the same types of feelings associated with it. The long days spent reading over countless directorship applications are ones that seemed to last forever… and I certainly won't miss the feeling of logging onto my engmail only to find 30 new messages have popped up that day. But, for everything that I won't miss about being EngSoc prez, there's another 10 things that I will.

It's been a wild ride, with lots of ups and downs. Thank you to all of you who made it so much fun for us. EngSoc is made up of all of you and it's you, not just the five people who are in the office all the time, who make it what it is. And, the new exec is certainly going to do a great job. They're all excited and they're totally qualified for whatever the next 16 months hold for them… I have so much faith in the good things they'll do for the Society.

Thank you to Mark, Greg, Chris, and Adam for experiencing all of this with me. Thank you to Mary for knowing more about EngSoc than all of the students combined. Thank you to Amanda, Erica, Patt, Cat, and Chris for stepping up to the plate and wanting to take over to keep things moving along.

Have fun everyone!

Lo, There Shall Be An Ending!

ADAM NEALE
VP INTERNAL

Wow, the term is starting to wind down, and what a way to do it. The weather is beautiful, the birds are singing, and EngSoc is partying down! I'm sure that everyone saw all of the election material around the Engineering building the past couple of weeks, and were all very excited to go out and flex some of their democratic muscles by going out to vote. My personal favourite is doing lunges. I feel that the gluts, and the hams are two of the body's most democratic muscles. The winners of the election, and new EngSoc executive were announced at TalEng the night of the election, and more can be read about them in this very issue of the IW in their very own columns. The winners of the election are: President – Amanda Hoff, VP External – Erica Waugh, VP Education – Patt Gillis, VP Internal – Cat Hay, VP Finance – Chris Jamieson, and WEEF Director – Alex James. A big congratulations goes out to all of the candidates that ran for positions. There were a lot of very tight races between some very qualified individuals, and I know that these 6 will do an amazing job over the next 16 months.

As mentioned early, TalEng took place the night of the election. Let me tell you, TalEng was a gong show. It was absolutely amazing. There were so many great acts ranging from some crazy amazing whistling, to the wicked awesome synchronized dancing styles of OK GO, to the off the hook rocking out of Shoobs and his Toe Tappin' Seven. Thank you very much to Alex and Chris for organizing the event, and Nick for working the stage and sound throughout the night!

Be sure to come out to EngSoc meeting #6 on Wednesday March 28th in POETS @ 5:30pm for the Potluck dinner. We'll be taking the EngSoc family photo that night, so in addition to your favourite dish, be sure to bring all of those beautiful smiles. And if you were a director this term, then come on out to the end of term directors meeting @ 5:00pm for your final debriefing and to start the celebrations a little early.

Finally, since this is my last executive report of my 16-month term as VP Internal, I would like to say thank you to everyone that I have had the opportunity to work with during my time in office. It has been a lot of fun, and truly a life altering experience. I feel as though I have gotten to know so many different people, and share in so many different experiences, and even though there were times when I might of complained about the work load of the position in addition to school work, I really do feel lucky and honoured to have had the chance to serve the engineering society over the past 16 months. So once again, thanks to all of you, it has been a wonderful ride, and I can only hope that the incoming executive will enjoy their experiences and grow together as much as the outgoing executive had been blessed with the opportunity to do over the past 16 months. Thank you.

X-cuse Me?!?

GREG FITZGERALD
VP EXTERNAL

Since your eager, new VPX conveyed all the latest, relevant information to you from the land of external in her first exec article, I'll focus this one on what really matters: Our triumphant victory over shrink-gun equipped UofT engineers on March 1st, 2007.

UofT first took aim at our beloved mascot, The Tool, seen shrunken inside its 7ft case.

It was an unsuspecting attack. Waterloo Engineering was celebrating its 50th anniversary at the Royal York, the one safe-hold left within the evil Torontonian fortress. Long story short- the Tool Bearers quickly engineered a re-big-ulator ray, returning our mascot to its former glory, whilst the bewildered UofT engineers high-tailed it back to their layer.

Okay, so that was possibly the geekiest VPX article I've ever written, and to those of you who actually read my article I'd like to thank you for sticking it out for the last 16 months. I've had a lot of fun as your VP-External, learned even more and have been amazed time and time again by the talent of our directors and student volunteers.

To the rest of the outgoing exec – you guys rock. You're the man, and not the oppressive man, like, the man that "gets you down". You're the man in the way that early '90s rappers of the likes of Vanilla Ice would have said it. You held the engineering society together, were awesome to work with, and I look forward to many more DYF's in the future (you know what I mean).

To the new exec – have fun! New positions are always fun! I know you'll do a great job, and look forward to seeing what will become of the engineering society over the next 16 months.

Finally, to the new VP-External, Ms. Erica Waugh - I think you just brought X'y back. Have an X-tremely X-citing time as VPX. There's no X-caping now, and now at the end of 16 months as X-VPX, I can finally handover this X-alted position. Good luck!

The shrunken tool in its seven foot case.

Ode to B-Soc

CHRIS OLEKAS
VP FINANCE

Well, boys and girls - not only is this my final exec report, this is also my final article that I will write while being a member of the Engineering 'B' Society. You see, the way ECE works is that they boot you off to the other society in between your third and fourth year. I had a lot of fun this term being CRO assistant and running around with all the candidates and presenting them to classes. And on that note I'm glad of all the people who ran and would like to congratulate all the winners. And in reality we're all winners because we go to one of the best Engineering schools in Canada. Enough of the sappy stuff. Some of the things that should be coming out soon (now that I have basically no more labs and projects left) are socks and boxers. You know, the socks and boxers I mentioned waaaaaaaay back. We have the socks and boxers, and the design, and the price. All we need is about a dozen people who would like to order them. Both will be priced around $10 each. With respect to making cheques for directorship expenditures, all expense statements must be in by this Friday if you want your cheque at any reasonable time after that. As well, if you've received EngSoc donations and have yet to collect, please email me as soon as possible and we'll figure things out. Now onto the more ridiculous side of my article, just the other day I watched the film "300". This film which was based off a graphic novel which was based off a film recounts the tale of how 300 Spartan soldiers defended themselves against Xerxes' Persian forces. The movie itself had amazing bullet time scenes where you could see the Spartan's stabbing and cutting off peoples legs however there was a political component as well. My synopsis - fight scenes good, political scenes bad. Finally, I would like to wish everyone on B-Soc good luck especially with the new exec, and I would like to say thank you to all my directors as well as all the directors who have put on so many excellent events this term. I'm going to miss you all.

It's Been a Wild and Crazy Ride

MARK TRUCHANOWICZ
VP EDUCATION

Well the time has come, this is my final executive report as VP-Education. It has definitely been one crazy and wild ride over the past 16 months. Regardless, I've still got some news to report.

Thanks to everyone who participated in the Debt Load Surveys this term. The information you all provided is greatly appreciated by the Dean and the Faculty. The Debt Load Surveys are our way to speak up about our financial situations. So if you didn't get a chance to fill one out this term you'll get the chance again next time you're on stream during the Summer or Winter. That being said, be sure to check out the results on page 8.

One more item of business, I'm sure many of you have gotten your work report back by now. So this is just a final call out to those of you obtained a grade of Outstanding. If you'd like to submit your report to the EngSoc Work Term Repository feel free to remove any personal information and forward it on to our Webmasters who'll be more than happy to include it. It's a great resource for first years so everyone's help is greatly appreciated.

Latly, I've got to thank every Director I've had the pleasure of working with over my term. All of you were incredible and I hope that you'll apply for Directorships again under the new VP Education.

On that note, as I'm sure most of you have heard, I'd like to congratulate Patt Gillis from 3A Civil who will be your new VP-Education for the next 16 months. I'm sure he'll do a fantastic job. I'd also like to personally thank both Patt Gillis and Ari Taub for putting together solid campaigns throughout this election.

Well that's all that left this term, finals are just around the bend and the term will be over before you know it. Best of luck to everyone on finals and I hope all those going on co-op have a great term and congrats to all the new grads. I'm sure I'll see you all again, and I definitely won't forget the time I've spent on B-Soc over these four years as I switch over to A-Soc this Summer.

Engineering Society Executive Elect Reports

First of Many

AMANDA HOFF
PRESIDENT ELECT

So I've just realized that I'd better get used to writing these things, since there are many, many more to come... Well, here goes my first attempt at writing an Exec Report:

First of all, thanks so much to everyone who came out to vote in the elections this term! It was amazing to have such a fantastic response from you guys.

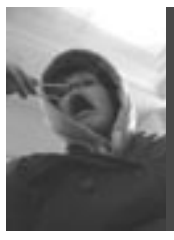
I'm super-excited about becoming your new EngSoc President! Nobody can say for certain what the next 16 months has in store for us, but I'm sure it will be quite the adventure, and I can't wait to tackle it with you all!

I've only got one thing to report at the moment: by the time this is published, we will hopefully have directorship applications up online at www.engsoc.uwaterloo.ca/www, so please look over the list and don't be shy, just apply, apply, apply! We're going to need a fantastic group of directors to keep up the high calibre of events and services EngSoc currently offers, and to help us make things even better. I know you guys can do it, we just need those applications!

If you have any questions about directorships, our goals as your new Exec, or EngSoc in general, or if you have ideas of things you'd like to see from us as your new Exec, send me an e-mail and I'll do my best to help you out!

I'd like to end this off with a shout out to our fantastic outgoing Exec, Jen, Greg, Adam, Mark, and Chris. Thanks, you guys have done a fantastic job, and I hope to make you all proud!

Xstatic



ERICA WAUGH
VP EXTERNAL ELECT

Looks like I'm the *new* VPEX! Thank you so much to everyone who came out to vote. I am so thankful for this opportunity; hopefully I won't disappoint you guys. There's not a whole lot to report at the moment, the term is coming to a close (AHH!) and events are slowing down. The CFES Spring Mail-out should be falling into our mailbox in the next few weeks; this package includes letters from the newly appointed exec as well as reports on the events that the federation will be running over the course of the year. Watch for an email on this! In more local-ish news, ESSCO is looking for volunteers for 'Physics and Engineering Outreach Day at Canada's Wonderland' on May 11th, 2007. Spend the day teaching students about the physics behind their favourite rides, for more info visit www.essco.ca. Finally, in REALLY local news, EngSoc is running a Head Shave for the Canadian Cancer society. Visit the table in the CPH foyer from March 19-March 30 to donate, get a pledge sheet, or to learn more about the event. This event has been very successful in past terms, this year's goal is $50000. Please come out to the CPH foyer to show your support! If you guys have any questions about anything, or you just want to chat about how much you wish you were outside when it's 10 degrees and sunny instead of in the WEEF lab catching up on homework…drop me a line erwaugh@engmail. Thanks again to everyone who came out to vote and I'm really looking forward to working with you guys for the next 16 months! If you are interested in attending a week long, complementery education (CE) course in the summer hosted this year by the University of Manitoba, in addition to international CE courses in Europe, please visit ce.cfes.ca. Applications are due April 30.

