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the IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY

VOLUME 26 ISSUE 7 | WEDNESDAY, JUNE 1, 2005

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

WATERLOO FORMULA SAE NO. 1 IN CANADA

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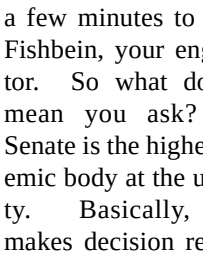

JONATHAN FISHBEIN
STUDENT SENATOR

Engineering Students! I'm sure many of you are wondering who I am and why do I have an article here, so I'll take a few minutes to explain. I'm Jonathan Fishbein, your engineering student senator. So what does that mean you ask? Well Senate is the highest academic body at the university. Basically, Senate makes decision regarding new programs at this university, the university schedule, the university budget and other matters concerning academic here at UW. My job at Senate is actually quite simple; I make sure that the views of engineering students are well heard by the university administration on issue at Senate and make sure that I vote on issues the way engineering students want.

With that in mind, there is an issue coming up a Senate's June meeting which will directly affect engineering students. As I'm sure half of you are aware, that issue is whether to extend engineering student's reading week from 2 days to a full week and cut the 3 days off before exams in the winter term. Now I've been going around and getting some feedback and will continue to do so until the senate vote on June 20th. One way which you can get your opinion heard on this issue is to surf on down to http://www.engsoc.uwaterloo.ca/www/poll.php and cast a vote in an online poll jointly run by myself and EngSoc. So far, we've had over 500 students come have their voice heard and I want to encourage those of you who haven't done so yet to make your opinion matter. Another way to get your input into this issue is to e-mail me at jfishbei@engmail or find me in the halls and tell me how you feel about it. I'm (generally) an approachable guy so don't be afraid to come up to me and tell me what you think. After all, it's my job to listen to you!

"After all, it's my job to listen to you!"

So that's basically all I have for this article. Once the issue is voted on at Senate, I'll have another article with the results of the poll, the results of the vote and explaining what happened at Senate. Also, stay tuned for more important Senate related issues as we engineering students try to show the university administration that our opinions matter too!

PDEng feedback

KRISTI HERLEIN
1B CHEMICAL

Note to first year students: Many of you first years have stopped caring about whether PDEng is actually teaching you something or if it's just wasting your time. Maybe you have decided to not spend any more time on PDEng when you have just spent most of your work term trying to pass it. But realistically, you will have to take PDEng four more times to graduate (or five, if you failed like about 170 of us), so you shouldn't just blindly accept something that will take 120 more hours of your life, because the first offering of PDEng was simply not as good as it could have been.

On May 17, there was a forum held for the students with Professor Carolyn MacGregor and Professor Wayne Loucks. The forum began with Professor MacGregor discussing some of the sore points of the course; explaining what had happened, the rationale, and some defense of their side.

Prof. MacGregor spent some time talking about the EAP test, which is something covered in most, but not all, 1A concepts courses. She revealed that only 26% of people passed it on their first attempt. PDEng students were given three attempts at this and 78% of students passed the EAP by their final attempt.

She also stated that the average estimated time taken to complete the course was 27 hours, which fell very close to their original aim of 30 hours. To arrive at this number they used the sum of the estimated times given by students on the feedback forms at the end of each module. They discarded some of the higher numbers in modules where all of the assignments needed to be completed online and the number entered by the student did not match the time recorded on the UW-Angel system. The estimated time was something disputed often during the rest of the forum due to the way the number was decided, and issues with the "anonymous feedback forms" not being anonymous at all.

Prof. MacGregor did talk about some of the revisions that have been done for the course this term or that are being planned for next term. On the PowerPoint presentation that was shown, things like the template of the course website, clarification of rationale for activities, printable content and assignments, more time guidelines for course activities, review of student logs, and the online community for course support, were given as examples of things currently being done to improve the course. Prof. MacGregor also promised the earlier release of course content, mentioning the late appearance

...continued on Page 8.

Letter from the Editor: Your cell phone sucks.

DAVID YIP
EDITOR-IN-CHIEF

June is here, and this is a landmark month for me. June is the month that my one year cell phone contract expires, and I will be free from this contract, and free to shop around the different service providers, each with their own set of phones.

Undoubtedly, I will be disappointed. Cell phones, once a toy for the yuppy and famous, are now everywhere, as the convenience of being able to be in contact nearly anywhere or anyplace cannot be denied. Of course, as with any technology, this comes with its social ills, as evidenced by ringers that inevitably go off during lectures, movies, stage productions, etc.

Also, now that the cellular phone is now a mass-market product, it means the cell phone companies have adopted tried and true methods to sell more stuff: More features. More buttons, colours, pixels, zoom, video, everything. Recently I had a phone that could play full length movies, as long as they were converted into some sort of proprietary format. Presumably it could do all sorts of other fancy things like keep track of my appointments, run database software, send pictures, movies, text messages, surf the net, what have you.

They called it a smartphone.

Well if that's a smartphone, than I want a dumbphone. I want to phone that rings, not sings. I want a phone that is durable and easy-to-use. Converting videos to a proprietary format is for algorithm geeks, not daily phone users.

I yearn for the days of the Nokia 5190. Remember? Grade 9, the Fido store, that midnight blue casing with the lime glow. The game Snake. It made calls, it received calls, it sent messages, it received messages. To me its only failing was its size – the 5190 was not truly pocketable. I am on my third cell phone now, a LG something or another. The fact that I don't know its model number should be quite indicative of the lack of fondness I have for this thing. It has no games. This is because it is "Java Enabled" which means the network gets to charge me for games to download.

It has a full colour high resolution LCD screen. But why? It still only has to show names and numbers. It is not any more useful to me than the old monochrome screen of the 5190. What I do know, is that it drains the battery far more than a 5190 did, meaning that I have to carry the charger whenever I hop back home to St Catharines for a weekend trip.

Ostensibly, the reason for the screen is to display pictures. However this phone does not have a camera! (Not that I would want one.) The only way that a picture could ever arrive on this phone is if I buy a wallpaper or someone sends me a picture message. Now, out of you reading this, how many of you have sent a picture message? A text message perhaps, but a picture message? Especially because this phone has no camera, the only pictures available to send are the ones from the factory and things I have to buy from the network, which are both sources unlikely to ever furnish a picture I'd want to send.

"But Dave", you protest, "That's just because your phone sucks. If it had a camera, it would need a colour high resolution screen."

Cameras should be cameras. Phones should be phones. Am I a Luddite? Am I too much of a photo snob? Maybe. But let's consider. What are the two questions that people love to ask about digital cameras? The first is: "How many megapixels?" The second is: "How much zoom?"

While I will admit that upping the pixel count on phone based cameras isn't much of a big deal, optical zoom will always take a certain amount of space because of the increased number of lens elements. Manufacturers are then faced with making a small phone with a fixed focal length, or a camera with phone capability. I do not believe that with current technology you can pack decent flash, battery, lens elements, and a phone onto something small enough consumers will carry as a phone. If it is small enough, then its performance as a camera will suffer. Research is being performed on variable focal length lenses that change focal length based on fluids reacting to an electric current, but that is far from the current state of the art. Cameras will be mediocre phones, and phones will be mediocre cameras. Most phones are of the latter category – Samsung has introduced the SCH V770 – a 7 MP camera with 3x zoom, and flash. Its also a phone, but it's a camera-sized phone, and unless you're in the habit of carrying camera sized electronics around, its not all that desirable.

Other "features" that cell phones have been sporting are polyphonic ringtones. It is hard, if not impossible to find a phone that has a ringer that sounds like a phone ringing. I don't know that anyone's landline phone can do a recognizable-but-cacophonic rendition of London Bridge or Saints Go Marching In, so why anyone feels the need for their mobiles to do the same is beyond me. I believe the marketing is something about "Expressing yourself" – "Expressing yourself?!" If you want to express yourself take some art lessons. Write some crappy poetry, get all emo in your LiveJournal, but playing cell phone versions of your craptacularly angsty Linkin Park is not doing anyone any favours.

Does anyone remember 3G? WAP? Did that go anywhere? No. At the end of the day, something that looks like a phone will be treated as a phone. Donald Norman in his book "Emotional Design" calls this the users' "System image." The latest trend is to integrate MP3 capability into phones. Because the idea of holding a hard drive up to your ear sounds appealing. Because having to divide battery life between an music player (Probably non essential) and a cell phone (Probably more essential) sounds good.

Putting on my pundit hat, I believe what consumers want in a phone is simplicity. If anyone needs evidence of how simplicity flies, look at the iPod. It plays music. (I know it has some extraneous calendar type organizer functions, but those are unobtrusive.) A cell phone that is pocketable, splashproof, with a scratchproof screen. Buttons that don't wobble, and more buttons with direct control of features, rather than having to wade through menus. An elimination of this ridiculous effort to make phones do everything. Battery life would be something nice to work on.

At least one company agrees with me. Vodafone UK has launched two pared down phones with dedicated hard-keys for contacts and voicemail. Granted they still have colour LCDs, perhaps that is one thing we will never move away from. But the simplicity is there. So maybe there's hope.

But then people will always be drawn to features, bells, and whistles, and marketing knows that. In the land of Dilbert this is the divide between marketing and engineering. Engineers end up designing features that the would probably never use themselves.

So maybe I will be forced to listen to angstacular garbage emanating from the cell phones of "self-expressive" teens in the mall.

IRON WARRIOR

The Newspaper of the University of Waterloo Engineering Society

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Attack of the Groupie Fan Club Chicks

Dear 'the one who calls himself LowRider'

Seriously man… What the Fudgesicle... Who the heck are you... Somehow you think you're all that and a bag of potato chips. I read your article in the last IW and it sucked. What happened to being cool? You're not even offensive... You didn't even sneak in any swearing words like shit into the article. You're just a big pussy cat... I'll bet you that those groupie chicks of yours have you whipped. Learn to be what the LowRider should be - a PIMP, my hero and a raging alcoholic... the old guy had a horrible goatee but at least he was the man! Is there anyway that I can join your groupie chick fan club?

Sincerely,

Wanna-Bee Chemical Bond Crossword Master Afro-boy

Dear Young Immature Child,

Fudgesicles are really good. I haven't had one in a really long time. I should go buy a box.

You want to join the club eh junior? Well I'll tell you what… Since you're all petite and stuff and have very feminine like hair and piercings that only females should have… the answer is NO. You wanted offensive. You got offensive.

Let's discuss your criteria. The Pee Eye Emm Pee thing is well taken care of I assure you. Just looks at all the fan mail I've been receiving. The BANDANA is always a hit with the fairer of the sexes. I'll always be your hero because I'm at least 4 feet taller than you and carry a light saber. Unlike yourself, a raging alcoholic LowRider may not be, but I do appreciate a good brew and can drink your 73.3 pounds of body mass under the table anyday.

Take care,
_LR_

Dear Mr. Rider,

I really wish you would respond to my previous email. It breaks my heart not to hear from you like this. I just sit beside my computer waiting... for you...

I long for those underscores before the L and after the R. I dream at night about those sexy pieces of punctuation.

How could you treat your #1 Fan like this? I thought what we had was special!!

But how can I stay mad at a face like that?

LowRiderSuperFan

Where my groupies at?

Dear Groupie Chick,

Why do you keep sending me these damn emails? You have sent one per day for the last month. I get the idea already. Yikes…

You wouldn't happen to know what the deal is with all those seductive posters put up all over engineering would you? I actually kind of like 'em to be honest. Morale in the entire faculty is up because of your efforts. Keep up the good work.

Oh yeah. Thanks for the cookies. I didn't choke on them like most of the batches the groupie chicks bake me. Feel free to bake me some more all you dedicated Groupie Chicks out there. I really like roast duck ravioli in a white wine sauce by the way.

Your bestest friend,
_LR_

Dear LowRider,

My name is Vanessa and I am studying Architecture at University of Waterloo Cambridge Campus. I was wondering what this LowRider thing was all about. How can I get involved? Since us Archies (that's what we call ourselves) are now are part of your faculty, we want to become fully engulfed in the Waterloo Engineering experience.

I have so many questions that I am sure you could answer with your infinite wisdom. I want to get to know the real LowRider. The man behind the hanker chief is what I am interested in…

Your byline photo really caught my attention. That chiseled chin and gangster lean makes me… [CONTENT EDITTED FOR SUBJECT MATTER AND LENGTH] To top it all off you're in Systems? That makes me quiver with excitement. Let's meet up at Bomber next week.

Your secret admirer,

Vanessa

P.S. Attached is my picture so you can recognize me. Let's Bomb it up…

Dear Yet Another Female Groupie Chick,

Whoa. Um…
I'll be there.

_LR_

P.S. Welcome to Engineering. Is Architecture anything like Nursing? Nurses go over well with engineers. It's not a hanky. Get it straight. Like I said last time, look for the story of the BANDANA next issue.