Hay There

CAT HAY
VP INTERNAL ELECT

First off, thank you to everyone who voted for me. I'm so excited to be your new VP-Internal!

My main goal is to get more students involved and excited about EngSoc. When it comes down to it, I'm not expecting us to have 1000 students out at every event. But if you're not coming out to one of our events, I want it to be because you're not interested in that event, not because you didn't know about it or didn't feel welcome.

One of the most obvious ways we can do this is to use more out-of-the-box advertising ideas. We've got hand painted posters, the event-a-tron, walking billboards, class visits, the Iron Warrior, you name it. I also want to implement a giant weekly calendar outside POETS so you can keep track of which events are coming up right now!

I really want to use our Class Rep Advisors to meet with students from each class outside of the regular EngSoc meetings and find out where your class is struggling and what we can do as the Engineering Society to help. I see this being more useful for first and second year students, so third and fourth years I'll be looking at you to be mentors.

Since we will have a ton of new frosh coming in the fall, I would love to see us visiting classes in the second or third week of the term to explain what the Engineering Society actually is and how they can get involved. Let's get rid of these misconceptions early on so students can make informed decisions about how they want to get involved at UW.

I also see a lot of potential in cross-promoting events to increase visibility. Let's get our Jazz Band or Dancineers out at the intermission for EngPlay, semi formal, or EWB events. Similarly, let's work with the Architecture executive to get them more involved in our events and make it easier for us to go to theirs.

And finally… directorships - the bread and butter of our Engineering Society! This is an awesome way to see how EngSoc really works and put your ideas into action. There are tons of cool director positions, and applications will be opening up soon. I really want to reiterate that no experience is required - we can always match you up with someone who's done it before. So stay tuned for more info about how to get involved as a director in the fall term!

I'm looking forward to an awesome 16 months as your VP-Internal! I would love to hear any ideas that you have, so please stop me in the halls or drop me an e-mail and introduce yourself.

Oh Damn, What Did I Get Myself Into?

CHRIS JAMIESON
VP FINANCE ELECT

Just kidding.

First and foremost I want to thank you all for selecting me as you next VP Finance. I would also like to extend my congratulations to the other successful candidates. I look forward to working with each one of you in the following 16 months. I know that as a team we can accomplish amazing things.

I would also like to congratulate all of the other candidates on a hard fought campaign. I truly believe that all were qualified and all would have done a great job.

Now on to business, I need directors! As always a number of Novelties

See "VP Finance", Page 8

VP Finance Elect

Continued from Page 7

Directors will be required in the up coming term. A Novelties Director is responsible for the day to day operation of the Novelties shop, a commitment which is usually a lunch time or two a week. Next up I will be looking to hire a couple Finance Directors. This term the Finance Directors will be working with me to both complete the Novelties Point of Sale system and develop the online ordering system. This position requires some programming and web development experience and a varying time commitment.

If you are interested in any of these opportunities please apply online by following the link at http://www.engsoc.uwaterloo.ca/www and don't hesitate to seek me out and talk to me about my plans.

VP Ed (elect)

PAT GILLIS
VP EDUCATION ELECT

We can be your EngSoc Exec (sing to the tune of Hero by Enrique Iglesias). First of all I'd like to thank everyone for coming out and voting last Thursday! There was a great turnout and were all really excited to be your next BSoc exec. I'd also like to recognize my opponent Ari Taub. He did a great job running and definitely made sure it was a tight race. In the past Ari has done a ton for EngSoc and the engineering students in general and I look forward to working with him to continue his efforts.

I'm looking forward to the next 16 months of representing you. As this term is just winding down and we gear up for those final exams we all love there won't be too much coming from my desk before we're off on co-op, but I look forward to corrupting all those young impressionable frosh with all of you during frosh week.

I've already been in contact with the good people over at Needles Hall regarding the new Freedom of Information and Privacy Protection Act (FIPPA) and I look forward to continue to work with them to get the word out to you regarding what this legislation means to us as students. Also over the next couple of weeks I look forward to spending some quality time with the current VP Ed that lovable Mark Truckanowicz to help with the transition and make sure nothing gets left behind.

Thanks again for everyone who came out and good luck on exams!

ENGINEERING SOCIETY

Did you know you can earn valuable P**5 points for volunteering time at the C&D? Email Mary Bland at mbland@engmail.uwaterloo.ca to schedule your shift.

WEEF Funding Decision and Good Bye!

MARIA ARSHAD
WEEF DIRECTOR

My last article as WEEF Director! I will surely miss writing these articles...

Firstly, I would like to present to you the WEEF Funding Decision of Winter 2007. The Board of Directors met last Thursday. Overall $80,000 was given out. WEEF funding Council had a very hard decision to make since the amount asked for was more than double ($178,982.16 to be exact). Points such as benefit to larger population of undergraduate students as well as immediate need of the funds and long term gain were kept in mind. Funding council is fond of supporting new initiatives. Everyone who submitted a proposal should have received an e-mail from me with the funding decision. If you have any questions or concerns, please send an e-mail to weef@engmail.

WEEF AGM was on Thursday March 22nd. It went well; however, I wish that more people had come to attend.

Congratulations are due to Alex James! He will be your new WEEF Director! I am confident that he will do a great job! Thanks to everyone who came out and voted.

Some thank-yous are needed. I would like to thank Mathieu Poirier for helping me when ever I needed help for anything from refunds to funding council meetings. You are awesome Matt. I would like to thank Alex James for helping me with refunds, posters and alumni stuff, you are awesome as well. I want to thank Jason Pang for his help and excitement about WEEF. Thanks for dropping by the WEEF office, Jason, during late hours of the day when I needed support. I would like to thank Brad Murray, you have been awesome. I want to thank Amanda Hoff and Laura Werner, you both rock! I would also like to thank Kristi, Toni, Theresa, Candy, and Katie for helping me with refunds.

I would like to thank everyone who supports WEEF and has donated to WEEF. Without you, we wouldn't have WEEF. Thanks for making my 16 months of WEEF Directorship truly amazing, I feel very proud to have taken care of your Endowment Foundation. I would like to thank everyone who ratified me and allowed me to be WEEF director. I would like to thank Mike Spendlove for providing me advice whenever I needed it. I would like to thank the Board of Directors for supporting me. I would like to thank the WEEF funding council for showing up to the meetings and showing their support.

I urge everyone to keep supporting WEEF. It is your Endowment Foundation and it is your responsibility to ensure that it is benefiting your education.

For the last time, signing off...
Maria Arshad
www.weef.uwaterloo.ca

#	Proposal	Requested	Allocated
	Architecture		
1	CANON ELURA 100 miniDV CAMCORDER	$3,164.64	$3,164.64
2	RotaTrim Professional Rotary Trimmer – model M42	$355.68	$355.68
3	Safety Gear & Tools –Grand House	$2,344.39	$2,000.00
	Chemical Engineering		
4	Incubated Orbital Shaker for Undergraduate Biotech Labs	$10,000.00	$3,000.00
5	New Data Aquisition System For The Chemical Engineering Process Control Laboratory (CHE-524)	$4,321.50	$3,699.00
6	The Hyperbrew - Bringing Professional Quality to the Home Brewer	$827.26	$443.03
7	Voltage Sources for Undergraduate Labs	$5,400.00	$3,600.00
	Civil Engineering		
8	Erodible bed flume for river research	$1,000.00	$1,000.00
	Electrical and Computer Engineering		
9	E&CE'30'Series 'Projects in Semiconductors and Electronic Circuits'	$10,700.00	$5,500.00
10	Data Projector	$1,573.20	$0.00
11	Digital Control Lab - Ball & Beam Apparatus	$11,898.36	$5,949.18
12	ECE 4th year room computers	$2,076.00	$1,000.00
13	ECE 380 – Handyscope for the Analog Control Systems Lab	$8,478.72	$8,478.72
14	E&CE Nexus Monitor & Computer Upgrade for ECE	$21,420.00	$0.00
15	Photographic light box -- BOOTH DIGITAL PHOTO xx INCH BOX	$143.51	$0.00
16	Larger Hard Drives for ECE File Server Array	$3,000.00	$2,000.00
17	Air Core Solenoids for Elecromagnetic Labs	$1,256.96	$1,256.96
	Mechanical Engineering		
18	Special Needs Design Project Funding	$6,000.00	$800.00
19	Computer & Software Upgrades for 2 Instron Materials Tensile Testers	$10,700.00	$0.00
20	Fatigue Testing Machine	$8,000.00	$4,000.00
31	Manual Wheelchair Propulsion Proposal	$1,440.00	$415.00
	Systems Design Engineering		
21	3B Design Project Funding	$1,200.00	$0.00
22	Fourth Year Systems Design Project – Tennis Ball Machine	$607.57	$207.57
23	PCI DAQ Cards for Control Systems Undergrad Teaching Lab	$5,750.00	$5,750.00
24	~~SyDe362 Workshop Group Projects~~	$0.00	$0.00
25	SyDe461 & 462 Workshop Group Projects	$2,000.00	$0.00
	Department Total	**$123,657.79**	**$52,619.78**
#	**Proposal**	**Requested**	**Allocated**
26	Autonomous Racing Challenge 2007	$1,580.00	$573.00
27	Autonomously Guided Robot—3B Mechanical Robot Racing Entry	$616.87	$300.00
28	Co-operative Controls in Network Robotics	$4,170.00	$1,141.20
29	Engineers Without Borders - corporate package printing costs.	$250.00	$0.00
30	Final components for the Pan and Tilt mechanism	$4,150.00	$2,500.00
32	Midnight Sun - W2007 WEEF Proposal	$10,000.00	$5,000.00
33	Mini Sumo Robot Funding	$65.00	$65.00
34	Next-Generation: Cycling Across Canada to Promote Waterloo Engineering	$3,839.00	$1,590.00
35	SUMO Competition Robots parts funding request	$100.00	$65.00
36	UW Robotics Team Winter 2007 WEEF Proposal	$4,395.00	$2,100.00
37	UWAFT WEEF Proposal	$5,692.50	$3,706.02
38	UWFSAE Safety Equipment Upgrade	$7,000.00	$4,500.00
39	UWIHDA Documentary Series & Human Rights Conference	$500.00	$0.00
40	Waterloo Off Road Mini Baja Team	$3,310.00	$2,000.00
41	Waterloo911! Concrete Toboggan Proposal (GNCTR 2008)	$2,925.00	$1,000.00
42	waterlooSPEED: Soft Platform for Express Engine Development	$6,731.00	$2,840.00
	Student Teams Total	**$55,324.37**	**$27,380.22**
	Grand Total	**$178,982.16**	**$80,000.00**

Engineering Co-op Student Debt-Load Survey Winter 2007

1. Does your family support you financially? (771 responses)
   Yes 56%
   No 44%

2. Average Cost of Living for a 4 month school term (769 responses)
   $8528

3. Average Cost of Living for a 4 month work term (692 responses)
   $3722

4. Have you applied for local aid or other bursaries to pay for school? (770 responses)
   Yes 42%
   No 46%
   Not Yet 13%

5. Have you applied for OSAP? (773 responses)
   Yes, and received 31%
   Yes, and denied 24%
   No 13%

6. Do you have a loan for academic purposes? (771 responses)
   Yes 38%
   No 49%
   Not Yet 13%

6a. How much is the student loan? (359 responses)
   $1-$499 9%
   $500-$999 2%
   $1000-$1999 6%
   $2000-$4999 19%
   $5000-$9999 32%
   $10000+ 31%

7. Have the differential tuition increases caused you hardship (770 responses)
   Yes 44%
   No 27%
   Not Yet 28%

8. How much debt do you expect to be in by graduation? (753 responses)
   No debt 26%
   Less than $999 6%
   $1000-$4999 13%
   $5000-$9999 14%
   $10000-$19999 22%
   $20000+ 20%

9. Do you live at home while at school? (775 responses)
   Usually 8%
   Used to 2%
   No 89%

10. Have you lived at home while on work term? (770 responses)
   Always 16%
   Sometimes 71%
   Never 33%

11. Average of the weekly salary while on work term (670 responses)
   $622

the TIN SOLDIER

MAKING IMPRINT LOOK LIKE A REAL NEWSPAPER

VOLUME 10110 ISSUE 1010 | FEBUARY 10, 1010

What Will UW Add Next?
Page 011

Imprint Deathsquad Strikes Again
Page 110

Chameleon Statue Changes Colour Again

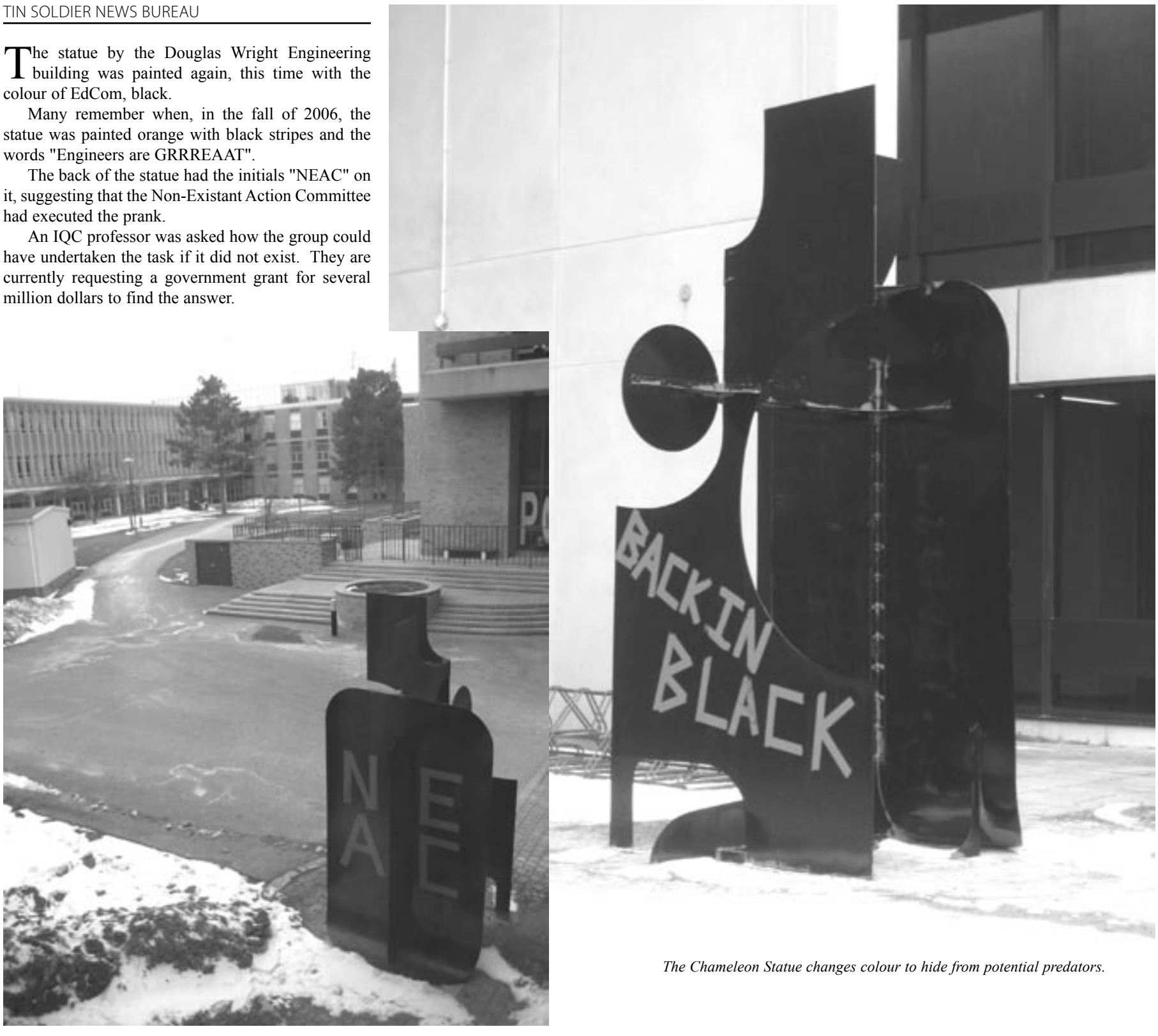
TIN SOLDIER NEWS BUREAU

The statue by the Douglas Wright Engineering building was painted again, this time with the colour of EdCom, black.

Many remember when, in the fall of 2006, the statue was painted orange with black stripes and the words "Engineers are GRRREAAT".

The back of the statue had the initials "NEAC" on it, suggesting that the Non-Existant Action Committee had executed the prank.

An IQC professor was asked how the group could have undertaken the task if it did not exist. They are currently requesting a government grant for several million dollars to find the answer.



The Chameleon Statue changes colour to hide from potential predators.

Job Mine Collapses, Hundreds Trapped, Many Feared Lost

ED TAN
4B COMPUTER

In the early hours of the morning, Job Mine collapsed trapping many students. Emergency workers and staff continue to work around the clock to try and reopen Job Mine. Experts estimate that over a hundred students are still trapped. If the mine had collapsed during peak hours, the number would have been much higher. Instead, thousands of students have been told to return later, citing technical problems.

The exact cause of the collapse is still unknown. The work conditions in the mines of Waterloo have been notoriously dangerous. This incident highlights the hazardous state of Waterloo's mining industry, which fell into disarray since the fall of the Student Union. This is not the first time that Job Mine has collapsed. Many students have voiced complaints but accidents continue to occur.

Counterpoint vs. Counterpoint

The Spirit of Why vs The Spirit of y_o

JOHN OLAVESON
4B CIVIL

Back in 1956, a man stumbled upon an open field just outside of a town called Waterloo. He came from a little place down the street known as Waterloo College. Upon seeing this empty plot of land, an image formed in his mind; an image of a different kind of school, a better kind of school. When he presented the idea to his colleagues, they asked him "Why?"

He answered, "Why not?"

And thus, the spirit of the University of Waterloo was infused upon that soil, was seeded into the land. "Why?" That whispered word can still be heard echoing throughout the halls of this school.

In the fifty years since the founding of this school, many people have asked "why". When Waterloo Lutheran University was asked to federate with the University of Waterloo, they asked "why?" The government and the community expected them to unite with the fledgling school. But no one would answer the question of "why." WLU was not simply satisfied with meeting expectations. The administrators of that school wanted to exceed expectations. And they have.

The Mathies asked the question of "why." Back in the 60s, mathematics was a part of the Faculty of Arts. Engineering and Science was a separate faculty. The Mathies asked, "Why do we have to be here if they don't?" The inevitable counter-question was delivered by the Artsies; "Why do you want to go? We get so lonely." But alas, the Mathies were not to be swayed from their crusade to find an answer to "why". In January of 1967, the Faculty of Mathematics was opened and within a year they had a building of their own far away from everyone else, MC.

The most humbling display of school spirit in recent times was put forth by the School of Architecture. When they were moved from the Faculty of Environmental Sciences to the Faculty of Engineering, they asked "Why? Why do we have to associate ourselves with you?" And in the spirit of why, they moved themselves to Cambridge, to their own campus, because no one could answer their question of "why."

"Why" has been an integral part of this school since its inception. I ask, where would we be without it? One little word to lift a school's spirit.

EDDIE TORRE
3B ELECTRICAL

By now, you have heard the George Bernard Shaw quote to justify the university's motto for its fiftieth anniversary about two thousand and thirty four times (+/- 4%). However, the Tin Soldier has uncovered the real meaning behind "The Spirit of 'Why Not'". Did you really think that the University of Waterloo, the engineering epicenter of Canada, would really base its semicentennial motto on something an artsy said when this school was still a farmer's field? Although he was a literary genius, Shaw died from "injuries incurred by falling from a ladder while he was attempting to prune a tree". No, a person who disregarded safety standards – although they might not have been invented yet – could not be the true inspiration for our celebrations.

But "standards" was the golden clue to the true meaning to the motto. Despite what you might read in newspapers, websites, pins, pens, and lamp post banners, Waterloo's true motto for the year is not "The Spirit of 'Why Not'" but "The Spirit of y_o" (Frosh: that's pronounced "wye naught"). That is, the administration does not need to inspire us with a quote stating the obvious. Engineering undergrads already have enough ambition to spare. The real purpose of the motto is to remind you that Waterloo sets *the standard output* for the next generation of professional engineers.