Dear Louie Ryder,

I have a serious problem on my hands. My girlfriend is cheating on me with some random dude. I'm in that super easy, crappy, basket weaving course at the University of Toronto if it helps any.

Here's how it usually goes down. When I'm working on one of my fruit baskets in the kitchen, he pulls up in this silver car. The thing is sitting on the ground, that's how Low it is. I think it's of European descent. It's actually quite nice to be honest. I can see why my girlfriend likes this guy. Anyway, she slides down the eves trough from her room and runs to the car without even trying to hide from sight. When she opens the door all I can see is a dark figure within wearing a red hat or something. And this damn song that goes like da, da, da, da, da, da, da, da, da, da, da, da is blasting. I the band War does the tune. I'm sure you've heard the tune at the Silver Spur.

Who is this guy? I want to mangle his face up real good. Maybe even weave him a basket if he's a nice guy.

Help a brother out,

Franklin Smithe

Frank,

No idea. Just move on. There are many fish in the sea.

_LR_

Have a problem? Need advice?
Email LowRider at
uw_lowrider@hotmail.com

Improvements to electrical 4th year design project

FRANCIS HOPE
4A ELECTRICAL

It has occurred to me, being in 4th year electrical engineering that the electrical engineering program does not adequately prepare its students for its large design project in 4A. Most of the other faculties have at least some large design project that they have to do before 4th year. The mechanical students have a project involving a heat sink for thermodynamics, the systems have various design projects throughout all their program, even in 1st year. Even the comps have a design of an operating system.

Though the electrical program does try to prepare it's students for a design project, I find that preparation woefully inadequate.

In 3B the term before their project, there are a couple classes at the beginning of the semester to tell students what the scope of there project should generally be, where to submit there articles, and what a design project is. However, this is not very useful or informative. This is because not enough of examples of previous design projects are given, nor are examples of factors that should be considered when coming up with a design project - factors such as the availability of parts for your project, the lead time in part delivery, the technical capacity of the team to complete the project, good consultants, the skill set possessed by team members, etc.

The course ends up being a haphazard attempt to give the students some direction in their project, but is not very effective. It ends up being the lecturer repeating the same things: What is your scope, who is your consultant and what are your goals. However, they fail to give an examples of a previous projects, the scope definition process, the approach to their project their resolution. In other words, the course should give methodology of a design project and major things to consider along the way.

"...the electrical engineering program does not adequately prepare its students for its large design project in 4A..."

After all, how are you supposed to come up with a complex design for a project when you have never done it before? The electrical engineering department really needs to come up with some sort of design project before 3B to prepare the students for the 4th year design project. The design project doesn't even have to relate to electrical engineering either it just needs to illustrate the process of design or at least part of it. For example in 3A the program has thermodynamics. You could easily add a design project there to give the students the idea of design and maybe introduce some ideas on the trade-offs between the different types of designs for a heat sink. Just like the mechanical students do.

So where does this leave a current student in electrical engineering? What hints can I give to them for a design project? First, talk to people in your class about their interests and the a possibility that they would want to work on a similar design project. This will make sure that you all have similar interests and that you end up doing something that you enjoy. Secondly, start trying to form a design group early, perhaps in 3A or 3B. This will ensure that you are not trying to form a design group at the last minute. Thirdly, start doing research on your design project beforehand, that way you don't need to do research on your project on the work term. Fourthly, do some of designs for your project the term before, this will make the 4A term a lot lighter on you. Fifthly when you come up with a design project make sure that the scope is not too large. You are not trying to design something that will change the world, just something that illustrates the concepts of design. And finally when you do make a design team, make sure that you work well together and that you communicate well. It is great if you are all friendly but if you cannot organize you are not in a good position for the design project.

Hope this is helpful, and good luck on your future projects.

Waterloo Formula SAE: Superior by design

PETER YANG
4A MECHANICAL

The 2005 University of Waterloo Formula SAE Racecar Team is pleased to announce that it has won 4th Place Overall at the prestigious Formula SAE Competition in Pontiac, Michigan (May 18 ~ 22, 2005). Waterloo is also first among the 17 participating Canadian teams. The 4th overall placement ties Waterloo's best-ever finish at the 1987 Competition and is the highest finish by a Canadian team since 1996. Considering that the number of competitors has grown significantly (over 120 teams representing 14 countries) and that current rules are much more stringent and tougher than those in the past, it could be said that Waterloo probably has engineered the best Formula SAE racecar ever in Canadian history. In fact, by scoring 812.010 out of the 1,000 available points, Waterloo also becomes the first Canadian team in the Completion's 25-year history to break the "800-point" barrier. Thus, placing 4th overall is definitely worth celebrating!

What is Formula SAE?

Hosted by the Society of Automotive Engineers (SAE) and sponsored by GM, Ford, and DaimlerChrysler, the Formula SAE Competition is an automotive engineering design competition where students are challenged to design, build, race, and market a brand-new open-wheel prototype racecar from scratch every year. Similar to the professional racing competitions such as Formula One, all participating teams in Formula SAE must conform to a set of rules (the "formula") that dictates what designs are and are not allowed. Although restrictive in certain aspects such as engine displacement (maximum 610 cc), the rules still allow teams plenty of room to use their engineering skills to create innovative designs. It is the higher-level and comprehensive set of required skills in conjunction with an extremely tight timeline that make Formula SAE Competition the world's toughest and most challenging collegiate engineering competition.

Education – The Critical Ingredient to Success

At Waterloo, the team's design philosophies are to improve proven designs through an evolutionary approach while create new designs using sound engineering. Thus, the 2005 team's success must also be attributed to the wealth of knowledge passed on year-to-year since 1986. Most of the 2005 Team's lead designers joined in Summer or Fall 2001 while they were still first year students. After 4 years of receiving daily knowledge transfer in conjunction with hands-on learning, these students have become team veterans and are now, in turn, passing the valuable engineering and manufacturing knowledge to newer and younger members. Most of these knowledge and experience are not taught in lectures or available from other sources. In fact, the Formula SAE team is also the only team on campus where regular training sessions are held to ensure that new members can continue to uphold the reputation built by previous UW teams.

In addition, the team serves as a primary source of mechanical related advises and knowledge for the university's three other human-driven motorized vehicle teams. After all, the Formula SAE team is an educational organization; we will teach anyone who wants to learn.

World-Class Engineering

Prior to the competition, the 2005 Team knew that it the 2005 car had what it would take to be in the Top 5. This level of confidence came from 12 months' worth of meticulous and relentless focus on designing for performance and building for quality. Reliability is also equally important as the car must withstand grueling forces in all-weather (rain or shine) for extended periods of time. The car is the combination of evolutionary enhancements of previous cars and the application of innovative engineering by existing student team members. This year saw the introduction of the dry-sump engine lay out. By rearranging the engine's traditional layout to decrease the car's centre of gravity, the team is able to increase the car's vehicle dynamics while improving driver comfort, creating a win-win situation.

The F2005 car on the dynamometer.

The modification and tuning of the 86-horsepower engine took over 6 months as team tries to perfect it. It was well worth the time and effort because the team won 2nd place in the Ricardo Powertrain Award. This is the 3rd time that Waterloo has won a Ricardo award. Two previous Ricardo awards were both 1st Place finishes that the team won in 2000 and 2003. In addition, the 2005 team won 2nd Place in the composites award from the Society of Plastics Engineers. Waterloo previously won 3rd place in the same award in 2004. Parts on the 2005 car that are made of composites include the engine air intake manifold, driver seat, chassis (floor) shear panel, and engine cooling system air duct.

The most important award that the team has won is the 2nd place in Engineering Design. This award evaluates the design of entire car as a whole so the design of every component is critically scrutinized. Since the Formula SAE Competition is an engineering design competition, this award has a lot of significance to the team. Being acknowledged by internationally renowned automotive designers and racecar engineers as a genuine world-class vehicle is not an easy feat. This award proves that the quality and level of engineering at the University of Waterloo is unmatched and unsurpassed by any other Canadian university – or by 99.3% of the world for that matter. Waterloo previously won 1st Place in Engineering Design in 2001, noted by having the world's first properly designed carbon fibre monocoque chassis by a non-professional race team. With the success at this year's competition, the University of Waterloo Formula SAE Racecar Team once again proves that it indeed has world-class engineering skills coupled with technical know-how. In fact, Waterloo has won more engineering awards in the past two years alone than the combined total of all other Canadian teams in the past decade (5 vs. 2). Mechanical Engineering at Waterloo has always been, and continues to be, superior by design.

The 2005 team.

Next Stop – United Kingdom

The competition season is not over yet for the 2005 Team. The team has less than a month to prepare for the Formula Student Competition in United Kingdom, which runs from July 7th to 10th. Formula Student is one of the three other Formula Series competitions around the world. The other two are Formula SAE-Australasia and Formula SAE-Japan. (The team will not attend these two competitions due to its limited financial resources.) The car will be shipped to the UK by sea shortly after the Convocation in mid-June. With the confidence gained from the Michigan competition, the team expects to continue its success while competing against mostly European universities.

Many Thanks

The 2005 Team would like to thank everyone on campus who made this achievement possible: the Faculty of Engineering, the Department of Mechanical Engineering, WEEF, our faculty advisor: Professor Steve Lambert, our team alumni, EngSoc A, EngSoc B, the Department of Earth Sciences, and at last but not the least, the wonderfully staff at UW Main Machine Shop, Engineering Project Shop, UW Sign Shop, UW Graphics, UW Parking Services, and UW Police.

Recruiting for the 2006 Team and Beyond

As the results indicate, the team needs to work on its Marketing Presentation. Thus, the 2006 Formula SAE Team is now recruiting anyone – regardless of year of study, program, or experience – who is interested in helping the team to improve its business aspect of engineering. Some other business aspects of the team include:

- Finance
- Sponsorship
- Public Relations
- Graphics Design

For those who are interested in joining the team the more technical aspects of engineering, below are some areas that might be of interest to you:

- Mechanical Design
- Electrical Systems Design / Integration
- Vehicle Dynamics and Testing
- Metal / Composite Fabrication and Machining

The team always encourages all UW students who share the passion of hands-on, extracurricular learning through a motorsports theme to join us. Today's automobiles are more than assemblies of mechanical parts, and so too are the Formula SAE cars. The team is multi-disciplinary in nature and can provide relevant experience and learning for all.

To join us, please send a brief email to: uwfsae@gmail.com. Please indicate your name, year, program, and area(s) of interest. Or, drop in the 2006 Team's regular meetings on Thursdays at 11:30am, in room CPH 3374.

To find out more about the Formula SAE Team, Canada's premier engineering team, please visit our website at: http://www.eng.uwaterloo.ca/~fsae/ .

Formula SAE Results

UW Formula SAE

Results
(Overall / Canadian)

Overall Ranking:
4th / 1st

Engineering Design:
2nd / 1st

Endurance/Fuel Economy:
7th / 2nd

Acceleration:
8th / 2nd

Skid Pad:
13th / 1st

Cost / Manufacturing Analysis:
14th / 1st

Autocross:
18th / 1st

Marketing Presentation:
44th / 6th

Ricardo Powertrain Award:
For "Innovation and excellence in powertrain engineering"
2nd Place

Society of Plastics Engineers Composites Award:
For "Innovative use of polymer-matrix composites"
2nd Place

Toal Prize Money Earned:
$1800 US

F2005 car from the top.

2005 Group Leaders

Canadian Results

University of Waterloo
4th (812.010)

Ryerson University
10th (729.164)

University of Western Ontario
22nd (614.356)

U. of British Columbia
23rd (611.007)

Université Laval
24th (608.881)

University of Toronto
51st (393.535)

Université du Quebec à Chicoutimi
52nd (390.822)

McGill University
55th (361.637)

Ecolé Polytechnique de Montreal
57th (361.637)

University of Guelph
61st (347.417)

University of Windsor
68th (309.183)

University of Manitoba
75th (267.801)

Carleton University
78th (255.343)

University of Alberta
81st (242.973)

Queen's University
85th (228.553)

Université du Quebec à Trois-Rivieres
97th (195.286)

McMaster University
113th (70.529)

The F2005 car in all its Canadian glory.

ENGINEERING SOCIETY EXECUTIVE REPORTS

Alumni weekend coming up

NICK LAWLER
PRESIDENT

Wow, this term is flying by, and what a term it has been. Midterms are almost upon us, and the Engineering Society is in full swing. The month of June promises to be a fun filled month, with good weather, good events, and good times ahead. Lately I've been working closely with the Architects Student Society (WASA), in an effort to smooth the transition. Currently our biggest challenge ahead is working with Architecture on Frosh Week. Since they are now under the Faculty of Engineering, technically speaking Engineering FOC are in charge of architecture frosh. EngFOC, Architecture leaders and the Engineering Society are currently negotiating with the University to allow Architecture students to have some control over their own frosh week activities. With the intention of giving all the first year students of 2005 a fun filled, informative and successful frosh week.

The first weekend in June will see the annual Engineering Alumni weekend. The classes of '80, '85, '90, '95, '00, will be on campus, where they will socialize, and catch up about the good old days back here at Waterloo. Some highlights will include an afternoon in POETS, and a gala dinner at the Sheridan Hotel in Kitchener.

The Engineering Society also organized a trip in partnership with Engineers Without Borders. The trip was a bus trip to the Art Gallery of Ontario, where participants saw an exhibit called "Massive Change". This exhibit highlighted new innovative designs that could be the next new wave in tomorrow's technology. The Engineering Society has started a new relationship with EWB's Waterloo Chapter, in an effort to open communication, and allow us to benefit from each others resources.

Well, that's it for now, good luck on your midterms, I guess now is the time to unwrap those textbooks. Cheers!

Donations up for grabs

SABRINA GIOVINAZZO
VP FINANCE

So, for those of you who don't know, the budget was shown at the last EngSoc meeting. There weren't many questions at the time, but if anyone does have any about the budget, just e-mail me. I'm more than willing to discuss it. I have copies of the budget in the Orifice, and it will be posted on the website for those that didn't get a chance to see what they were allotted (or if you forgot). If everything goes well then at the next meeting (June 15th) the budget will be passed! (And as long as Feds doesn't mess with me again!)

Now for all you kids involved in groups and need money, don't panic! Here I am at your disposal! All you need to do is ask for a donation. How you may ask? Simple. The procedure for donations is outlined on the Orifice door and linked off the EngSoc website. Donations will be accepted starting June 15th and are due by the 24th at 4:30pm in the Orifice. Donations can be submitted on my desk or in my mailbox. This summer we have $2 500 for donations. That's a lot of money, so make sure you submit a proposal on time!

As always, if you need to be reimbursed for money, just make sure you fill out a form in the Orifice. I'm there everyday trying to get you your money!

Well, keep spending and make your events rock!

Security jobs up for grabs

JASON JAGODICH
VP EXTERNAL

The Essco Annual General Meeting is approaching. UW will be sending 8 delegates to the University of Ottawa for this event (4 A-Soc, 4 Sketch B). This conference will run during the weekend of June 10-12.

POETS PATIO IS OPEN FOR BUSINESS! But in order to keep the patio open, WE NEED SECURITY! To work security at POETS on Thursday / Friday (12-4) you require Smart Serve training. Anyone that has Smart Serve training, would like to help out, and get one of the super extra shweeeet bright red POETS SECURITY shirts, then contact the artist formerly known as Gunnerz.

Also for POETS, the BEER Stein Cabinet is under construction. Personalized POETS/UW ENG Steins will beer available early next week. Approx cost $10.

VP Internal activities report

MIKE BUCZKOWSKI
VP INTERNAL

It's time again to start thinking about doing some schoolwork now that the first three weeks of school have passed. First I would like to thank everyone who came out and participated in SCUNT this past weekend. It was a great event as organized by the Software Class. Engineering Week was also a huge success, thanks to Kate Kelly and Orlando Marquez for doing a great job. Upcoming events that you might be interested in attending will definitely be: Alumni Weekend (Come party at POETS with the old timers!), Beach Days (Get your summer groove on at POETS with the Engineering Maxim Girls!), and Enginuity #3 (What other crazy shit can Harris and Rishi pull off this summer). Check the whiteboard outside the Orifice for more specific dates and info outside the Orifice.

With Alumni weekend coming up I'd like to comment on something that really bothers me about the University of Waterloo. We walk around the place and we can't step on anybody's toes. Engineering is all about tradition, we should be damn proud of those traditions! We need to stand up for ourselves a little more and hold what we believe to be important to engineering dear to our hearts. Enjoy your time here because what the hell, it is only the best five years of your life. This is a call to all of you who love Waterloo engineering, come to POETS, support all those things you love about Waterloo engineering and lets make engineering what it should be and was in the past! The engineering executive is trying to revive these traditions but we need your help, so come out and support us and yourselves.

Scholarships up for grabs

MELINDA HURD
VP EDUCATION

The first month of school is over! Interviews and midterms will begin shortly so be sure to check out your Engsoc Passport or the events calendar in the Orifice to find some fun-non-academic things to. Make time for fun.

I've heard that the large majority of university undergraduate students do not have loads of money to burn – the exception, of course, being those who frequent POETS on Thursdays and Fridays from Noon – 4:00. I would expect that most students would jump at the opportunity to receive FREE, yes FREE, $MONEY$! The scholarship board outside of the orifice is currently under construction – but please check it out and apply for FREE MONEY!

More information will be posted in the coming week. The application process is reasonable and you're very likely to receive any money you apply for since it appears that nobody else needs FREE MONEY. For those of you who may find it inconvenient to walk to school and then walk to the Orifice to receive FREE MONEY; attempts are being made to post the scholarship information on the engsoc website by the end of this term so that in the future FREE MONEY will be even more accessible.

Thanks to Professor Carolyn MacGregor and Professor Wayne Loucks for attending the PDEng forum on May 17th last week and addressing the concerns of the students in attendance. I'd also like to thank Rishi for chairing both of the PDEng forums – he did a fantastic job. If you were unable to attend the forums or if you want more information regarding the issues raised Professor MacGregor's comments will be posted on the Engsoc website soon.

Party on.

Upcoming Events from EngSoc

Sun Jun 5	Mon Jun 6	Tue Jun 7	Wed Jun 8	Thu Jun 9	Fri Jun 10	Sat Jun 11	
		EWB Teleconference w/ Overseas Intern 5.30 pm DC 1302	EWB Discussion Group 5.30 pm at the Grad House Beach Days	Beach Days	Beach Days ESSCO AGM Enginuity III		Check out up-to-the-day event postings on the EngSoc website at www.engsoc.uwaterloo.ca
Jun 12	**Jun 13**	**Jun 14**	**Jun 15**	**Jun 16**	**Jun 17**	**Jun 18**	
			Engsoc Meeting 3 CPH 3385 5.30	A**5 Bowling	MOT	Engineering Convocation	

WEEF: Questions and answers

KATHERINE CHIANG
WEEF DIRECTOR

WEEF is GOOD! The refund period for WEEF is officially over; a big thank you goes out to all those who DIDN'T take their WEEF donations back!

Several questions arose from the refund period, which I'd like to address:

1. Why am I charged the $75 in the first place? If it's voluntary, why should I need to come and get my refund?

- The payment and refund procedure of voluntary student contributions (VSCs) are set by the Finance department, and WEEF is simply following what Finance told us to do.

2. When can I expect the money to be back in my pocket?

- Once Finance receives the list of names who want their refunds, they will credit $75 to your account (accessible through Quest), and at the end of the term, if the school owes you money after all the number crunching, you will get a cheque in the mail.

3. Why should I contribute to WEEF? Shouldn't the school be paying for the stuff WEEF buys?

- The school runs on a limited budget, as any other institute would. One of the uses for WEEF, is to help and supplement the departmental purchases, so instead of buying a piece of equipment in 2 years, they can have it in 1, which translate to more new equipment, faster.

Some quick updates:

Proposals are being accepted until Wednesday June 22nd. The submission guidelines are posted on the WEEF website. The submission MUST have both a soft copy (diskette or emailed) AND a hard copy (can be dropped of at the WEEF slot in the Orifice). All proposals must be presented at the funding council session (date and time TBA).

As some of you may be aware of, changes to the WEEF by-law have been proposed, to further clarify some of the items in the by-law as well as a much needed update. In the winter term, there wasn't enough WEEF reps present to meet quorum, therefore the by-law changes was not approved. The funding council meeting which was scheduled tentatively at the beginning of the term for review and approval of the by-law is being rescheduled. An email will be sent in the next few days to the WEEF reps.

Architecture has officially joined Engineering as of this term, and will also be part of WEEF in the future. The details were discussed, and will be made available on the WEEF website ASAP.

The refund statistics are being processed at the moment, and should be available in the next issue of IW, so stay tuned!

UW Forum for Independent Thought

RAJAT SURI
3A CHEMICAL

The UW Forum for Independent Thought is a student think tank whose mandate is to tackle critical world issues by applying students' creative problem solving skills and critical thought processes. Our goals include:

• Encouraging the free exchange of ideas
• Furthering students' knowledge and understanding of problems beyond academic curricula
• Establishing the capacity for students to engage in high quality research with the potential for international impact
• Developing students' problem solving abilities
• Educating the broader campus population on the issues being investigated
• Motivating students to grow as humanitarians
• Building networks between professors and students with shared interests

"... a means for ... students to tackle economic, social, and political problems. "

There must be something we can do that will make a difference to improve the status quo for people around the planet, but what? The answer is this… it's ideas. It's policy. It's independent thought. It's using the same creativity we use every day to solve meaningless homework questions in a far more useful fashion – to solve real problems affecting real people.

The Forum for Independent Thought will serve as a means for us to come together as students and tackle economic, social, and political problems. By harnessing the innovative energy and resolve of UW students and directing it towards real life issues, UW FIT will enable participants to gain a deeper understanding of current issues. FIT aims to help students to actively consider what action is required both from us as students, and from those who are closer to the issues.

The think tank will research and seek solutions to clearly developed problems. For example, the UN Millennium Development Goals state comprehensive and well-defined poverty reduction targets. We can begin with this as a framework and build an understanding of the critical world issues. On Thursday June 3, a single issue will be selected for further research.

Professors will often attend meetings to share their thoughts and ideas on current problems around the world. Possible attendees this term include Robert Kerton, Jan Narveson and Larry Smith.

Meetings: Thursdays 5:00pm, Student Life Center (SLC) 2134

Retro gaming: Super Mario Bros. 3

JONATHAN NG
6N COMPUTER

I grew up just after the era of the Atari and the Commodore 64, and just in the era of the first generation consoles by Nintendo and Sega. As a kid, the NES was pretty darn good – the controls were solid, the graphics were decent, and most importantly it had a very good stable of games. One of those games was Super Mario 3, and it was one of the games I rushed out for as soon as it came out. It was a very, very innovative game for its time and I had a lot of fun with it.

One of the things that impressed me with this game was the incredible variety of things you could become. That aspect was improved a lot over the original Super Mario Brothers, where you could only pick up a fire flower and starman. The starman is the same old starman – you picked it up, you run into enemies, and enemies die. You could have still picked up the same fire flower and throw fireballs, but you could also have picked up one of the many leaves and become a raccoon instead. With enough speed (or a P-wing) you could fly over obstacles and even find secrets. In addition, there was the tanooki suit, which had the powers of the raccoon and you could also turn into an invulnerable immobile statue as well, the frog suit which made swimming a lot easier, and the hammer brothers suit, which let you throw hammers and protected you from fireballs. You could have also grabbed a giant shoe from a goomba and stomp around!

Another thing that impressed me was the variety of items you could get from the game, something that hasn't been matched since. There are literally piles of strange items that did many different things that you could equip before going to a stage. In addition to the usual super mushrooms, fire flowers, and raccoon leaves, and the other strange suits that you got, there was the warp flute, which warped you to a higher level, the music box, which prevented hammer brothers on the map from moving around, the anchor, which stopped an airship from moving around, the hammer, which allowed you to break rocks in the way, the jugem's cloud, which allowed you to skip levels, and the P-wing, which gave you the ability to fly at will for one level.

Those items were needed for the huge variety of levels that you encountered – each of the 8 worlds has a theme, and the creativity that was put into them – like the giant world, with giant goombas and koopa turtles, and the warp pipe world, where everything linked to each other by warp pipes – was astounding. It's a refreshing change from the current state of the art of realistic but uncreative graphics.

The game has been reprinted several times, once as part of the package Super Mario All Stars for the Super NES, and more recently as Super Mario Advance 4 for the Gameboy Advance. It's a game I would recommend you try if you haven't already.

Morty's = Wings

JONATHAN NG
6N COMPUTER

Morty's
272 King Street North
Waterloo, ON

So there we were, a bunch of guys and girls out for a nice time, and we were really, really hungry. What did we do? Everyone in my group agreed to Morty's, just North of University and King. We figured, hey, it was cheap wing night (Mondays and Thursdays), and we couldn't go wrong with chicken wings.

The wings are 49 cents each with a drink, and they're humongous. My friends ordered just 6, and that's most of a meal right there. As for the flavours, there's always the normal mild, medium, hot, suicide, and more mundane types such as the honey garlic, always a favourite, and the wet Cajun. The honey garlic is nicely done – they don't slather so much sauce that you would eat half a wing's weight in sauce, and the wet Cajun is also good, it's spicy without being hot. If you really crave spicy, though, you'll probably need suicide wings. The hot wings aren't too bad, but most of the spice is in the oil itself.