Every IRS, a new batch of fourth years are granted a coveted Iron Ring and eventually let loose upon this world. They don't have to go to DeVry to update their skills or spend months applying to different jobs. They have a clear direction of where they want to go and what they want to accomplish, usually sifting through several job offers before even receiving their degree. Another annual event is Orientation Week, when the brightest young minds within (and beyond) our borders gather and get ready to go through the great Transfer Function that will turn them, too, into the standard output over the next five years. These students aren't upset that they didn't get into their first choice university. In fact, most of them turned down scholarships at other institutions because they know what Waterloo has to offer is worth much more than a few thousand dollars.

If incoming high school graduates are an input signal, UW Engineering is the optimal control system. What comes out of the other side is the standard output. Other universities examine the output and sometimes peak into the black box to figure out how Waterloo does it but they can never eliminate the steady state error from their designs to mimic our success. For instance, some other engineering programs think that they offer co-op. The parasitics of their components are evident, however, when they simply keep a record of a student's transcript while the poor kid is stuck in a first work term job for 12 months straight. If the student realizes at this point that they would have preferred a different discipline, he or she has already invested too much time in a program to turn back. Rarely, the initial overshoot of another university's response may temporarily exceed the standard output. In recent history, Guelph briefly eclipsed Waterloo in the Number 1 spot of the Maclean's ranking. It was obvious that their design was inferior the next year however, as Guelph's oscillations died out and Waterloo was restored to its rightful place at the top.

Now you know the truth. So the next time you hear somebody start with "Some people see things…" if you think they can handle it, let them in on the truth about the engineering dimension of the motto for the school that re-invented engineering education.

University of Waterloo has Midlife Crisis

PITA THE FIVE
3B PLUMMING

As the institution turned 50, Waterloo began to look back on its short life and tried to recapture its youth. This led to it acquiring a fast, new car (Formula SAE) and going down hills in a concrete toboggan.

Psychologists are trying to calm it down for fear that this burst of energy may cause it to make drastic breakthroughs in research, making other Canadian post-secondary institutions seem insignificant. The process has already begun as the Faculty of Engineering has launched its Vision 2010 plan and made preparations for the erection of several new buildings.

It is also engaging in promiscuous behaviour with professionals in the field, resulting in the conception of a new child which is expected in September 2007. Its full name will be Management Engineering. The proud expecting mother, the Department of Management Science, is ManEnging very well.

What Will UW Add Next?

DAN ARNOTT AND FARAZ SYED
3B ENVIRONMENTAL AND 3B CHEMICAL

Waterloo is known worldwide as an innovator in a variety of engineering fields. As a result, we always seem to be adding more disciplines to excel in – Nanotech and Management Engineering, for example. But Waterloo is also known for not knowing when to stop, so we can probably expect a plethora of new disciplines to crop up any day. Here's a look at what might be on the horizon.

ARTS & CRAFTS ENGINEERING

This new interdisciplinary science combines chemical engineering (paint, glue, markers), structural engineering (popsicle sticks, tape, cardboard), mechanical engineering (scissors), and systems design engineering (glitter). Frosh will take courses in folding, gluing, taping and crayon drafting techniques before moving on to more advanced projects. Technical electives are expected to include Basket Weaving, Tie-Dye, Knitting, Origami, and Needlepoint. WHMIS training will be especially important so that the frosh don't eat the paste.

FAST FOOD ENGINEERING

Once the most popular option in Chemical Engineering, Fast Food Engineering is destined to become Waterloo's next brainchild. The most popular and relevant courses will be Burger Modelling and Apple Pie Thermodynamics. Students should have no problem finding employment anywhere in the world, as demand for this sort of engineering is worldwide, although many graduates of Guelph and Lakehead engineering are already employed in the fast food field. Students in the program will likely be nicknamed 'McEngineers' by their peers, but McMaster Engineering is not expected to take too kindly to this.

BIOENGINEERING/CLASSICAL STUDIES DOUBLE DEGREE

In an unprecedented collaboration between the faculties of Arts and Engineering, the Bioengineering/Classical studies programs will examine some of the scientific aspects of myth and legend. Students will work chiefly on design projects, re-creating such mythical creatures as Medusa (woman + snakes), the Minotaur (bull + man), Centaurs (horse + man), Pegasus (horse + wings), and Cerberus (multi-headed dog). This program will make use of cutting-edge technology, sort of like an engineering degree, but the mythical beasts will serve no practical purpose, just like a Classical Studies degree.

REVERSE ENGINEERING

In another stunning example of groundbreaking innovation, Waterloo introduces the country's first Reverse Engineering program. Students will start in their 4B term with a design project relating to their area of interest, and will take increasingly more general and less practical courses. They will gain work experience in a series of increasingly menial and low-paying jobs, and by the end, they won't know how to differentiate x squared and they will have successfully forgotten Coulomb's Laws. This program is expected to be very popular since students will enter bitter, jaded and world-weary, and will leave wide-eyed and full of wonder and joy.

Math and Engineering to Merge

"Death and Destruction" to Follow

JOE "THE INSIDER" COLLINS
1B SOFTWARE

UW Administration is set to announce on Sunday a plan to merge the Faculty of Mathematics with the Faculty of Engineering, creating the new Faculty of Mathematical Engineering.

The move, according to a document leaked to The Tin Soldier earlier this week, is intended to bring more harmony to the school's two world-renowned faculties.

"There is a lot of overlap between the two faculties," says one professor who teaches both math and engineering courses. "There will be great benefits to having all of the courses brought closer together."

Some students, however, disagree with the idea.

"Should the faculties merge, there is going to be an all-out student war causing massive amounts of death and destruction," says engineering student Harout Manougian. "There is a good chance that many of us will not survive."

There are also rumours going around the engineering faculty that the softies are attempting to stop the move in order to prevent the loss of their two-faculty bragging rights. As a SoftEng student myself, I can confirm that we are trying to stop the move, however it is because we would be considered traitors to both sides in the event that a war does break out (as Manougian predicts will happen), and we would therefore be the first to go.

Now with this move, many students will be wondering what will be happening to the student societies MathSoc and EngSoc. Peter Simonyi, who is familiar with the runnings of both societies, suggests keeping both of them in place.

"It now gives all students in the new faculty a pair of Socs," says Simonyi. "This will answer the question about what happened to the ones lost behind the dryer."

After I reminded him that his puns continue to leave me high and dry, Simonyi added that "having the two societies would lead to the creation of many new ideas that could benefit everyone in the new faculty."

Ten CECS Tips for First Timers

CANDICE B. RIEL
1B NANOTECHNOLOGY

The wide world of CECS is something that all engineering undergrads should engage in to make their university experience as fulfilling as possible. Here are some tips to help make CECS more enjoyable.

1. Don't be shy. CECS is there to help you develop into an adult. The skills that you will learn in these years will benefit you for the rest of your life.

2. Educate yourself about CECS. Or else, you might find that postings come and go before you put your resume together. At the beginning of the term, ask the helpful people at the information booth for a calendar which will have all the important deadlines. This visit can also remind you what CECS was like if you're coming off a work term far away from other students.

3. Oral hygiene is a requirement for CECS. No interviewer or co-op coordinator is going to think well of a student with bad breath. Make sure to brush your teeth and chew some gum before you enter.

4. Don't restrict yourself only to CECS. Going beyond JobMine and applying to companies' websites may help to broaden your horizons. RIM jobs are an excellent example.

5. Feel free to talk about CECS with your supervisor. Assuring your boss about how great CECS is will keep the company coming back for more in the next round of interviews.

6. Don't worry about continuous phase. The initial phase of CECS is meant to give you a taste of what's available. Once you have decided what you really like and what turns you off, there is a period of continuous CECS to find a match. I fail to see where the downside is.

7. CECS in another country is an amazing experience. Don't be shy about submitting your resume to Hawaii or Sweden. There will be seminars for you to attend to help you along the process and keep you on top of things.

8. Try new things. After a work term or two in a certain field, you will get pigeon-holed into those types of jobs. Don't let this happen. Make different versions of your resume to appeal to different types of jobs. This way you can hit all the major areas.

9. Don't tell potential Waterloo applicants that you pay for CECS. Just like you were tricked into paying an extra seventh of your tuition, because of this despicable practice at UW, others must also not know this secret until they get their first bill. If word got out, it would not be beneficial for UW's reputation.

10. If you abstain from CECS, you are not alone. Many students think that finding a job by themselves is equally gratifying and can revolve around your own schedule. Since you're paying for it anyway, though, you might as well have someone else do the work for you.

.prn Is Cheap

LONELY MATHIE
1B PURE MATH

Do you wish you could make .pdf files but don't want to hand over the measly $12 to the CHIP in the MC building, which can provide you with this very useful software at a drastic student discount? Me, too.

Thank goodness for .prn. The next time you want your Word file to turn into a sleek .pdf, follow these steps.

1. Go to one of the many Engineering Computing labs like Fulcrum, Wheel, Wedge, and, my favourite, Helix.

2. Select File > Print.

3. Choose any regular printer but make sure you check "Print to File" in the dialogue box.

4. Instead of actually printing the document, a box will pop up asking where you want to save your new file. Pick a spot and remember to save it as a .prn. You are not charged for doing this since you haven't actually printed anything.

5. Open GSView and open the document you just created.

6. Select File > Convert, and choose the pdfwrite command.

7. Save the .pdf file and ta da, you cheated the system.

If anyone tries to tell you that .prn is immoral, tell them that you're a student and can't afford the real thing.

Pee Wee Herman loves using .prn

Imprint Circulation Mafia Strikes Again

TIN SOLDIER NEWS BUREAU

By the time you read this I will already be gone – just another brick in the wall. I must tell you what I have witnessed, before they find me – it's only a matter of time before they do. I regret that I cannot reveal my true identity for the safety of my friends.

'Who are they?' you ask, presumably scratching your newly shaved head. They, my friends, are the scourge of the underworld – the Imprint Circulation Mafia, the demon army of a devil king who rules from his underworld throne. Their dominance is an unquestioned fact and sadly, an unspoken rule. Their origins are a mystery shrouded in the layers of time. According to a popular myth, they evolved from the devil editor's droppings – the unholy brood of this dark father. Another version of this myth, more sensational and less accepted, says they were once Engineering angels pure of heart. The devil king sent his concubines to seduce the unwitting darlings and lo, they gave in to the dark side.

It was a dark and stormy night in the middle of March. The sensible stayed indoors, but my foolish friends and I chose to walk to the Engineering buildings. Our youthful arrogance blinded us to the signs of death around us.

We worked on our labs late into the night. The heavy environment and stuffy air were taking a toll on us. I needed a smoke, badly. And some chips.