We also had a plate of nachos to go along with the wings, for variety. The nachos are loaded with toppings, which is always a plus. The chips are nice and crispy, though I find that the cheese doesn't melt so well.

The service is very good, although it sometimes gets slow when there are a lot of people, though the night we went, the food came really fast.

Overall, I'd recommend it, it's a very good place if you're in a mood for "pure" bar fare.

Charobeam cooks: A sweet treat

CAROLYN SUTHERLAND
1B MECHANICAL

Everyone loves peanuts and everyone loves sugar, so the genius who cashed in on the idea of combining the two was none other than the brilliant Dr. Peter Brittle. He invented the tasty treat and is now a wealthy resident in Barbados - no, not quite. I invented peanut brittle.

Peanut Brittle
Prep: 5 minutes
Cooking: 10 minutes
1 1/2 cups of shelled peanuts
1 cup sugar
1/2 cup of corn syrup
1 tbsp butter
1 tsp vanilla
1 tsp baking powder

1. In a microwaveable bowl, combine shelled peanuts, sugar and corn syrup.

2. Place the bowl in the microwave for 4 minutes on high power. Stir and return to microwave for another 4 minutes.

3. Add butter, vanilla and microwave for 2 minutes. Add 1 tsp. baking powder and stir until the mixture becomes pale and foamy.

4. Place a sheet of well buttered waxed paper on a baking sheet. Pour the mixture on it and spread out into a very thin layer with a knife. Let cool; break into pieces and eat.

The corn syrup is a bit exotic; but you can probably find it in the baking section of a supermarket. An animated dolphin was friendly enough to give me this one. You can see him at theworldwidegourmet.com. If you are the inventor of peanut brittle and want to sue, warn my lawyers at csutherl@engmail.

POINT VS. COUNTERPOINT

Star Wars Episodes IV - VI: All style, no substance?

With the arrival of Episode III, the story of Star Wars as told by George Lucas comes to an end. In this Iron Warrior, the circle is now complete as former ASoc editor ANDRE BELTEMPO and current ASoc editor DAVID YIP discuss what made the trilogies so popular. Was it all special effects?

ANDRE BELTEMPO
4A MECHANICAL

It's the effects, stupid! We've heard it before, but let's put the cards on the table, Star Wars, despite the hype, was not truly a great movie series, and really only succeeded due to brilliant effects work, certainly not due to some transcendent story, characters who stood the test of time or whatever. I personally do not believe that a movie that does not combine all the required elements into a cohesive movie experience should be deserving of the attention that Star Wars has received.

"...Terrible dialogue, flat acting, and predictable plots"

If we look back at the 'original' three, we will find a fairly standard B-movie plot line, replete with all of the requisite B-movie elements; weird looking aliens, guys with bizarre clothes and wacky helmets, robots that were obviously just people dressed up funny, people with British accents popping out of the outer rim of the galaxy, etc. The single thing that marked Star Wars from all of the other late 70's B-movie trash was the special effects. And they were tremendously, earth-shatteringly spectacular for that time. We tend to forget this, as we've been kind of spoiled of late.

Ex-editor has gone over to the dark side.

When I was 5, we had taped The Empire Strikes Back, and I recall playing and replaying the Hoth Ice Planet battle scene over and over, until the tape literally degraded. As a kid, I was completely blown away by those scenes. There was nothing close to them in terms of movie battle scenes for at least 10 years after, they were so far ahead of their time. I used them for inspiration when I used to play with all my toys, and that's why I loved watching them, not for any deep-rooted metaphors of life, brilliant script, or stunning messages. Being a boy who liked watching things blow up, Star Wars did it the best for a long time. So, this sounds like I'm saying Star Wars affected my life significantly, which would undermine my point, right? Wrong. Star Wars absolutely did affect me, but only insofar as it had ridiculously cool special effects. I was perfectly willing to put up with any other cinematic stupidity as long as X-Wings blew up TIE fighters beautifully. If Star Trek had had those effects, then I would've just as easily accepted polyester and pointy ears as I accepted idiotic droids, guys wearing fur, stupid helmets and bumbling guys wearing plastic football gear. The most damning evidence against Star Wars was, in fact, brought about by the release of the new episodes. Although they, too, are replete with special effects, I highly doubt that a new generation of 5 year olds will be any more hooked by the new episodes than they are by any of the other myriad movie offerings with CG these days, especially considering they can get almost 'cinematic' effects quality from the multitude of video games that exist today. The number of movies using effects of Star Wars' caliber renders comparisons essentially pointless, as there are now far too many. Movies are now made entirely by CG, and this blurs the line even further.

So, now that Star Wars has been leveled in terms of the effects, the real analyses of the movies themselves begin, and what do they show? Terrible dialogue, flat acting and predictable plots. Once the effects are stripped away, then, the series has precious little to recommend itself, and this has been reiterated time and again. Obviously Star Wars is financially successful, of this there is no doubt, but I suspect the vast majority of the 'die-hard' fans are the ones who were absolutely flummoxed by the dazzling effects of the first three movies, and are sustaining the franchise based on that history. Compared to other movies today, Star Wars shows it's true B-movie script, and George Lucas has been bending himself into knots to try to attract new viewers: Jar-Jar Binks, Natalie Portman in low-cut dresses, and even a PG-13 rating to 'darken' the final release, Episode III. Nothing has worked, and I highly doubt that 5 years from now, children being born today will be constantly replaying the space battles in Episode III on their DVDs. We'll be far more likely to find them on their PCs, playing Half-Life 3.

Editor's Note: *The views and opinions expressed here do not necessarily reflect those of the author(s), the Iron Warrior, or the Engineering Society.*

DAVID YIP
3A MECHANICAL

A long time ago, in a galaxy far far away... You can practically hear the score, can't you? 25-ish years ago, George Lucas and his crew released a trilogy of movies that changed the landscape of the cinematic world. My predecessor argues that the merit of the trilogy lies solely with its special effects - I would argue that this is not the case.

I will be honest - the trilogy never contained Oscar-class acting, nor was the script supposed to be any approximation of Austen or Shakespeare. However, the acting was in a word, spunky and convincing, and conveyed their characters quite well. And the characters made the movie. Likeable characters, that I would argue were not predictable! We have a space pirate who discovers a conscience, a damsel in distress who commandeers her own rescue, etc, etc. The plot, while not terribly original, was not pretentiuos - a classic epic adventure of good versus evil. Ancient stories such as the Iliad and the Odyssey, to modern ones such as Harry Potter, the Lord of the Rings, the Lion King, etc, have all followed this plot layout to great success.

"...Stephen Harper eats babies!"

Editor after a late night of layouts.

The added intrigue of high technology set against the ancient mysticism of the Force, the the order of the Jedi Knights, along with a rich backdrop of alien species and a galaxy humming with activity sparked the imagination of audiences the world over. The special effects merely served to bring these ideas to life, without the story, the effects would have been hollow and pointless. Similar universes have been created in Star Trek, with its multitude of alien species, each with their own culture, civilization, and language. This discounts the fact that Star Trek itself has less than impressive special effects, with almost every species being a humanoid of some sort, plus some crazy face makeup. The Lord of the Rings also has a similar formula. The point of it all is the viewer feels immersed in a new universe, which effects can help, but not do so alone.

A film does not need to be deep or meaningful to be good. In fact when you attempt to forcibly inject these elements into a movie, it becomes quite tiresome. The two sequels to The Matrix are my best examples, all this pseudo-intellectual discussion about choices and the lavish use of expressions such as "vis-à-vis" and "ergo" left me snickering rather than enlightened.

Andre argues that the relative failure of the new trilogy is because fans are unimpressed by the effects against the contemporary proliferation of advanced CG (Started by Lucas himself, mind you.) I would argue that the failure of the new trilogy is due to flat characters, uninspiring dialogue, and a too-complex plot. Instead of the adventure of good vs evil, we have politics, trade missions, and backstabbing. If we wanted that we could just read the news. Belinda Stronach crosses the floor! Stephen Harper eats babies! Entertainment Online sums it up: "The result is no snappy lines, no romance, scant heroism and barely any likable characters. Being amazed has never been this boring." No snappy lines. The originals were full of snappy lines and likeable characters. He's been bashed before, and I'll do it again: Jar-Jar Binks? What the hell? Effects amazing, but how his lines didn't end up being converted to egg cartons in a recyling facility are far beyond me. While the dialogue in the original trilogy may have been a bit campy, it was at least funny and quotable. The fact of the matter is that people change, and George Lucas is a person. The fact that he created a cultural icon 25 years ago does not mean he can do it again. He's getting to be an old man, perhaps his powers are getting weak.

If special effects were the only reason for the success of Star Wars, fans would have ditched it long ago, as it was made with 25 year old technology. If the characters were truly forgettable, would they be so quotable after all these years? Only a certain segment of the population is truly wowed by special effects, and yet Star Wars is a cultural icon. "Make it so!" will never approach "May the Force be with you."

Perhaps kids in the future will play their newfangled photorealistic computer games, heck, I do, but I bet that if you showed them a story about a farmboy, a space ace, and a spunky princess taking on an evil empire against all odds, they'd still be enchanted.

Comments from the PDEng feedback session

...continued from Page 1.

of the course content in the first release of PDEng and saying, "I take full responsibility for that" and that there was a "just in time delivery system" for the course that ended a week before classes.

She also left us with three questions: What specific content could have been added to better match your coop experience, which PDEng15 modules would benefit from additional examples to help clarify content and skill requirements, and what content related to critical analysis would you think would be beneficial in PDEng 25? These questions, while admirable in their intent to improve the course, still ignore other questions, like: What content could have been left out or been made optional in order to save time for people who are already familiar with this information, which PDEng 15 examples were extraneous to the course, and what do you already know about critical analysis?

After this, the forum was left open to the students to ask questions. This is where it gets interesting, and it will be further detailed in the next issue. Also, answers to Professor MacGregor's questions should probably be directed to her.

Support your concrete toboggan team: Buy a boggan burger!

JAMES JOHNSON
4A CIVIL

It is a hot Thursday afternoon on the P.O.E.T.S. patio and you have a cold beverage, what could be better? It could only be better with a cheese burger with hot peppers. Fortunately this story is not a fantasy; it happens all summer long on the P.O.E.T.S. patio. The Water-lugers will be selling 'Boggan' burgers to fundraise for the Great Northern Concrete Toboggan Race 2006.

The cost of a concrete toboggan is nearly $20 000. Thanks to loyal support on campus a substantial amount of our funding is from staff and students through 'Boggan burger sales. The burgers are sold every Thursday at lunch beside P.O.E.T.S. patio. M&M Meats tasty burgers or veggie-burgers are sold for $2. Please help send the Water-lugers to our upcoming event.

Waterloo's team for the race are the Members in Tension (Civil '06), and have named the team the Water-lugers. The G.N.C.T.R. is an annual national competition which will be taking place in Montreal, PQ this coming February. Each team designs and builds a sled according to stringent rules. Most importantly the only sled material allowed to contact the snow is concrete, hence they are concrete toboggans.

The toboggans are traditionally judged on their time to complete a course and the breaking distance. This year there will be a third trial, where the toboggans must successfully steer a course. The performance on the slope is important, but like a co-op term, the final evaluation is not based on performance alone. Technical presentations and displays are judged as well as the team's theme and spirit.

Waterloo has a strong reputation for technical performance on the slopes and in the presentations. The Water-lugers hope to add spirit to our school's reputation. The Oktoberfest theme is a perfect match for the celebrations which take place each night of the event. Support this tradition and enjoy a buçrger with your beverage every Thursday!

A student purchases a delicious burger - a burger made with love.

Boomers Gourmet Fries: Fries with Attitude

CINDY BAO
4A ELECTRICAL

Boomers Gourmet Fries
26 Erie St.,
Stratford, On
(519) 275-3147
http://www.boomersgourmetfries.ca

A fish & chips combo or a burger + fries + a soft drink, plus tax: $14

I would not be classified as well traveled, but for once I moved away from Toronto and KW to the city that became my home for four months – Stratford. Because of the Festival, it has a rather high number of restaurants per capita, mostly located around the downtown core.

Boomers Gourmet Fries, true to its name, serves about ten different choices on the potato strips alone ($3-5), from your standard French fries to the sweet potato variety, none of which overly greasy. However, what really make this place stand out are the toppings. For the salsa fries, the tangy tomatoes contrasts nicely with the fries, and the sour cream and cheddar add a bit of extra decadence.

The two cheese poutine, with cheddar and cheese curds, is flavourful. The goat cheese poutine is definitely addictive. A scoop of soft goat cheese, when mixed with the gravy, gives a creamy coating over the fries. The addition of the basil oil has just the herbiness needed to complement it all.

The joint is not limited to the fries alone, it's also known for their fish (Haddock!). It is thinly battered and fried to a golden colour, none of the puffy coating drenched in oil one gets just too often. One of my dining companions who had the fish and chips combo ($10) points out the fish is slightly dry, which happens rather often with the delicate haddock when it's not at its most fresh. For me, having never grown up by the ocean, I just happily munch on my fish on a bun ($5.75), although a bit bland for my liking. The coleslaw, on the other hand, can do with more creaminess.

If fish is not your thing, Boomers has an impressive selection on burgers too ($7). The chef's creativity shines through on this menu as well, boldly experimenting with different ingredients to go along the beef. A combination of Brie, grilled onions & Dijon mustard definitely isn't what you can find at every neighbourhood diner (I must confess I haven't tried it but it's on the to-do list). One friend very much enjoys his burger topped with jalapeno and havarti, a nice spiciness. He finds the solid beef patty worthwhile, but complains the portion being too small.

The space is limited in the store. A recent renovation has added a long table for dining-in, which fits a dozen customers, all sitting elbow to elbow. But nobody seems to mind, especially if you are there for the poutines.

Massive Change: The future of global design

DAVID YIP
3A MECHANICAL

Sitting on the bus so graciously organized by Engineers without Borders and the Engineering Society, I wondered what I was in for. Advertising for the exhibition had been coy, with a single image enough to pique your interest, followed by some contradicting reviews of the exhibition given by a local paper. Accompanying me on the bus was a smattering of Systems kids with their iPods. This is what I found:

"The 20th century will be chiefly remembered by future generations not as an era of political conflicts or technical inventions, but as an age in which human society dared to think of the welfare of the whole human race as a practical objective."

Historian Arnold Toynbee (1889 – 1975)

March 11th to May 29th saw the exhibition of Massive Change, an exhibition put on by Toronto based designer Bruce Mau and his Institute without Boundaries. Containing different collections of next-generation designs, objects, ideas and technology, it painted a largely optimistic picture of humanity's fate, that we will not choke or poison the earth to death, that millions will not continue to starve, that our state of the art allows us to connect and solve problems as never before. In contrast to the constant media-fed stream of doom, Massive Change assembles innovation from the world over, ideas such as sustainable buildings, green roofs, clean mobility, social entrepreneurship, microlending, advanced imaging and data collection. Ideas that, working together, could bring about Massive Change in the world.

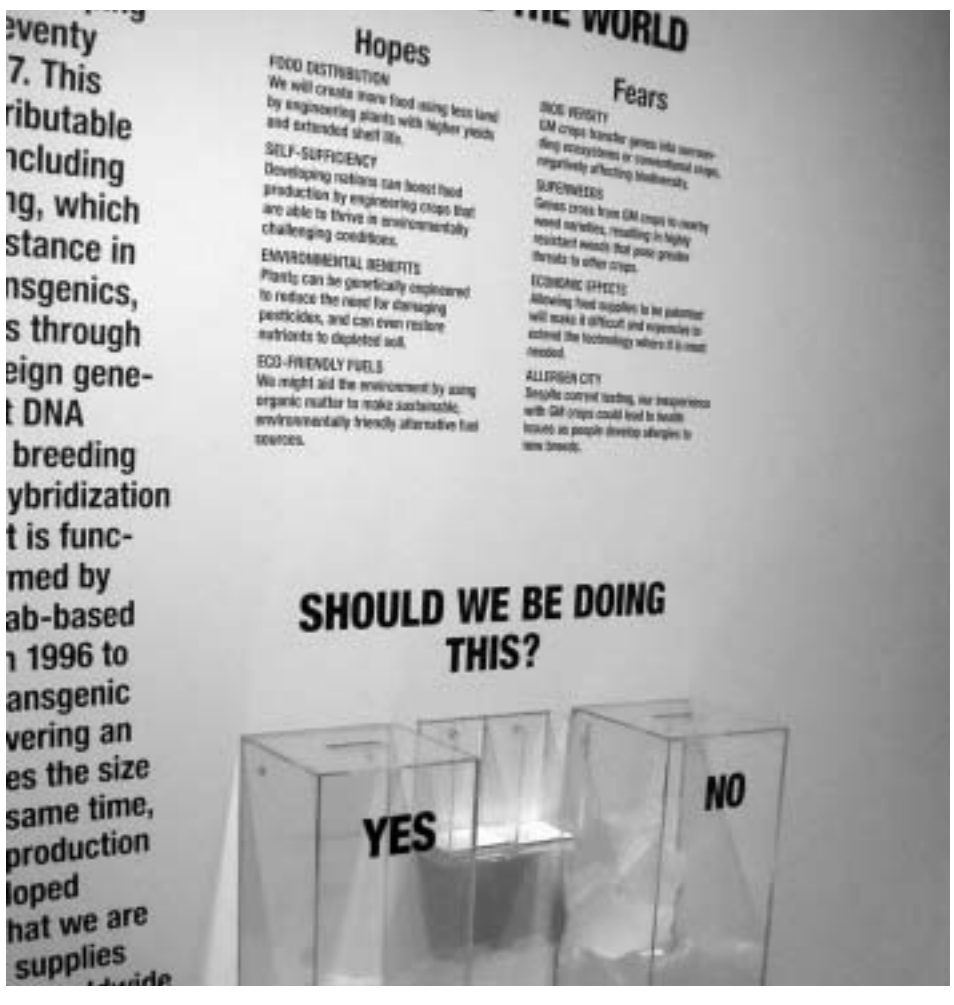
The exhibition is divided into several "economies" or themes. These themes include Urban, Movement, Energy, Information, Image, Market, Material, Military, Manufacturing, Living, and Wealth and Politics. Within each economy, the exhibition showcases the newest ideas from that field. I'll talk a bit what I took away from each economy, as well as any relevant projects going on locally here at school.

In the Urban Economy, the exhibition championed the development of sustainable living through efficient homes and new concepts such as green roofs, urban farming, local power generation, and greywater collection. Density, however, was given as a key point in sustaining our ever-increasing presence on the earth. Population density enables extremely efficient delivery of transportation. people, energy and services. Heating an apartment complex is more efficient than a sprawl of suburbs. Mass transit works far better with high population densities than lower ones. Services such as pizza or grocery delivery are far more feasible with high population densities. Furthermore, high population densities encourage shared spaces, creating the possibility of more social communities, a far cry from the so-called "communities" of single-family-detached-homes. Here at Waterloo, a green roof on campus is the goal of GROW (Green Roofs Over Waterloo), a group of "students, staff, and faculty with a passion for sustainable development and environmental design."

In the Movement Economy, the development stair-climbing electric wheelchair was shown through its many prototype stages. A number of electric cars were also on show as evidence of the effort in developing sustainable transportation, as well an improved, more efficient bicycle taxi for use in developing countries. Somewhat oddly, not much mention was made of the trend towards hybrid vehicles, and large (but debated) potential of hydrogen vehicles and the hydrogen economy. In this aspect, Waterloo has the Midnight Sun solar car team, as well as the University of Waterloo Alternative Fuels Team, which is at the moment working on ChallengeX, a competition to modify a Chevrolet Equinox to run on an alternative fuel. Waterloo is one of the few, if not only team using a fuel cell to power theirs.

In the Energy Economy, examples of high-efficiency biomass furnaces were on display. 16 million people are quoted to die each year from indoor cooking with inefficient makeshift stoves or open fires. 50% of worldwide deforestation is a result of biomass destroyed for fuel. Efficient designs that use 50% less fuel and emit 95% less smoke can go a long way towards saving those lives and forests. An solar energy map was also painted of the world, and it was revealed that many places in the world could profit off the solar energy they receive, if it were properly exploited.

Exhibition of the Image Economy



Vote box on genetically modified food.

The Information Economy room reveals the immense capacity of modern technology to collect, process, analyze, and visualize data. Several images of the Earth were shown in a dark room – for example NASA's 1969 shot of the Earth, an earthquake map, weather simulations, ocean currents, current air traffic, Internet connections, etc. What it reminds me of most is SimCity. Those who have played the game will remember the crime maps, fire risk maps, maps of water services, pollution density, traffic density, etc. This kind of single-point data visualization is made possible by today's computers and software, and softies take heart, this is where I imagine your place the world. I'm going to coin my own buzzword here and call this total information availability the datasphere – the capacity to see any system rendered in any of its relevant data with the click of a mouse. Eventually, to explain a bad decision you'll either have to lie about the information you had, or be just plain stupid.

In the same vein of the Information Economy was the next section, the Image Economy. The exhibition space of the Image Economy surrounded the viewer from all directions with images to illustrate the full impact of the picture in our modern lives. PET (Positron emission tomography) allows us to take virtual sections of human beings. Backscatter x-ray technology gives detailed ("Too detailed!" say privacy activists) images of anything you point them at. Using rays from all over the electromagnetic spectrum, from gamma rays. Photography which once-upon-a-time required 1-hour waits to have your film developed, now offers instant gratification along with instant distribution. Imaging chips mean cameras are now everywhere, and the ever-decreasing cost of memory means that people are shooting more than ever before. The proliferation of pictures lets us see what we may have never seen before, be it immigrants in a trailer or torture in Abu Ghraib. More and more it is getting harder to keep a secret. Dare I say pictures will set us free? Witness, an organization based out of New York thinks so. Witness provides video cameras and training so that groups all over the world can document human rights abuses.

The Market Economy is the economy with which we are most familiar. Though largely devoid of tangible objects to see, the market economy is about ideas. In a world where activists routinely protests the actions of the World Trade Organization, the policies of Free Trade Agreements, and the employment conditions of companies of say, the Gap, we do no traditionally associate the market with positive world change. Massive Change argues that we can, with innovative ideas such as microlending, and institutions such as Ashoka. Ashoka adapts the venture-capitalism model to "social entrepreneurs", providing seed money to persons or groups with ideas with potential. The concept of microlending is to lend relatively small (C$100) to persons to poverty so that they can start their own businesses. As stated by Accion – a microlender in South America:

...continued on facing page A.

Shut up! And other things you should already know.

ANDREW DODDS
1B MECHANICAL

Don't you talk back to me mister! My parents would always tell me this. At first I didn't know what the heck it meant, but eventually I was able to figure out what kind of things would keep me safe, and what things I could say that would get me a swift bare-ass spanking or a bar of Dove (not really so soft) in the mouth. That was just one of the many lessons I learned from my parents, and would later find to have helped me out a lot. We all know our manners do we not? We all respect our parents right?

Sadly though, it hurts me to say that once we leave the door, all of those lessons and all that respect gets just seems to vanish into thin air. It blows me away to see how people act some days. I just can not believe how disrespectful and downright intolerable some people can be. I do not know if it was bad parenting, a poisoned environment, or just a bad attitude, but sometimes I really wonder. I always thought it was Queen's to be the snotty nose-up-in-the-air school, and UofT to be the cocky-ass bunch. It seems that the chickens have come to roost at Waterloo.

Every day when I go to class now, I can hardly believe what my eyes see. Not even the kindest, most fun teacher (Physics' beloved Rohan) can get the respect he and ALL other professors deserve. No, he has to interrupt my class several times trying to find out who can not be quiet and let him teach in peace. Later on in other classes the critical lesson will become muddled as the distinctive "New MSN message" ping goes off. More disruptions continue from people who are not showing enough respect to save eating for outside after class, ruffling a bag of Ruffles or the sharp crinkle of leftovers wrapped in tinfoil, trailed by the chewing of someone who was not aware that we were blessed with lips and teeth so that we could stifle those sounds with a closed mouth. Honestly, what kind of people are we when we can hear a dozen different conversations going on during lectures, but never the ones coming from the teachers?

I am disappointed, really I am. Every time I see someone who does not understand how to whisper or how to show up on time or quietly for class, it hurts. This is not the attitude and mentality to have, not now at university. When you act as though you are more important than the teacher or all your other classmates, how much success do you think you can ever expect? This is not High School anymore, where teachers would baby you to get your marks high enough to get more funding; they have your money now, and if you do not play the part, there's nothing to stop them from sending you home with nothing.

"... they have your money now, ...there's nothing to stop them from sending you home with nothing...."

But it's more than just that. It's that kind of what-can-everyone-else-do-for-me attitude that's causing problems within the Engineering Faculty itself (sadly it is growing more prevalent everywhere, every day). Teachers feeling less compelled to teach will do just that: teach less and less well, because they have had their zeal and enthusiasm stolen. The backlash is that you will never be as well prepared as you could be, and you will miss out on getting ahead, and learning the little tricks that your prof has no time to discuss because of all the interruptions. No more detentions or lines or slaps on the wrist: when you dick around, it's you that you're hurting the most.