"Wait, I'll come with you." Jane's (not her real name) soft voice drew my attention, perhaps a bit too quickly. We wore our jackets and left the buildings together. It was cold outside and she pressed against me for warmth. I felt a strange nervousness that was at the same time both pleasant and unpleasant – I knew I had to act, but I kept holding myself back. I cursed myself all the way to the shops and back.

A scene of the brutal carnage

There was an odd silence as we entered the buildings. I could make out shattered light fixtures on the ground. Dim moonlight lit the halls, giving them an eerie feel. Dark whispering figures stood near the newspaper racks. I could see several issues of *The Iron Warrior*, the best fucking newspaper in the world, strewn on the ground. Some were torn to shreds. Jane drew a sharp breath. They had spotted us.

They must have slithered into the halls while we were away. As soon as I saw copies of our newspaper vandalized, I knew who they were: the Imprint Circulation Mafia. Jealousy of our superior content and loyal readership fueled their hatred for us. They would report with glee to their king that they had sabotaged yet another issue of *The Iron Warrior*. Somebody had to stop them, and that somebody had to be me.

"Run," I whispered to Jane. She hesitated at first, but ran out through the entrance. The Mafia didn't waste a moment and swooped down on me. I struggled and managed to knock out two of the assholes before I was too weak to fight. Calculus had served me well in calculating the optimal hit points during the fight, but I was never very good at it. Even as I lay helpless on the floor the fiends continued to kick me. They showed me no mercy, and I did not expect them to. I'm sure nothing would make them happier than to present my corpse on a stick to their dark master. Just then I heard a shout. The voice was familiar. It was Jake (not his real name), my lab partner, and he was trying to save me.

"Run, you fool!" I could barely whisper, and Jake dove into the group, throwing punches left and right. I had no idea he was such a good fighter, but soon it was evident that even he was no match for the Imprint death squads. He would be dead soon and I had to escape before that happened, or his death would be in vain. I had to tell the world what had happened. I can't remember exactly how I managed to escape, but I did. I vaguely remember something about hiding in the C&D. I was safe for the time being.

Brave front page hanging on for dear life

I knew I didn't have much time before they came after me, so I wrote this last entry as quickly as I could. Maybe you'll learn something from my story, or maybe you'll just shake your head in disbelief and walk away. I only offer the truth. Refuse it, and the story ends, you wake up in your bed and believe whatever you want to believe. Take it, and you stay in Wonderland and I show you how deep the rabbit-hole goes.

the Tin Tribunal

What did you have for lunch?

Tim Soldere, -3B Reverse Engineering

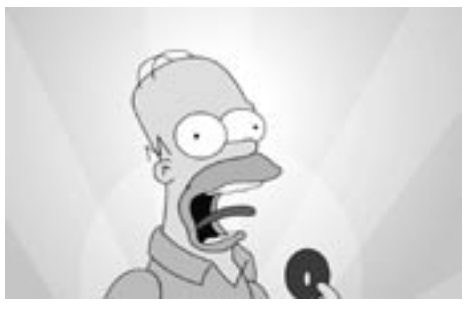
"The McMaster fireball... too bland"
The TOOL

"I took a bite out of crime"
Batman,
3A Criminology

"HIISSSSSSSSSSSS"
Güstav,
1B Aerospace Engineering

"Mi'sa lunch was'a stolen"
Jar Jar Binks,
2B Peace and Conflict Studies

"The prof quotes section"
Imprint Circulation Mafia Boss



"Duff"
Homer Simpson,
4B Nuclear Systems

"Baguette and Ratatouille"
Napoleon Bonaparte,
3B FrenchStudies

"Liver"
Hannibal Lecter,
Kinesiology Alumni

Project Will Promote Waterloo Nation-Wide

Continued from Page 1

role as a leader in sustainable technology.

The project has been in the works since Benjamin Sanders and Eric Vieth imagined taking the opportunity to see their own country from coast-to-coast. The two are keen on the cycling part of the adventure, but that in itself is not an original challenge to take on. Several cycling enthusiasts complete the trek every year. In order to make the project even more worthwhile, and in the spirit of "why not?", they decided to add something innovative to it.

Having both completed exchange years in Europe, the two students look back at this and other tremendous opportunities that Waterloo Engineering gave them, and want to ensure that young Canadians across the country also get the chance. The Next-Generation project is an outreach project for high school students during which Benjamin and Eric will visit approximately 10,000 students across Canada, in order to show them what technology can do for them. Carrying with them a hydrogen fuel cell and a flexible solar panel as

Eric Vieth and Ben Sanders with Canadian astronaut Chris Hadfield.

power sources, they will use the energy to recharge their Blackberry devices, as well as a GPS unit. These 4 technologies will be interfaced with one another in order to provide 68 days of live Internet tracking on their fully interactive website.

The use of GPS tracking technology, and Internet blogging via Blackberry will allow students to become involved in the project, even before the team arrives at their school to show off the technology. This innovative program will also be integrated into the high-school curriculum, so that the students will be able to make connections between the exhibit, and the content that they have been learning in their classrooms. Additionally, in order to stimulate their creativity, the students will be presented with a design challenge in which they will compete for an out-of-this-world prize that will be awarded at the close of the tour.

More information about the project can be found on the website at www.next-generation.ca.

Apple Set for Summer Release of iPhone

ARA HASSERJIAN
3B MECHATRONICS

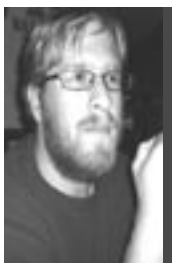
Apple's much anticipated entry into the cellular telephone market will arrive in the States this summer, and their product, named the iPhone, will likely be available here in Canada sometime soon after that with Rogers Wireless. Die-hard Apple fans will be pleased with the phone's slick and neat outward appearance that is a design element carried over from the iPod line of MP3 players. It has a host of fancy tricks and capabilities that set it apart from all the other "smart-phones" on the market today and these features are what you overhear most about when you listen in on a group of Apple-heads talking about this phone, as they scroll through the countless websites already dedicated to it on their Macbooks during class. In fact, Apple has applied for over 200 patents for the iPhone.

Nearly the entire front surface of the unit is an advanced sensitive touch screen that is used for all the input from the user – from punching in the number you wish to call, and sending emails over wireless networks, to scrolling through websites, zooming in on photos, and flipping through album covers as you select the next track you want to listen to on your trendy white headphones or through the on-board speaker. It features an on-board accelerometer to detect the orientation with which you are holding the phone, and it adjusts the image to match. The on-board proximity sensor can tell when you have put the phone to your ear, and it turns off the display when you do so, to save your batteries. A light sensor varies the display's brightness to the optimal level and there is also a 2.0 megapixel camera on the back side of the phone. Its most impressive feature is considered by many to be the platform; that is, running Mac OSX (albeit a modified version), and this is what enables the phone as such a powerful and usable tool for surfing the internet and e-mail, as well as for running music and photo applications. All this fun comes at an expense of $500 for the 4 gigabyte model, and $600 for the 8 gigabyte model, in U.S. funds, of course.

As far as the market is concerned, there is already much news surrounding the phone. People are questioning as to whether the announcement of the phone this early before its availability was intentional – it is certainly not a conventional marketing approach for Apple. And although the technology featured on the phone is ahead of the game today, many analysts suspect that Apple will have to make some adjustments in pricing and the available features (such as the memory, camera resolution, or VoIP capabilities) to truly be competitive in the disaster zone that is today's cell phone market. Apple may be counting on the niche market it has created with the widely popular iPod for an initial sales boom. According to some Wall Street analysts, Apple's profit margin with the current pricing is nearly 50% – very high, for an industry that sees margins that fall typically in the 20% to 35% range. We can expect to see pricing drop dramatically in early 2008.

In the background of all the marketing hype surrounding this new product launch, there was an aggressive law suit battle between Apple and Cisco Systems surrounding Apple's right to label and market the iPhone under that name. The trademark actually belongs to Linksys, a division of Cisco, which hasn't moved into the cellular telephone market, but has an IP Phone product under that name. They have reached an agreement where both companies are free to use the "iPhone" trademark on their products throughout the world. The lawsuit was dropped and Cisco and Apple will explore opportunities for interoperability in the areas of security, and consumer and enterprise communications. Other terms of the agreement are confidential.

TalEng: To Engineer Is Human, To Entertain Is Divine



DAN ARNOTT
3B ENVIORMENTAL

POETS was rocking pretty hard on the night of Thursday, March 22, 2007. TalEng directors Alex James and Chris Jamieson pulled together an excellent event, full of fun, music, pizza, whipped cream, BEvERages, and the occasional mishap.

The night was full of a variety of mostly musical acts. There were acoustic guitars (Fire Star, Dan, Steve). There were electric guitars (Phil Brandon & Dave Gerardi). There were even classical guitars (Timmy!). There were djembe drums (Neil Cavan). There was whistling (by who else? TalEng regular Jason Rubie). There was the piano/vocal duet of Brendan Rideout and Neil Rittenhouse from Tron, playing "two songs by men with last names Cohen". There was a fiddle. There were bagpipes, which can apparently be used to play the Star Wars theme (Noel McGregor). There was OK Go (seriously! They were there!). There was the Butch/Shooby/Jay band. And there were some very strong voices (Anna, Jen, Brendan, Toni).

There were also various "games" played throughout the night, to showcase the talents of people who may not have signed up. There was an impromptu harmonica playing contest, a sticking-your-face-in-a-bowl-of-whipped-cream and retrieving-things-with-your-mouth contest, and a crowd favourite, the cup-and-ball-attached-to-your-crotch contest. Winners received diminutive trophies.

GradComm 2008 was selling delicious pizza (they will continue to do so; please buy it; I want a cheap graduation), and a bowl was being passed around for donations to the Canadian Cancer Society (remember, we're funding cancer research, not cancer itself). Over one hundred dollars were raised, which of course resulted in a head-shaving. This time the victim was drummer Jay Shirtliff.

All things must pass, and the old EngSoc exec sang a killer rendition of a Spice Girls song before fading away into their twilight years. The new exec took the stage, and they performed a heart-rending version of "I Can Be Your EngSoc Exec" (to Enrique Iglesias's "Hero"). If they're as good at exec'ing as they are at singing, we're in for a great couple of terms.

Engineering Jazz Band Charity Gig

JEFF KAO
3B SYSTEMS DESIGN

The Engineering Jazz Band "With Respect to Time" played their final gig of the term on night of Friday March 23, with all proceeds going to the Regional Food Bank of Waterloo. The concert was held in the Great Hall of the Conrad Grebel College, and well attended, attracting more than a hundred of their devoted fans! The event itself was highly successful and raised more than $300 for the Regional Waterloo Food Bank, as well as an innumerable amount of non-perishable food items.