This is especially true when people start to get lazy, feeling that their fifty thousand dollars has already bought them their degree, and that they need not do anything else to earn it. I spent an evening talking to my Don/TA and he showed me his students' quizzes and assignments, pointing out the matching pairs by students who could not be bothered to do the work themselves whether they knew it or not, and who would now be getting zeros and lovely remarks to follow them forever in little paper trails. When I hear about scams to cheat on exams, I feel nothing but sadness. If you leave here this term without learning the lessons, you are not going to get paid to sit around and look it up in a book during your next co-op job, or when you make your first foray into the real world.

The students I have seen have to wake up and realize that this is not a children's game anymore: it's the real deal, and it's the rest of their lives. I have already seen students held back to repeat a year after only one term. Maybe in high school it was cool, making you the senior and all, but now it costs you a decent five figures, and that "extra experience" does not shine too brightly on a resume or transcript. The same goes for attitude: every engineering undergrad learns the same stuff, so when it comes down to having to hire based on everything but the grades, you can always bet that somehow all composure will be lost, and the truth behind the engineer will become hideously clear.

Now I know this is not what you want to hear, and I know that I am not your mother. It still remains that whether or not I have blown this way out of proportion, whether or not I have hyperbolized or over-emphasized my points here, none of that matters. What really does matter is that this is a problem, and one that teachers and employers are beginning to spot from a mile away. I know I am not going to be able to fix it myself, and I accept that in all likelihood many others might not change one bit for the better after reading this. I do hope however that some people might pick up on some of the things brought to light here and the deeper seated issues, and realize that these things can and will hurt them. I am confident that many may very well be offended with what I have said and the accusations that I have made. If I can get through to just a few people, and encourage them to straighten up in class, and save the wild and crazy for the right time, it will have most certainly been worth any and all trouble I run into. Really, that's all I'm trying to do: help you out.

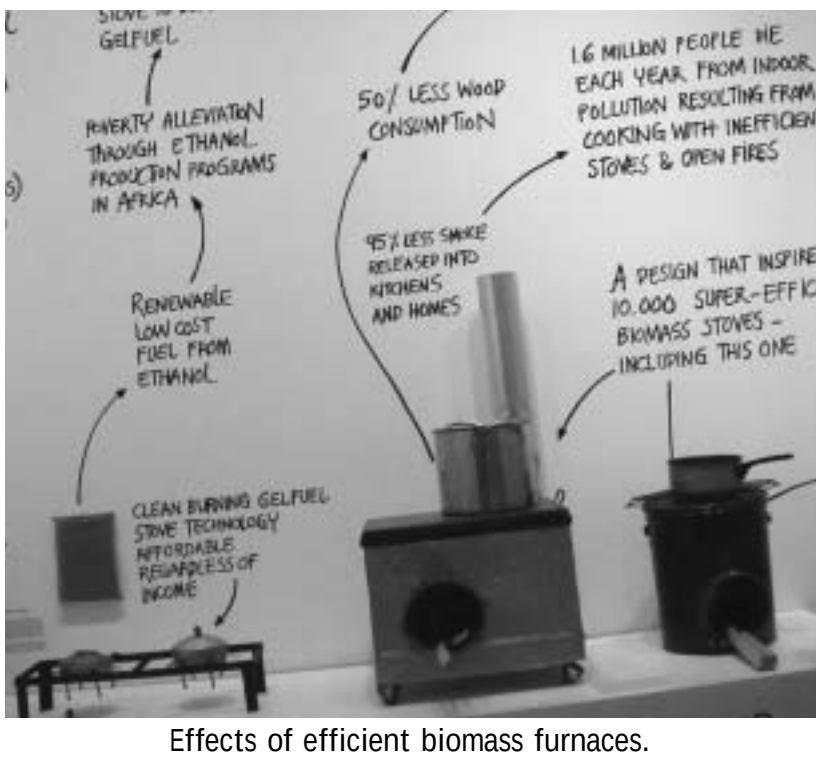
"Now that we can do anything, what will we do?"

...continued from facing page.

"By providing "micro" loans and business training to poor women and men who start their own businesses, ACCION's partner lending organizations help people work their own way up the economic ladder, with dignity and pride. With capital, people can grow their own businesses. They can earn enough to afford basics like running water, better food and schooling for their children."

The Material Economy highlights the latest advances in materials technology. Where in the past materials have had no inherent design of their own, this is changing. Smart materials that adapt to temperature changes, plastics that self heal on fracture, self-cleaning glasses, these all represent something new: Not just design with the media, but now design of the media. In the case of self healing plastic, a multidisciplinary team of scientists at University of Illinois at Urbana-Champaign have "designed a biomimetic polymer with embedded capsules full of "healing" liquid that, upon rupture, self-corrects cracks in plastic and fiberglass." Of course no discussion on the future of materials is complete without nanotechnology, and heck, we're starting the nanotechnology engineering program right here come Fall.

The Military Economy showcases the contradiction in our relationship with the armed services: Despite its ostensible purpose to destroy, the military is still one of the "most powerful engines of technological innovation and design." Spin-offs of military technology such as GPS benefit us all, and spin-ons of civilian technology such as hybrid drives save the military fuel. Krazy Glue was spun-off of research into clear plastic gunsights, then spun back on as a suture for battlefield surgery. The latest spin-on is consumer computer technology, the graphics cards and game engines that power military simulations. Still, for the cost of two aircraft carriers, we could supply the world with sanitary water for a year. "Where are our priorities?" the exhibition asks. We could build homes for every homeless family in the United States, or we could develop the Comanche helicopter and the Navy Joint Standoff Weapon.



Effects of efficient biomass furnaces.

Manufacturing Economy illustrates the changing face of making large amounts of anything. From recyclable designs to green plants, to processes with a zero landfill stream, the stereotype of smoke-belching sludge-spewing industry is beginning to fade. Ford's new plant in River Rouge incorporates a green roof and power generation from paint vapours. Toyota's stated objective is a zero-landfill stream assembly process. For everyone one of us who has spent weeks composing work instructions or making ISO 9000 or 14001 binders, there is a point to all of this.

The Living Economy presents to us the frontiers of biological engineering. From chickens without feathers to genetically modified crops, it was also the most controversial. Stem cells may give us the cure to many afflictions, but opens a whole whack of ethical discussions. Given the controversial nature of the exhibit, vote boxes were given at each example. Will we one day just grow a block of chicken meat? Can we solve world hunger? At what risk, and at what cost?

Walking through the exhibition, one grows hopeful. Perhaps we can end poverty. Utopia it will not, but this unfathomably wide chasm between living standards may close. With the Internet and information, data, and images on tap, it is getting harder to hide, to keep a secret, to be ignorant. New ideas and innovation can spread like wildfire, accelerating the pace of change. In fact I felt a bit overwhelmed. "Where do I start?" I asked. Should I work on sustainable mobility? On developing the datasphere? On revising the economic model to account for environmental impact? Massive Change echoed my concerns and asks: "Now that we can do anything, what will we do?"

Massive Change also proposes an answer: quoting a composer named John Cage. When paralysis sets in from not knowing where to begin, just "Begin anywhere." Everyone has their part, and more than ever, it is possible to make the world a better place.

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.*

Midnight Sun VIII - NASC2005 Pre-Qualifying Action

QUOC HUY T. LE
MIDNIGHT SUN VIII

Every two years (usually odd numbered years) the US Department of Energy sponsors the American Solar Challenge. It is a race between two cities involving solar cars built by participating American and Canadian universities. This year, National Resources Canada is also a major sponsor because part of the race will take place in Canada. The North American Solar Challenge (NASC2005) will be a ten day race from Austin, Texas, USA to Calgary, Alberta, Canada and will occur during the last weeks of July.

The University of Waterloo is one of the very few teams who has qualified and raced in every American Solar Challenge to date. This year was going to be no exception. With that said, we began work on our new solar car back in September and completed what we could before trucking Midnight Sun VIII (nicknamed Dorothy, I'll tell you why later) off to the pre-qualifier.

For those of you who aren't familiar with the process, there is a preliminary qualifier in which teams can take their solar vehicle (or what they have of one) to be systematically scrutinized for safety, durability and overall highway road-worthiness. There is also a last chance qualifier before the race in July so that teams can prove their design and enter the race.

Topeka, Kansas has been a favourite location to hold the pre-qualifier since there is a track at Heartland Park of which was made use. The preliminary qualifier took place during the week of May 16. During the first two days teams had to get their car approved at the mechanical, electrical, body/sizing, battery and solar array stations. Once that was done the teams were permitted to proceed onto dynamics which tested their vehicle's turning and braking abilities. The remaining three days were reserved for obtaining pre-qualifying laps around the track; 58 laps (at 2.1 miles per lap) were required to pre-qualify the car and the team to participate in the race. The more laps you got, the higher your starting position in the race line-up.

For the twelve Midnight Sun VIII team members that accompanied Dorothy to Kansas, the week was one of tiring labour, sleepless nights, heartbreaking anguish and grateful joy. Stick around for a bit as I take you through the incessant ups and downs of our adventures in Topeka, Kansas.

Monday:

most of us had a relatively restful nights sleep at the campsite after 24 hours of consistent driving. We arrived at Heartland Park and registered. The name "Waterloo" was near the end of the alphabet. Near enough that it secured us a spot at the very end of the tent line where the ground was muddy as hell. No big deal, we just pulled our car out and worked under the scorching hot Kansas sun for two days. Boy was I glad I remember my sun screen.

We went to the first of our scrutineering stations and, for the most part, there were a bunch of little things that we had to fix up before our car was "safe enough" to be placed on the track. A very unfortunate surprise was when we took our car to the body and sizing station where we discovered that Dorothy was 0.5 cm to wide. 5mm too wide? "You gotta be kidding me." Our options were: take a penalty which would result in 50 minutes added onto our final race time or put Dorothy on a diet plan and shave her obliques until we were under the limit. Fortunately, since the infraction was so small we were given the option to do an extra pre-qualification lap bringing our required total up to 59. We gladly accepted.

Tuesday:

Most of the windy day was spent frantically getting Dorothy past the checkpoints so we could take her out on the track. A pleasant surprise was how well Dorothy performed the figure-8 requirement. We later found out that we had the fastest figure-8 laps due, in part, to her phenomenal turning radius. The other half of dynamics, though, turned out to be a huge pain. We had two problems with braking: no regenerative braking, so we were relying on mechanical braking alone, and our mechanical brakes pulled our car to the right.

After a few unsuccessful attempts we were bringing our car around to our muddy headquarters where we would enact repairs. It was on top of the hill where Dorothy earned her name. After checking the internal systems and placing the top of the aerobody back on the car we started to wheel her down to base camp. A huge gust of wind blew the top off the car. The top half of the aerobody, on which the exorbitantly expensive solar panels are adhered, did a somersault 5 metres in the air ("We're not in Kansas anymore, Toto"). It was at this time that everybody's heart stopped beating for about three seconds in terrifying anticipation of whether the flip would come up heads or tails. There was a great sigh of relief when the aerobody top landed solar array side UP. "Thank goodness!" There was, of course some damage along the sides and top of the canopy. But the damage to the solar cells seemed superficial.

Remembering that this was the last day to pass the car on dynamics we rushed Dorothy out on the track to attempt to pass the braking test. On several attempts we stopped in time, but our car veered to one side. On other attempts our car didn't swerve, but we were slightly over the required stopping time. About an hour and a blown tire later, we had not succeeded. Gloom consumed the team.

After the picture was taken and we gathered outside our tent in preparation to go home, we were approached by one of the officials who saw how close we were and passed us on the condition that the car was to be track-worthy the following day. We were overjoyed and went to work immediately to fix our problems.

Wednesday:

the relatively uneventful day that was spent trying to fix our swerving braking system, our troublesome lighting system and re-gluing some solar panels back onto the array which had been knocked loose the day prior. We had hoped to get the car out on the track, but it was not meant to be on this particular day.

JACLYN SHARPE
What happened - sort of.

Thursday:

Our presence on the track was delayed by another 3 hours due to electrical problems with the LED signal/braking lights. By the time they were fixed there was not enough time left to complete our 59 pre-qualifying car-laps, but at least we could qualify the drivers, each of whom were required to do 10 laps. Near mid-afternoon Mashael Yazdanie, a 3A Systems Design driver took the helm. Less than an hour later she secured 11 qualifying laps without incident. One down, one to go.

I hopped in the car next. After about a half hour delay with the lights (again) I was cornering turns like Schumacher running from the law. I had finished two qualifying laps and was halfway through my third when, while accelerating down the far straightaway, I heard a loud "BANG!" come from behind. I immediately moved to the left side of the track, shut off the car and called for assistance. As it turned out the adhesive securing the magnets on the electric motor were defective. This caused them to fly off, destroying the stator coils in the processes. In addition to this, the brand new NGM 2005 motor controller we were using had blown two transistors as well.

We had a backup motor controller, but no backup electric motor. We were as good as done. Fortunately, our good friends from the University of Minnesota were kind enough to lend us their spare motor. Yay! We spent the rest of the night installing the new motor.

Friday:

Last day to pre-qualify. We needed 59 laps. U of Minnesota's motor worked like a charm. By noon I was out on the track getting our pre-qualifying laps. The slight steering misalignment caused the tires to wear unevenly and throughout the afternoon I had blown four tires. I picked up the pace for the last 18 laps, but after 52 pre-qualifying laps I found the car sluggish. After Dorothy decided to stop of her own volition on the side of the road I radioed in and we towed her back to the pits. It turns out that our battery pack was practically depleted. And with the solar array not wired up in time we had no way of charging our lithium ions.

And so ends our pre-qualifying attempt: seven laps short of securing a position in the race. However, with all of the adversity we faced everybody was surprised that the University of Waterloo had come as close as we did to pre-qualifying. With a properly working solar array directing the sun's energy into the battery pack there's no doubt in our minds that we'll qualify in Austin before the race with no problems.

Visit the Midnight Sun Team website at: www.midnightsun.uwaterloo.ca. The pre-qualifier results can be found here: http://www.formulasun.org/fsgp/event/fsgp2005/history/index.html. If you're interested in helping us to finish building Midnight Sun VIII (aka: "Dorothy"), just come out to the core meetings (Mondays at 7:00pm in E3 2103D).

By the way, Dorothy also won the "Artistic Design Award" for being the best looking car. All the teams agreed she was the hottest thing on the track.

Alternatives to stalking: CAROLYN SUTHERLAND checks out Episode III

CAROLYN SUTHERLAND
1B MECHANICAL

On Saturday I had hoped to go to a friend's BBQ, but due to a small turnout it was cancelled. Left with nothing to do, I considered my options: I could a) stay at home, b) go to a singles bar, c) stalk Yip, or d) see a movie with some friends!

I chose option d) of course, since the highly anticipated Revenge of the Sith had just come out the previous week and I had been counting down the seconds to the moment I would lay my eyes upon the glorious final chapter!

Having convinced an equally enthusiastic friend to come with me, we arrived about an hour and a half early to ensure the tickets would not be sold out, and got prime seats at the back of the cinema - smack dab - in the middle. The lights were dimmed, cellphones turned off, and the film began...

Right from the beginning there is plenty of action and adventure, and I must say that Canadian Hayden Christensen, who portrays Anakin, is much more attractive than in Episode II. I think it's the long hair... he doesn't look quite so awkward. The CGI effects are excellent and very impressive, the lightsaber battles plentiful, and there is even a quick visit to the Wookie home world, where we are introduced to a younger Chewbacca.

The movie did have its predictable and cheesy moments, but you'll look back on it in about 30 years and laugh to yourself, much like with the old episodes. Few questions are left unanswered and the film seamlessly ties into the fourth episode.

Overall, the movie was absolutely fantastic! I have never more enjoyed a movie, and as I left the theatre I thought to myself, "My life is now complete..." Despite the dark plot and grim ending, everyone knows the saga will have a happy conclusion which makes the movie even more enjoyable. You can literally see Darth Sidious (aka Chancellor Palpatine) corrupting Anakin bit by bit, and it is great fun to watch!

So, go see Revenge of the Sith! I guarantee you it is the best in the Star Wars saga and a great action film even if you cannot distinguish a Wookie from an Ewok!

One week in Paris: The BEST almost free trip to Europe

KATE KELLY
3A ELECTRICAL

Paris: City of Lights, Culture Center, Fashion, Wine, Eiffel Tower, Headquarters for the future of aerospace in Europe?

This March I attended a BEST CE course entitled "Wings of the Future" in Paris. BEST is the Board of European Students for Technology and every winter, spring and summer they hold Complementary Education (CE) courses in different cities across Europe on different topics. I was the only North American participant at the CE; there were 10 French students from the Ecole Polytechnique organizing the event and 25 students from all over Europe (Greece, Germany, Austria, Spain, Brazil, Pakistan, Romania, Russia, Sweden, Hungary, Turkey, Portugal, Estonia, Slovenia, Serbia and others that I've forgotten). The week I spent in Paris with these 35 people was without a doubt the most amazing experience of my life. It was also major culture shock; I do believe I was the only person there who spoke only one language, and most of them spoke better English than me!

Throughout the week we visited five different companies around Paris who specialize in the aerospace industry. Thales, a research group gave us a tour of their facility and demonstrated their products: Infrared Cameras, Organic LEDs, Quantum scattering lasers for detecting smells (parts per billion! This thing was the size of my finger, too cool!) We also saw Lidar for use at airports and effects of radiation at high altitudes on airplanes. There was a cocktail event after (at the company) and some very nice French Champagne! We visited Dassault (they make the Mirage and Rafale and the Falcon jets) and listened to many talks on methods of plane design. ONERAs, a French government research facility showed us various wind tunnels, including one built in 1930. This wind tunnel is 12m across and has 6 huge fans that used 5 Mega Watts of power in the 30's! Airbus came and gave a talk on the Airbus A380 and their facilities. Finally we visited SNECMA, a HUGE engine manufacturer. We walked into this huge bunker, and in front of us there was this 30-foot high by 15 foot wide steel door. It's 50cm thick and it's shaking, not little shakes, but vibrating such that it's going to fall over. Behind that huge door was a Ge90 engine, the largest commercial engine in the world. It was awesome! When it was slowing down they let us put our heads in to see it and it was crazy windy inside!

We had a wine and cheese night, a night in a Paris nightclub that was an old Turkish bath, so some of the lounges were down inside old pools! We had dinner in a grotto of a really strange restaurant with all you can drink wine (I've never laughed so hard…such a bad idea!) We shopped and toured and had a BBQ (it was very American-esque, except we used baguettes for hot dog buns). One of the last nights we had an international evening where everyone brought food from their countries. (I now desperately want to go to Hungary for some food! So good!) There was dancing to national dances and just tons of fun! It was a fantastic week, I made all these amazing friends and have some craaazy pictures (no they aren't in this article!).

You can go too!

So, now that I've told you my story you should know that YOU have the opportunity to go and attend one of these courses in Europe. Apparently three Canadians went to BEST CE's over the winter (myself included), and now they've invited us back! We have 20-something invitations to attend different courses. There are a few things you should know though. Firstly if you go you must pay your own transportation, food and housing are paid for. Do not ask the Dean's office for money; they don't have enough to go around. You need to have a valid passport (they won't let you back in if you don't!). The courses are all listed with descriptions and dates at http://www.best.eu.org/courses_list.jsp and I've listed the courses we are invited to below. The deadline for the June courses is SATURDAY JUNE 4 by NOON EST. For all other courses the deadline is JUNE 15 by NOON EST! If you are interested or have any questions please e-mail me (krkelly@engmail.uwaterloo.ca) and I will e-mail you the application form.

CEs right here in Waterloo!

The Canadian Federation of Engineering Students (CFES) began running versions of the BEST CEs two years ago. This summer four are running across Canada. (Sorry applications closed in April, and this deadline we do have to follow!). Plans have begun to have a CFES CE here at Waterloo next summer. A committee to plan and organize this event will be formed in the coming month or two. If you are interested in participating, please e-mail both our VP-Ext Jay (asoc_vpext@engmail.uwaterloo.ca) and myself (krkelly@engmail.uwaterloo.ca). We will be having a meeting late in June after midterms are over.

Just remember, BEST week ever!

BEST Courses

Fast and Furious
How Do New Technologies Improve Transportation Systems?

For Greener Grasses

Reveal Secrets of Alchemy

"To Wire or Not to Wire"
The Newest Technologies in Telecommunication

Mechanics of the Biomaterials

Food, Wine…
The BEST of Macedonian Region

Artificial Bones, Joints & Tissues
Make Your Body Better!

Applied Mechatronics
Shake Hands With A Robot

Materials Meet to Build the House of Your Dreams

I've Got the POWER!
Try Alternative Energy Sources

Universal Design
Architecture For Everyone

Designing the Game of the Future
The Next Generation of Game Design

Tech me tender…
Enlarge your FIBER, open your OPTICS

SimRobots - Now in Space!

What Does This Button Do?

Kindly yours, Technology.

Entering the Digital World - Technologies Behind Audiovisual Content

Analysis and Representation

Be the Boss!
Learn How to Become a Good Business Manager

Taste the Technology:
Around Piedmont in 80 Dishes

Contact:
Kate Kelly at krkelly@engmail

Ahh, c'est un big freakin' wind-tunnel, non?

Ooh la la, zee Eiffel Tower at night… c'est belle, n'est-ce pas?

Spring 2005 - 00Scunt coverage

NIGEL D'SOUZA
2B SOFTWARE

The 00Scunt of Spring 2005 was 24 hours of 007-themed fun. The event kicked off at noon on Friday with an Austin Powers performance courtesy of some well-costumed GODs. This Scunt's road trip to Niagara yielded some interesting evidence from teams, ranging from a Maid of the Mist jacket to body autographs from "exotic dancers". (Impressive stuff guys).

The night progressed with some of the traditional events, but was dominated by some brilliant (at least we think so…) new additions. One of the most entertaining events, that ran all through Scunt, required teams to carry Oddjob back to POETS if he was outside and unoccupied; some aggressive guys with awkward hand positions immediately resulted in petrified looks by Oddjob. "Robot Talk", which involved players conversing with the use of only their handfuls of prewritten lines, quickly turned into a raunchy and thoroughly enjoyable event as suggestive comments morphed into more than just innuendos with lines like, "I got a RIM job!", "Where should I stick it?", "This taste chalky!", and "But yours is larger than mine!".

As for the scoring, the innovative SE(x,y) GODs decided to incorporate a new system: Each team would compete for cards and attempt of the day, submit the best 5-card poker hand that they could muster (kudos to one of the teams who managed to put together a straight flush). In the end, though, team spirit and overall participation played the largest part in determining the winner.

Having said that, I guess it's about time to announce the winners. The MATH team (the real team name is irrelevant, what's important is that they're not ENGs) fully earned their third place finish with their great competitive spirit. Though they started out with just a few team members, team O.L.D. grew in size and spirit and eventually went on to secure second place. With the largest and highly enthused population, team Jesus (as the 1B Systems Eng students were called) won first place and the right to host the Winter 2006 Scunt; congratulations on your victory!

Well I guess that's it from us then. Thanks to all EngSoc for all their help. Thanks to all the SE(x,y) GODs for running the show. But obviously, the greatest thanks goes to all the participants for coming out and making this one of the best Scunts to date. Hope we see all of you next time when team Jesus gets their chance to host the Winter 2006 Scunt.

JACLYN SHARPE
1B CHEMICAL

Do *You* Have Something to Contribute?

Drop off your poetry, cartoons, drawings, photos and anything else artistic in the "Arts" box in the Orifice, or email them to iwarrior@engmail.uwaterloo.ca

Submissions may be published here in *The Iron Warrior*, and earn you valuable P**5 points for your class!

Fuel cells at UW

FARAZ SYED
2N CHEMICAL

It's no secret that the world is running out of oil. Higher oil prices in the last few years are an indication that the world is at its peak in terms of oil production. With 12% of the world's population owning vehicles the trend for oil consumption cannot be sustained. Newer technologies must be used. Even popular "hybrid" vehicles depend on some amount of gasoline to function and therefore are not usable in the long term. With this in mind many have turned to hydrogen as the world's next major fuel.

Hydrogen is renewable and non-polluting; burning it only produces energy and water, which can be used to create hydrogen once again. However, tweaking today's combustion engines to use hydrogen is not the answer. Their actual efficiency is only about 20-30%. Fuel cells offer a better alternative offering efficiencies of 50-70%! This is because a fuel cell is a mini reaction engine so it overcomes the limitations of the combustion engine.

Fuel cells offer the promise of a sustainable and clean future. Fuel cell vehicles are considered zero-emission vehicles; the only exhaust is water! Fuel cells would go a long way towards reducing levels of pollution, especially in areas congested by vehicles. Imagine a world with no pollution from vehicles. This utopic vision is possible with the use of fuel cells.

Believe it or not, fuel cells have been around for a long time. The first fuel cell was created by Sir William Grove in 1839 but it wasn't until 1932 that Francis Bacon developed the first successful devices. In 1959 Bacon and his partners demonstrated the use of a fuel cell in powering welding equipment and since then fuel cells have been used by NASA to produce electricity and drinking water for its astronauts.

Fuel cells can be applied to almost all systems. They are already in use in many buses and stationary applications. It has been suggested that fuel cells can be used for portable equipment such as laptops.

The University of Waterloo has its own teams researching fuel cells. Dr. Michael Fowler of Chemical Engineering and his team of students research fuel cell performance and reliability in the fuel cell labs.

As well, the University of Waterloo Alternative Fuels Team is currently building a hydrogen fuel cell car as part of ChallengeX, a GM and U.S. Department of Energy competition.