While the cause alone made this one of the "can't miss" events of the term, the artistic value of the concert itself further added to the audience's enjoyment of the evening. After a busy term full of weekly rehearsals and sectionals, WRTT had 14 excellent offerings (including their encore) to present to their fans. There was a dynamic range of repertoire, from Jazz classics such as "A Night in Tunisia", to crowd pleasers like the ABBA medley. Not only was it a pleasing auditory experience, but also a memorable visual one also, as the band sported their new black shirts. The uniforms containing the symbol 'dt' in reference to the band name "With Respect To Time" was also a hit.

The night got off to a great start with the classic "It Don't Mean A Thing (If It Ain't Got That Swing)", and the energy continued with each following piece. The MC of the evening, Matt Colautti (3B Tron) provided plenty of entertainment for the crowd. His jokes interspersed between the pieces certainly made the music sound even better in comparison! In fairness, however, both his excellent insights into each musical selection and his self-deprecating humour made it a light-hearted and enjoyable affair. At the end of the night, the fans were left wanting even more! Unfortunately, following the encore "The Chicken", Kate Ross (4B Physics) sadly announced that there were no more pieces left to play except Christmas music, at which point the eager crowd had no choice but to accept that the event was in fact over.

The concert was a great wrap-up to an excellent term for the band, building and improving yet again on a previously successful term. Since their inception in the Winter of 2005, the band has grown to a 23 member band with members from all departments and years.

The band thanks Mary Bland and the C&D for donating free beverages for the band members and concert goers. In addition, thanks is due to EngSoc, who assisted WRTT financially in the purchase of new heads for the drum set. The band thanks Ally Chan (3B Chem), the original founder of WRTT and chief organizer of the charity concert. Lastly, the band would like to thank their videographer Kristen Yee Loong (3B Syde), the groupies and roadies, and the fans for supporting their hard work!

Following this term's success, WRTT will certainly continue their run into the next fall term. They are always looking for individuals from all departments and classes who are enthusiastic about the pleasure of making great music! All interested members for next year should contact the Engineering Jazz Band at engjazzband@gmail.com. Rehearsals are held Sunday nights from 7:00pm-9:00pm, and they are looking forward to having you join them. Thanks again to WRTT for the great performances this term, and we'll see you again in the Fall!

An Inconvenient Truth

The truth about population control and the environment

MICHAEL SIMOES
3B CHEMICAL

The western culture has destroyed the value of life from the moment of conception even to natural death. With the euthanasia debate going on over the world, we cannot even give our aged people the dignity and respect they deserve after everything they have done for us. In other words, we have become a selfish society that values death over life, with the mentality of, "If it does not bring me pleasure, or obstructs my 'happiness', it needs to be removed from my life".

Watching Al Gore's, "An Inconvenient Truth" there was a portion in the film about the correlation between the rise in population over the last 20 years and greenhouse gas emissions and world temperature increases. In other words, what he is telling us is, we need to decrease the population using methods of sterilization (permanent or other) over the entire world so that consumption decreases and the environment will heal itself. In reality, this makes no sense because in China, the one child policy has been implemented for many years, and their population still is increasing, and they still have 7 of the 12 most polluted cities.

What Al Gore forgot to mention in his documentary is that almost 80% of the world's resources are consumed in the west, and the rest of the 20% is consumed by the rest of the world. As a result, where the population is increasing, there is a lack of resources for them due to our own selfishness and greediness. If it takes away our pleasure and our happiness, then we should eliminate it. That is what the United Nations has been doing for over the past 20 years implanting their so called, "Family Planning" initiatives around the world, especially in the most poorest of countries. Using coercive techniques and food incentives for poor women or men to permanently sterilize themselves, injection of Depo-Provera or other methods, people in Bangladesh have been the recipients of some of the worst human rights violations. Now the United Nations wants to adopt a bill saying that abortion is a human right. Countries that have laws that protect life from conception to natural death, such as Nicaragua, a socialist country in Latin America has been the talk of boycott and trade threats because they do not conform to the western world's wishes.

Is this the most viable way to save the environment? To destroy life through abortion and euthanasia and to sterilize the love between men and women during the sexual act cannot save the environment. In a previous article that I had written, "The Modern Kulturkampf between Life and Death" I had written that we have become a culture of death. In response to this article, Sarah Bornstein from psychology said, "…that a low birth rate actually helps save our environment and reduce the number of starving people. Letting people starve to death because of higher demand then resources also creates a 'society of death'. … perhaps you should focus on more pertinent issues such as war and famine." She was correct in saying letting people starve to death is creating a culture of death, but she was wrong to say that there is not enough resources to feed everyone. Many of the starving people and famine in the world occurs where there are not a lot of resources because we are consuming them all. An equal sharing of resources in the global economy would ease these deaths and therefore help starving people. Mother Theresa of Calcutta, when she was awarded the Noble Peace Prize in 1979 said in her speech, "We are talking of peace. These [not caring for our children] are things that break peace, but I feel the greatest destroyer of peace today is abortion, because it is a direct war, a direct killing - direct murder by the mother herself. … And today the greatest means - the greatest destroyer of peace is abortion." Abortion, the killing of an innocent baby by her mother, gives mankind the blood lust to propagate war. If we can kill innocent babies, we can kill one another through war. Why should we let people die from abortion and not even be conceived through contraception because we have to satisfy our wants and desires above everyone else, again we have become selfish. God created this world, and he created us in His image to, "till [the earth] and keep it" (Genesis 2:15) As a Christian, I do not believe God would allow us to become over-populated and resources to dry up; we are his creations after all, and earth's most precious.

We have been led to believe that contraception was invented to prevent pregnancy, it was not. There is already a perfectly safe, infallibly reliable way of doing that called abstinence. Contraception was invented to indulge sexual instinct. The necessity that mothered contraception was our "need" for sex. It was not something that was just invented it has existed for a long time in many different forms. At one time, all the Christian faiths around the world were united on this issue, that it was intrinsically wrong. In 1930, the Anglican Church made history as the first Church to break away from this teaching. At this time, Catholic, Protestant, and even non-Christians voiced their predictions that it would logically lead to societal chaos, starting with marital breakdown and divorce. Theodore Roosevelt condemned contraception as "the one sin for which the penalty is national death, race death, a sin for which there is no atonement." Sigmund Freud, the founder of modern psychoanalysis who was an atheist observed: "The abandonment of the reproductive function is the common feature of all perversions. We actually describe a sexual activity as perverse if it has given up the aim of reproduction and pursues the attainment of pleasure as an aim independent of it". Gandhi, a Hindu, said that contraceptive methods are "like putting a premium on vice. They make men and women reckless" and predicted that "nature is relentless and will have full revenge for any such violation of her laws. Moral results can only be produced by moral restraints…If [contraceptive] methods become the order of the day, nothing but moral degradation can be the result…As it is, man has sufficiently degraded woman for his lust, and [contraception], no matter how well meaning the advocates may be, will still further degrade her."

These men and their predictions have in fact been made true in this day and age. Throughout all this time, we have had the one way to 100% prevent births and that is through abstinence, which makes us practice self control, but again, anything that becomes an obstacle to our pleasure and 'happiness' must be removed, and so this teaching has been removed. Even some of the most prominent Catholics in the media such as Sean Hannity, a known neo-conservative pundit for Fox news, is in favour of birth control, so as to prevent abortion. Is it not possible anymore to use self-control and practice abstinence? Mother Theresa, and her Missionaries of Charity, took up this challenge to teach "our beggars, our leprosy patients, our slum dwellers, our people of the street" of Calcutta of abstinence and the method of natural family planning (NFP), or natural fertility awareness (NFA) in order to make every child in this world loved and taken care of. In Calcutta alone, in six years, they had 61,273 babies less from the families who would have had because they practise this natural way of abstaining, of self-control, out of love for each other. If the poorest of the poor, with little to no education can learn this self control, to be in control of what God has given them, then the rich western world can as well, in many other ways.

Blessed Mother Theresa, recipient of the Nobel Peace Prize in 1979

Some critics say that NFP or NFA is the same as contraception, the end result is the same, and there is no conception of a child during sex. The difference between the two lies in the intent. Husbands and wives are called to be procreative. If they have a good reason to avoid pregnancy, they can use NFA and be non-procreative. If they use contraception they are anti-procreative. They both may have the same further intention, to avoid pregnancy for just reasons, but their present intention (the means to accomplish the common end) are very different. The ends never justify the means. For example, two students have the same further intention of getting good grades. With that goal in mind, one intends to study hard, and the other intends to cheat on the test. The ends do not justify the means.

To save the environment we must use the God given means of abstinence, and self control. It will work. This is the most inconvenient truth that the powers that be of the world do not want you to know. If you have further questions about sex and marriage and the beauty of the human body I will give you a suggestion on a book to read. It is called, "The Good News about Sex and Marriage" by Christopher West. Give it a chance.

Lastly, I will leave you with a story from Mother Theresa, in the same speech she gave when she was awarded the Nobel Peace Prize in 1979. The poor have a lot to teach us about self control, not being selfish, and giving until it hurts.

"A gentleman came to our house and said: Mother Teresa, there is a family with eight children, they had not eaten for so long - do something. So I took some rice and I went there immediately. And I saw the children - their eyes shining with hunger - I don't know if you have ever seen hunger. But I have seen it very often. And she took the rice, she divided the rice, and she went out. When she came back I asked her - where did you go, what did you do? And she gave me a very simple answer: They are hungry also. What struck me most was that she knew - and who are they, a Muslim family - and she knew. I didn't bring more rice that evening because I wanted them to enjoy the joy of sharing. But there were those children, radiating joy, sharing the joy with their mother because she had the love to give. And you see this is where love begins - at home."

Refereces: The Good News about Sex and Marriage, Christopher West
Mother Theresa, Acceptance Speech for Nobel Peace Prize, 1979

LowRider's Final Commentary

LOWRIDER
FOOT-OUT-OF-DOOR SYSTEMATICALLY SYSTEMIZING SYSTEMS SINCE '83

Dear LowRider,

What the fuck? I picked up the last issue of the Iron Warrior as I always do and flip the page to typically be greeted by your wonderful words of wisdom. Instead, I am faced with WEEF charts that have blatantly been stretched to fill in space. There is no one at this University that needs submicron precision when trying to determine how many stupid Geos got their WEEF refund last term. Was I ever disappointed… What gives man?

You shouldn't take your writings lightly. I don't think you understand how many faculty and staff look to your column for the heartbeat of the student body. Occasionally a good laugh is had as well.

Subscribed & Dedicated Faculty Member LowReader

Dear Fan I,

You put in a swearing work in the first sentence! You are following the style guide of low. I must apologize. My market analysts and strategists thought it would be much more beneficial to expend my energy on such publications as the Globe and Mail, National Geographic and Over 50. It was a scheduling mistake. Combine that with a new groupie fan club chick president (now made official with contract) and Low has been living out of body (but who hasn't). My inbox overflows with your love. Thank you for your concern.

WEEF is very, very, very good. It keeps Waterloo above water. Don't get me wrong. It hurts to be replaced with some charts regardless of their contents. Especially when you are the backbone of the publication. If the charts were pretty colors though it would have lessened the pain.

With sincere apology,

_LR_

***

Dear LowRider,

I was walking through the halls the other day and noticed an outlandish silver Volkswagen laying frame in the school. It was pretty much parked in the MIDDLE OF THE HALLWAY. I think it may have been the LowRider's LowRider. I was both touched and moved and then touched myself when I saw it. So hot! Can I drive it sometime?

Horny Mechie

Dear Fan II,

No.

_LR_

***

Dear LOWRider,

Have you noticed the fashion in the hallways of E2? Some say that Paris is the fashion centre of the universe. I completely disagree. Stroll the halls of CPH man! The fishbowl is full of fashionable fish. In DWE you will find marbled grey Google t-shirts and perfectly ironed tapered levis. Sweater vests and unibrows abound! Some profs even go so far as to wear the same green shirt and tan pants everyday just to further instill their deep sense of stylz. Innovation baby!

Fashion Advocate

Dear EngSoc Fashion Directorship Person,

Please combine the use of terrible propaganda t-shirts, blue jeans from grade eight and out of control ache with some suspenders. Suspenders… the new belt. One size fits all. Unibrows keep the sweat off your nose. Shitty mullets gently caress your neck as you walk from class to class. The best dressed community in the world.

_LR_

***

Dear LowRider,

My everyday Italian boy friend cut his hair! I loved tugging on his mop while making sweet passionate monkey whoopee. Now I have nothing to grab onto. Everyone thinks I'm dating Justin Timberlake or another random backstreet boy. I guess he's still kinda cute. Oh goodness me Mr. LowRider! I love him so much.

- Longer Now Hair than Boyfriend

Dear I Should Really Stop Writing About The Man Next Door,

I hope now that he looks like a man he'll Quit Playing Games (With My Heart). Every time I run into him there is typically hand-to-genitally contact of some sort. Giada De Laurentis is jealous.

_LR_

***

Dear LowRider,

Have you ever heard the song LowRider by War? What a great tune indeed. Did you know that there are like 71 songs called LowRider?

Lyric

Dear Musically Informed,

My office is now composing a LowRider national anthem that mixes all the LowRiders in a hour of euro-techno-house-dirty-German beats. Get your glow sticks ready junkies.

_LR_

***

Dear underscore Ell Argh underscore,

There have been rumors flooding the hallways of CPH. I've heard that Unit 36 is to be no more. I heard that there will be but one more OT. I've heard that EOT is to be the final display of contemporary Engineering culture at UW. The final display of those who work hard and play a wee bit harder and officially celebrate such at the Philip Street townhouses. I don't know how to end such a legend in UW Engineering. This upsets me greatly.

Regards,

Mourning the Loss

Dear Historian,

There is some truth to the rumors you speak of. After this Friday, there will never be a more dedicated group to the cause presiding in the palace that we refer to as home. Sure it's a bit rough around the edges but we've got a really expensive front window now. We need to face the facts ladies and germs. UW is turning into a world class university on all fronts (not just the technical disciplines of Math and Applied Science). We are studying in one of the most intellectual communities on the face of this green and blue planet. Economics has taken over. The property that our beloved thirty rests upon is worth its weight in gold. Why cram seven poor souls in when your could cram twenty one in with the same geographic footprint? Unit Thirty Six will remain in the hearts of many as a place to celebrate the innovation and creativity of those who live a balanced life of work and pleasure (and a lot of dirty, germs and spiders). Let's push forward as we continue in the spirit of "Why the hell not?"

_LR_

***

Dear LowRider,

Why does there have to exist different classes in our society? I am the only one to pursue a prestigious engineering degree from Waterloo from my high school. Everyone else decided that a diploma from a community college would suffice. Now that I'm about to graduate, I realize that I will be making nearly twice as much money as they do. I've been at this for almost five years though. I find it difficult to socialize with these guys because I show up with my ring and there is a definite aroma of jealousy.

I've worked my butt off to get to this point. I'll work by butt off to build a career that is both personally rewarding and financially rewarding. I love these guys but their inferiority complex makes

it difficult.

Ringed ECE

Dear Big Man on Campus,

Money is not everything. Don't let your inflated salary inflate your head (forehead bursting at the seams as writing this). It does help to purchase such things as gold lined BANDANAs, Audi RS4's and fine imported scotch. Be open and honest with your buddies. Communication is key. Don't let this shit build up inside. If you must, remove your ring if you determine that it is being interpreted as a symbol of status (it should not).

WOW. I think I actually gave decent advice. I need to leave now.

_LR_

***

Dear Lowest Rider,

Last night I met a man. Sir Konig Ludwig was his name... Konig Ludwig Weiss has the typical Bavarian appearance.

And he should with such deep roots in history. His aroma offers a delicate phenolic, cloves, lemons, soft wheatish malt, and the occassional touch of light banana.

He's light/medium in body, and gently effervescent. His flavor is tart and sweet upfront, revealing lemon, and then warming to become sweeter with some banana and more maltiness across the middle. Cloves appear at the swallow, followed by more malt, some plastic-like phenolic, and drying yeastiness.

The bitterness is limited, and there's just enough tartness here to keep it balanced. The aftertaste lingers with some herbal hop character and yeasty tartness.

Our encounter was brief yet sweet. I hope to meet you again soon. Sir Konig Ludwig.

sigh...

Sincerely,
-I wore suspenders first

Dear MRSL,

I feel so proud that you have found a place in your heart for real beer my younger brother. I just want to point out though that I'll always be smarter, better looking and stronger than you. Oh, but I may have already pointed that out. You're a good kid. Keep the rubber side down.

SRML

***

Dear LowRider,

Is there a LowPassenger? What about a LowRiden? How about a LowRiderette? You know what I'm getting at you hot stud of a man you.

Lustful

Dear Passion Fruit,

Awkward. Very awkward. Please submit profile and nudes to email. You wouldn't happen to be in Architecture would you? Controversy surrounds.

_LR_

***

Dear LowRider,

I'm enamored by my pinky. I think just about everybody in fourth year is as well. Typically, I roll into class between 25 and 30 minutes late everyday and sit in the back row. I watch all the fourthies twisting their pinky ring. Sometimes they extend their arm and flex their hand back and watch how the fluorescent light is reflected by the notches. You'd think they just got an engagement ring or something….

Wee Observant One

Dear Size Tiny Pinky,

You love it. I heart removing paint from dry wall with my ring.

_LR_

***

Dear LowRider,

My boyfriend has a problem that is problematic to my genital area. He really likes super suicide insane wings from the Spur. The problem is he has long greasy hair and doesn't like personal hygiene. Because Spur is typically the last establishment of the evening, the following special time becomes a bit zesty. He forgets to lick his succulent lips off and before I know it the kissing goes south and ZING! Oh goodness there is a fire in my pantaloons. What should I do?

Dijon Mustard

Dear Ouch!,

I hear beer cools the tingling sensation. Shower as directed.

_LR_

***

Dear LowRider,

I've noticed the quality of your writings has plummeted in the past few issues. Please ensure the quality of your column's content remains world class and is delivered in a timely fashion. Make it happen!

Vice President of Operations Research Quality Content Analysis Marketing of the Iron Warrior

Dear Management Scientist,

I'm going a bit out of my mind as of late due to this thing called a fourth year design project. I'm making this really ground breaking thing. I just finished putting together a paper mache volcano. I painted it grey and put little trees along the bottom for realism. The plan is to put the perfect amount of baking powder and vinegar in it during my technical presentation. Sure, this has been done by preschool kids for ages but… Did they throw in red food colouring during the demo? Exactly. Taking applied science to new levels baby.

_LR_

***

Dear LowRider,

I have a great, wonderful, greasy mullet. I can also open bottles of fruit flavoured, from concentrate juice with my iron ring. Can you open brews with the might of your pinky? Didn't think so.

Fantastic Mullet Man

Dear Turnbuckle,

* Pinky hangs from hand in a bloody mess of partially open bottles of Lucky Lager *

I prefer draft beer.

_LR_

***

Dear LowRider,

Just the other day, my friends and I were wondering what ever happened to that guy in your class who wrote you about his hopeless crush. I know you don't do follow ups but can you make an exception this one time?

Deeply Concerned with the Fate of Universe

Dear Guy,

Its funny you ask. I was chatting with that lad the other day. I think he finally dealt with the reality of his situation. At last I heard, he acquired some used skates, went on a hot date, and followed through as any gentlemen should. That's all you're getting you gossiping Chemmies. Get your own sandwich.

_LR_

***

Dear LowRider,

I am the master of soldering. You heard it right. I can solder inside out, upside down, underwater, under the influence, anywhere, anytime, anyplace. I have moved on since my days of the yellow golf shirts and now proudly rock a Abercrombie and Finch polo with paint on it. Cavalier > Jetta. Let's get that piece of crap car running.

Givnik

Dear K1,

You're a good man. I wish you the best in the dirty South. Make sure to buy the smallest motorcycle with the largest motor and slap a couple of UW Motorsports badges on that beast. It's been an absolute pleasure working with you.

_LR_

***

Dear Low,

So we rented a hot tub… It was lifestyle aquatic for a blissful week. One steamy Saturday night we rented a couple of Russian Mail Order Brides. Things got all hot and heavy in the tub before I found myself wearing her tennis shoes on my ears. I then peered down and her legs and saw giant hairy tennis calves. They we huge and hairy and they threatened to eat me! I then proceeded to run to my room where I played a couple of riffs of Led Zeppelin and went to bed. Just so you know, every now and again I substitute your name in love songs.

Spook

Dear K2,

What a great story. Gotta watch them Eastern European ladies... Thanks for keeping me in line this term. Someone has gotta keep LowRider grounded when it gets mucky. Best of luck with your new R32. I will marry you and sing you love songs long into the night when you pick up that beast of a car. It's been an absolute pleasure working with you.