So it seems that while further research and development is still needed, fuel cells are quickly establishing themselves as a better alternative to oil in every way.

It's a celebration! Chappelle Show Season II

MATTHEW HARPER
4A COMPUTER

Chappelle's Show Season 2
Paramount Home Video

Well, the Chappelle Show Season 2 DVD set finally went on sale last Tuesday. I say finally because this DVD set represents episodes that originally aired back in the winter of 2004. Now, for the hardcore Chappelle Show fans, I'm sorry to say that the episodic content is not that much different from what you might have watched on the Comedy Central website or illegally downloaded, but it looks a fair sight better.

The un-initiated might be wondering what is the big deal with Chappelle. He just seems to be a skinnier Chris Rock, who's been in fewer movies. While Chris Rock is enjoying mainstream film success, Chappelle is really pushing the borders of satirical comedy and challenging racial stereotypes. Or does he? He certainly derives a lot of comedy from pointing out predilections towards certain behaviors shared among members of a certain race or culture. Dave bust out in the first episode of season one with a sketch about a blind white supremacist, who was black. Personally, I didn't find that to be his funniest material. His message in that sketch was immensely powerful. He was basically saying that you can get someone to believe in any destructive (self-destructive even) ideology if you blind them to enough of the facts and immerse them in a culture that promotes homogeneity over independent thought. Of course, guerrilla signals like this need to be well hidden and buffered by a healthy array of flat out hilarious material, so that it all goes down smoothly.

The second season continues this trend. There is a fantastic sequence with Chappelle and John Mayer sneaking up on white people in certain situations while Mayer riffs on an electric guitar and Chappelle commentates. This culminates in a barber-shop scene where the viewer learns that black people respond negatively to electric guitar but favorably to drums. Meanwhile, Latino people need some electric piano to really get their groove on. It's a fairly ridiculous scene and quite entertaining. Is the show playing up racist stereotypes for laughs? Sure it is, but the stereotypes portrayed aren't vicious and the sketch ends with a very positive message of togetherness. Is Dave suggesting that we should all laugh at the Whites and Latinos dancing to the instruments that don't really lend themselves towards a smooth beat, and thus rather spastic dancing? Not at all. He is just pointing out how people growing up in a certain culture adopt preferences for whatever is familiar to them. It's still cool to dance even if you're cultural conditioning doesn't lends itself to the MTV-approved style of dancing.

"... feels like you could get away with dropping a few N-bombs. Of course, this is not true."

There are also sketches where Chappelle is very critical of the behavior of certain races. He ridicules the desire of some people to "Keep it Real", in a sequence of sketches called "When Keeping it Real Turns Bad". All of the portrayals are of black characters making very bad decisions, with hilarious results, all so that they can bolster their pride. He also admonishes the black members of his audience to watch the news more often. He claims that slavery could be coming back in the following week, and many black people would not yet even be aware of it. Whites also bear the brunt of a lot of negative stereotypes. One memorable sketch makes a bold claim of racism of the justice system, when a white man accused of a white collar crime is treated like a black defendant, while a black man accused of dealing crack cocaine on the black market is given a free ticket through the gears of "white" justice. Most of the racial stereotypes are based on blacks and whites, since the main writers are Chappelle and his write friend and co-writer Neal Brennan.

But, what about the funny? Oh hell yeah, funny is in the box. From Samuel Jackson Beer to the infamous Rick James sketches, to an unbelievable guest appearance by Wayne Brady, this season has some great moments that people ought to be quoting a heck of a lot more than some stuff. Actually, that's the biggest problem with the second season. The show drops a helluva lot of N-bombs. After watching a concentrated dose of the show, one really feels like you could get away with dropping a few N-bombs. Of course, this is not true. Even if you don't get beat the fuck up for it, you're bound to offend some people and lose a few friends if you just start dropping N-bombs. This eliminates a lot of the funniest lines from eligibility for casual repetition. The remaining lines that are fairly safe will probably get over-used and burned out very quickly, if they haven't already by now, depending on where you're reading this from. Hello Web Readers!

I really think that Season Two did a great job of addressing racial issues without too much vitriol. Apparently, Dave began to get worried that his writing was losing its subtlety for dealing with racial issues and falling towards racism with his work on the new third season. The story goes that a white crew member laughed at the wrong part of a sketch during shooting and Dave got really freaked out by it. Since then, he's flown the coop to South Africa, where he's trying to chill out and "check his intentions". So, for now future of the Chappelle Show is an indefinite hiatus. Personally, I think that Dave spending some time outside of the States can only help expand his gigantic view of humanity and I can't wait for his next stuff, but I will wait for as long as Dave needs.

UW Alternative Fuels Team at 2005 SAE World Congress

QUOC HUY T. LE
5N ELECTRICAL

Every year a group of over 35,000 professionals from the automotive industry gather at the Society of Automotive Engineers (SAE) World Congress. For five days participants can attend onsite seminars and presentations about cutting edge automotive technology. The SAE explores the future of automotive engineering as well as bringing together the industry's top executives. It is a playground that connects those who influence the industry and its products.

This year the event took place on April 11-14 in Detroit, Michigan. It celebrated the SAE's 100th anniversary. The University of Waterloo Alternative Fuels Team (UWAFT) was proud to be a part of the celebration along with an emphasis on the new GM competition, Challenge X in which the UWAFT is a strong competitor.

Challenge X is an energy-driven competition hosted by General Motors and the US Department of Energy. It is a challenge that is open to all American and Canadian schools. The ultimate goal is for a team to convert the 2005 Equinox SUV power train from a traditional combustion engine into an alternate and sustainable technology. The only Canadian university to participate is the University of Waterloo, the team members of which have opted to integrate hydrogen fuel cell technology to power the car.

At the World Congress the members of UWAFT were given an excellent opportunity to forge contact relations with alumni, other university collaborations, interested sponsorship and possible Waterloo engineering hopefuls. UWAFT's participation in the SAE World Congress of 2005 was definitely a resounding success as UWAFT hopes that the new relationships made will be long lasting and beneficial for everybody.

UWAFT members S. Kundu, T. Mali, C. Mendes, M. Stevens

If you have any questions or are interested in joining the team, please visit the website at www.uwaft.uwaterloo.ca. For information on the competition visit www.challengex.org. Or you can contact the team by email at uwaft@engmail.

Gradcomm 2006

JONATHAN FISHBEIN
4A SOFTWARE

Well '06s, guess what! In 9 months it'll be OUR IRS. In 11 months it'll be OUR GradBall. And in 13 months it'll be OUR Convocation. We we'd never make it this far, but guess we have! That moment that we've been waiting for during the last 5 years where an Iron Ring will be on our pinkie finger is almost here!

But, before that can happen we need to do a little bit of work first. We need you '06s to help with organizing our events, fundraising, taking your grad photos, submitting your yearbook blurbs, iron ring fittings, picking a valedictorian, etc., etc. Right now, you should be concerned with signing up for grad photos. If you haven't signed up for a spot yet then you should go to the Orifice immediately to get one of the few spots left. The photographer won't be at the school for much longer, so unless you want an empty circle next to your name on your class composite grad picture sign up now!

We also need people to help us sell GradComm pizza every week in CPH foyer. If you or your class has time off on Wednesdays between 11:30-1:30 than help us out and sell pizza. The more pizza we sell, the better time we can have at IRS and GradBall! We're also looking for people to help us organize a slave auction and a carwash. If you want to help us out with these events, or have another cool even you want to run for GradComm just find Jon or Dave, your friendly neighbourhood GradComm chairs and we'll set you up.

So keep your eyes and ears open for upcoming GradComm events and meetings. If you really want to stay in the know, sign up for our GradComm mailing list by sending an e-mail to gradcomm2006-subscribe@yahoogroups.com. Let's get cracking 4th years so we can make our last year here the best ever!

A**5 Bowling!

JAMES JOHNSON
4A CIVIL

A Soc's Amazingly Arsed Alley Attack is back! The smartest class wins the Genius Bowl... The class who is the most amazingly arsed wins A**5 bowling! The event is held each term at Fredrick Bowl and is always a blast. Transportation, shoe rental and munchies are all included for $13 per person. The attack begins June 26th at 9pm and goes until 12am.

The team with the highest average score will not only have their name engraved on the prestigious A**5 trophy but will also win individual prizes. Many other prizes will be awarded throughout the evening; typically these prizes are less associated with a team's ability to bowl. Sign up as a team or an individual A.S.A.P. in the Orifice, as space is limited.

Liberals survive vote

ANDREW DODDS
1B MECHANICAL

Nothing but tense moments two weeks ago in the House of Commons, as the minority government of Paul Martin's Liberals was put to the ultimate test. Trading $4.6 billion in budget funds secured him the support of the 19 NDP MPs to stave off destruction. With a little luck, the Liberals managed to pick up the support of 2 out of the 3 independent MPs, and as the vote on the budget came around, the floor was split a perfect 50/50. That of course meant that the Liberal Speaker needed to break the tie, and that of course led to the survival of our tiny minority government. Interesting enough that, against his word, Harper's Conservatives tried to topple the government on the overall budget, and not only on the amended $4.6 billion used to gain the support of the NDP.

What happened that day might have gone very differently if it were not for one very important political player. Much to the disdain of Liberal-haters everywhere, it was Belinda Stronach who crossed the floor to join Paul Martin's Liberals, causing a two-vote sway necessary for passing the budget. Most shocked of all was her boyfriend, Deputy Conservative Leader Peter MacKay, who was 'deeply hurt', and didn't see it coming. He had noticed that she seemed uncomfortable with some of the policies in the party, but he never expected this move for her. Many believe the move was that of a greedy, power hungry woman, who was seduced by Paul Martin and took the Cabinet post as Minister of Human Resources. Really though, as 'charming' as Mr. Martin is, I don't think he could seduce the second most attractive MP in the House. Interesting again it is to note that Rona Ambrose, the most attractive (and notably Conservative) MP is a member of Harper's shadow cabinet, as International Trade critic. He's a man that knows that pretty and young sells.

To make things interesting, a by-election was held on Victoria Day to replace a Newfoundland Liberal MP who died of cancer. Both sides promised cash infusions for the impoverished region, and both sides sent high profile people to do some glad-handing. Harper represented the Conservatives, while Stronach spread the good word of the Liberal Party. This century, only after the "beloved" Joey Smallwood was this riding held by a Conservative, and so it came as no big surprise that Todd Russell, the Liberal MP, garnered over half the vote and took the seat. The Mayor of Labrador City and conservative candidate Graham Letto only took a third of the vote, but hopes are that such a strong showing in a Liberal 'safe' riding might set the tone for future polls.

What does it all mean though? Really, even with Stronach and Russell, the government is still hanging on by a thread. Should either one of the two Independents decide to join the Bloc-Conservative coalition (Whose only political philosophical similarity is that they both want Quebec out of Confederation), the Liberals would be defeated, and back to the polls we'd go. Truly this is a time for changes to be made. With the balance of power so evenly distributed, Paul Martin must cater to every side he can in order to keep the government intact. Whether you like the Liberals or not, it is this type of government that helps to bring about new changes and exciting developments, instead of the same old politics of every majority term. So far, as we've seen with the $4.6 billion buyout of the NDP, as students, this has worked greatly to our benefit. Here's to hoping that we can stave off a majority government for a long while more.

the Iron Inquisition

Richard Hui & Sarah Vandaiyar, 2B Chemical

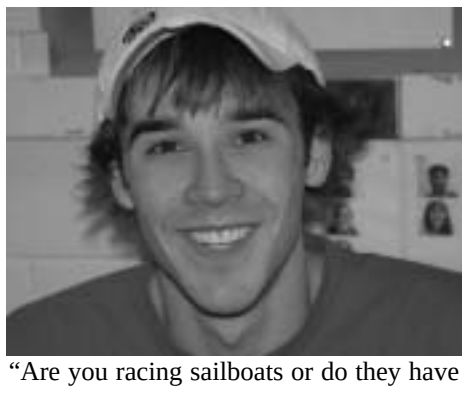
What is the weirdest/funniest question you've been asked?

"Could you give me a ride to Toronto on the way to London?"

-June Lowe

"I couldn't write because I hurt my hand, so I Xeroxed the assignment instead."

—Don Fraser



"Are you racing sailboats or do they have motors?"

—Geoff Milburn
CivE 121 WEEF TA

"Resistor? I don't even know her. *You* resist-her!"

—J.P. Brichta
PHYS 115, 125,112L & 263 TA

"Some students read the MSDS and still ask if it's (chemicals) safe."

—Neil McManus
ChE Lab Co-ordinator

What's on the exam?

- Kwok Chan
ChE 38 TA

"Why does your coffee smell like beer?"

—June Lowe

"Is Darth Vader my father?"

—Yoda