_LR_

***

Dear LowRider,

I'm gonna keep this short and sweet. Looking back on the past five years of your life, what words of advice do you have for the student body?

Seeking Guidance

Dear Readership,

Everybody tries to make it so complicated. It's a matter of perspective and balance.

Live these years a day at a time and whenever possible make time for impromptu fun. But also look forward to your next term (4-month) and long term (graduation). This will keep things in perspective. Don't concern yourself too much with details or the everyday will pass you by. It's tough to appreciate life when you have 97.486 assignments and 42,697 projects due tomorrow. Slow down and breath.

Work hard (efficiently) when necessary (stay focused) but make time for FUN. I would highly recommend taking on an ambitious (but not insane) fourth year design project and take a lighter course load. Focus your efforts on things that truly interest you and you'll go so much further. Course work can only take you so far. Project work is key.

Take Larry Smith's classes in economics in your final year. Not a moment sooner. His courses are the most important component to your academic career and person as you move on from this place. His concepts extend far beyond the wall of Waterloo. Trust.

Have fun. Laugh at yourself. Write a stupid advice column and poke fun.

__LR_

***

Dear LowRider,

Is this your last article ever?

Anon

Dear Internationally Extended Fanbase,

This is it ladies and germs. As I type this final chunk of bull shit in Microsoft Word, it underlines shit. Then I right click on shit and it suggests I replace it with feces, poop or terd. This is the end of the road, my readership. The light of countless LowRiders who have gone before me doesn't fizzle out. We simply light up expensive cigars and move on to exploiting our sensational communication skills elsewhere. The IW will always have a special place in my heart. Some will read these final words on all corners of the globe. They will say, I knew that man. He was a great man. I should have asked for his autograph across by bust. But now he must be turned into glue like all good race horses.

And with that. I express my final words to the Faculty of Engineering. Pour one out for me. Off I ride into the sunset. It's been a good ride.

_LR_

[Hangs up BANDANA. Sheds a single tear down left cheek…]

'till we meet again children, keep it low.

Litt

Stop crying. There will be a new LowRider.

Email him your problems at uw_lowrider@hotmail.com

The Havenger's Guide to the Galaxy - An Engineering Scavenger Hunt

AMANDA HOFF
3A MECHANICAL

What happens when you mix 7 teams of students, a road trip to Listowel, a whole bunch of insane events, and a complete lack of sleep? The Engineering Scavenger Hunt!

This term's event was a huge success, thanks to all who participated! With teams from Math, 4B Software (and company), 3A Civil, 1B Mech, EngSoc Exec, "pix-plz" (a conglomeration of classes), and Physics (who came out for the first time in many, many years, but came out strong!), it couldn't help but be a good time!

The middle of the night was filled with high-intensity events like "Name That Tune - Brawn Edition", "Escape from the Ravenous Bug-Blatter Beast of Traal", "3D Twister (with the new Dynamic Dot System)", and of course the infamous Hunt, where participants hunt down a group of volunteers scattered around the Engineering part of campus, bring them back to POETS, and often challenge them to one-on-one mini events for a shot at bonus points!

Another new event this term was the "Vogon Poetry Contest", the goal of which was to write the world's worst poetry. Participants were given words to include, topics to write about, or both, and given a particular style or freeform. Some of the poetry came surprisingly close to being the worst! Be sure to read the samples of some of the best bad poetry that we've published here!

One of the highlights of the evening for the Gods, however, turned out to be "Competitive Napping". Despite the name, the event turned out to be more collaborative than anything, and essentially turned into a group of 7 very exhausted people sleeping for an hour on a single mattress in POETS.

Congratulations to all of the teams on a job very well done! In the end, 1B Mech pulled through with a spectacular victory overall, and will be running it for the Fall term! The Gods' final message to our winners: "Haha, suckers!!! You thought it was hard to not sleep for 24 hours? Now you get to not sleep for the whole week before, too!"

Do you want a wonderfully sexy Havenger's Guide to the Galaxy towel to remember the event by? Or do you just want to buy one anyway to pretend you were there? Of course you do! If you want to purchase one (for only $10), email Ross and Amanda at havengersguide@gmail.com.

Your Winter 2007 Genius Bowl Champions
4B Software Engineering

Scunt Poetry

A Letter to the Love of my Life
by Amir Amini (Team pixplz)

You are so soft, my love
As soft as my pillow
My pillow is delightful
Delightful and believable
I believe in my pillow
I believe that it exists
If you want your pillow to also exist for you
Send this letter to five people, may the force be with you

Darth Vader
by Team Software and Co.

Hayden Christensen
the biggest badass ever?
What the f**k is that?

George lucas, here's how
You fix the audition script:
Have more words than "Nooooooooooooo"

Ode to Plastic
by Team Math

I make booths
of plastic smooth
for bureaucracy

Of craggy pure
salubrious carure
papers crisp and short

O casual business
doesn't frisness
of bureaucracy

Unnamed haiku
by the Reckless Mechs

Chewy and frazzled
it makes me. I wish I were more
Technological

Pi
by VPEXECOLEKAS (Team Exec)

Three point one four one
Brilliant, Zany, Powerful
five nine two six five

Unnamed poem
by the Physics Pirates

Lo, outrageous roundostity
Tasteliness herecome unmatched
Rose sesquipedalic homogeneity
Fortnot o bogus ideal of fruityness
Tasteliness, roundostness, foreverly
Lolly

Speedy triggerlings waft over a garbage heap
Cometo being responsible for battlings gone over
Stupidity follows a colourful Bush
As nationastic fallingisms hereto them destroy
Presidents finding poetic Vogonism intelligent
Dumb.

Four Simple Steps to Planning an International Exchange

KAREN KAN
EXCHANGE DIRECTOR

As any past exchange student will tell you, one of the best ways to spend 3A or 3B is to be far, far away from Waterloo. The Engineering Exchange Program coordinates agreements with more than 40 universities around the world – all over Europe, Asia, Australia, Mexico and more. You can make up your regular course load while absorbing the culture, history and language (if it's not English) of a foreign country. You can fit in lots of traveling (just think: weekend trips to London or Paris!) and then, when you come back to Waterloo, you'll be back on stream with your class.

So what do you need to do to turn such an international adventure into a reality? Almost everything that you need can be found online at www.eng.uwaterloo.ca/~exchange. But in a nutshell, here are the general steps that you need to take:

1. Pick where you want to go. Or at least narrow it down a little. There are so many options, this is probably the hardest step!

2. Talk to the Exchange Coordinator responsible for the university/country you're interested in. He or she can give you more information about the university and will ultimately approve you to go. Some programs (specifically Sweden and Australia) are very popular, so it is best to meet the coordinator as soon as you can.

3. Fill out the application form. This is a very simple form that is signed by your department's Undergraduate Advisor, co-op director and PDEng director. Getting approval shouldn't be difficult; these are just in place to make sure that you will still be able to graduate on time.

4. Bring all your documents to Cindy Howe in the Exchange Office. She will get the final signature from the Associate Dean of Undergraduate Studies and can answer any questions you have.

That's it! Now, there are a few requirements that you have to meet. You have to be a Canadian citizen (i.e. have a Canadian passport) with a cumulative average of at least 70%. You should plan your exchange at least 8 months in advance, and set it for 3A or 3B (depending on your department, it may be possible to go for 4A). If the language of study is other than English, you should have at least basic communication abilities. The official requirement is grade 12 + 1 university course or 3 university courses without any prior background, though these usually aren't strict rules. Of course, the more of the language you know, the better.

For more information, check out the Exchange Program website, www.eng.uwaterloo.ca/~exchange where you can find lists of universities, program coordinators, previous students and the courses they took, as well as all the necessary forms (including forms for scholarships). In the Exchange Office (CPH 1320), you can find reports of past student's experiences, as well as Cindy, the friendly administrative coordinator who can help you with almost anything.

So for all you first and second years, I encourage you to consider going on exchange. It is a truly incredible experience that will leave you with friends from all over the world and memories for a lifetime.

Skunk found in E2 foyer

JEFF KAO
3B SYSTEMS DESIGN

Two weeks ago, a skunk was spotted in the E2 foyer at 2:30am. It was not known how the skunk managed to enter the building at the time of its discovery; however, the frisky little creature was captured on camera by Ben Whan (3B Syde) while it was trying to crawl under the heaters in the side of the foyer.

A puddle of skunk 'juice' was discovered shortly thereafter. After spotting and approaching the skunk, it continued to hide from the outside cold under the warmth of the heater. Attempts to contact the campus police so they could deal with the issue were not met very kindly, with the officer on the line stating that they were too busy to deal with problems such as a skunk lost in the Engineering building.

Eventually, one of the outside doors to the E2 foyer was cautiously propped open so that the skunk could escape to the exterior. At this point, the skunk was left to its own devices and the doors leading into the engineering buildings closed so that the skunk could not enter. The foyer lights were then extinguished, and the students on their way home.

While there have been no reports of any graduate students being skunk sprayed in E2 in the early hours of the morning, it is not known whether the skunk indeed found its way to the building foyer exit.

It is also not yet known whether the skunk managed to sneak in on its own, or was placed in the E2 foyer as a prank. There was indeed a skunk in the E2 foyer with the picture(s) a testament to this fact.

Prof Quotes

"Do you want me to dance?"
- Arzanpur, ME 360, after a student's cell phone rang

"This is how you would explain it to your mother... Unless your mother is a mathematician, in which case you don't talk about it at all."
- Heppler, SYDE 281

"Just an hour today. Then you're free for a beer... Because today ends with a "Y", right?"
- Polak CivE 422, referring to a request the previous week to move the second hour of class to Molly Bloom's because the day ended with "Y".

"Is that thick? Relative to the thickness of... anything you've ever fricken seen?!?! No."
- Straube, CIVE 507

"So you put the plastic in and you walk away... but some people don't like living in a condom"
- Straube, CIVE 507

"So... Clint Eastwood had it right."
- Straube, CIVE 507

Skunk in E2 Foyer

the Iron Inquisition

What are you thinking of accomplishing in first year?

Teri Leung, 2A Systems Design

"Join clubs"
Lau, Computer Applicant

"Gain hands-on experience"
Husayn, Computer Applicant

"Join sport teams, volunteer"
Pural, Systems Design Applicant

"Join Engsoc"
Tomas, Civil Applicant

"Get to know people"
Arjun, Nano Applicant

"Engsoc, Solar Car, EWB, pie-throwing contest, tobaggan"
David, Nirmal, Abel, ECE Applicants

"Party"
Nathaniel, Computer Applicant

"Finding a man with a future"
Cindy Crawford, Chemical Applicant