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the IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY VOLUME 26 ISSUE 10 | WEDNESDAY, JULY 27, 2005

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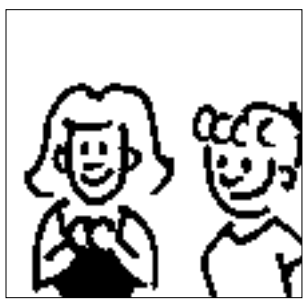

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Check us out @ http://iwarrior.uwaterloo.ca/

FLOATING ON THE VOMIT COMET!

CINDY BAO
4A ELECTRICAL

Electrical student Benjamin Sanders is... is... weightless! (Photo courtesy European Space Agency)

Those who have followed the previous interview with Benjamin Sanders would have known that the 3A Electrical student and his three teammates partook in the European Space Agency's 8th Annual Student Parabolic Flight program in Bordeaux, France as one of the thirty teams of finalists this year.

During his time in France, Sanders has taken the time to share with the Iron Warrior readers his advanture and future plans.

The most exciting part of the trip for him is, of course, being able to ride the "Vomit Comet", a specially-converted plane, which by flying in a roller-coaster-like pattern, can creates short bursts of microgravity. While on board, the team conducted experiment investigating the effect of varying gravitational pull on the human eye in order to better understand how increased ocular pressure can affect one's visual field.

Sanders has the opportunity to board the plane twice during this trip. While the take-off procedure was not so different from normal airplane, it ascends at a much steeper angle of 47° (rather than commonly operated 15° angle). This exerted on the passengers a gravitational force twice that of the earth. Sanders described the sensation as have melted in the seat. As if he is wearing a magnetic suit, lifting even an arm requires much more efforts.

Once in the air, the plane flies a parabolic pattern to enable simulation of varying gravity. Right before reaching the arch of the parabola, the engines were turned off. It allows the plane to dive 9000 feet, equivalent to four times the height of the CN tower, during which everything in the cabin float for 25s.

As Sanders put it, floating in microgravity was like having all the happiness in his life put together. With all other forces exerted on the body canceling out, a slight push on the finger tip will send one's body off spinning. Aside of carrying out his experiment as planned, he was happy to try a few Spiderman and Matrix-esque stunts in the cabin.

The roller coaster pattern was repeated every 3 minutes. Many of the other student participants on board found the rapid gravitational change between hard to adjust and it was not uncommon for many to feel sick, which gave the plane the infamous title of "Vomit Comet"

The team's experiment was conducted using a hockey helmets with 90 miniature LEDs installed inside through out the front and side. They were lit one by one from

Continued on page 4, see Happiness

The inflexibility of our engineering education

EDWARD HO
3N MECHANICAL

Have you ever wanted to join a student team or take an extra course you were interested in, but did not because of the intense workload in your program? Or wanted to have more choice in course in your discipline?

If you had said yes to any of these questions, then you have felt the restrictions of an engineering education: at UW, there is not much flexibility in picking your courses, nor is there much choice in the course load you wish to take for a given term. On average, to fulfill CEAB requirement you need an average of 5 courses (lectures and tutorials only) per term, CSEs included. Yet in some engineering programs such as mechanical engineering, starting from 2nd year onwards, the course load is typically 6 per term.

Flexibility and course load are interrelated. In the present system we may produce "good" engineers with a solid engineering knowledge, but we also produces narrow people with little time for non-engineering interests, extracurriculars, or any form of enrichment that would make them a better person. There is restricted opportunity for people to be well rounded, traits which employers and the public desire in their professionals.

"There is restricted opportunity for people to be well rounded..."

Freedom to Choose Courses Within a Program and Outside of Engineering

Most engineering programs in UW do not give you much flexibility in taking courses, whether they are within the discipline itself or from outside disciplines. Undoubtedly there are CEAB requirements that have to be met, which are discussed later in this article.

In the case of mechanical engineering, you are not allowed to take technical electives until 4A and 4B; in other programs such as systems design, environmental engineering and civil engineering they have considerably more flexibility, being able to start choosing their own courses at 3B, with about 3 mandatory courses each. Their course load also never usually exceeds 5 courses total per term (CSE included). In these programs, being able to choose what courses to take (and thus their scheduling) and having a lower course load allows students to pursue options or other activities much easier.

There is a second aspect to the inflexibility problem discussed onwards. I'll focus on mechanical engineering as a case (because of my familiarity in the program) but the problem can be applicable to other disciplines of engineering as well. In mechanical engineering, the students have to take many courses in mutually exclusive subfields: 3 courses in thermodynamics (ME 250, ME 354, ME 353), 2 in fluids (ME 351, ME 362), 2 in

Continued on page 5, see Inflexibility

The Iron Warrior: Now with more irony.

DAVID YIP
EDITOR-IN-CHIEF

The irony of that title is that there actually isn't any irony forced into this editorial, and any irony present would be of the same amount of an editorial without that title.

So this is the official end of my tenure, at once rather short-lived and at once forever. I'd like to thank the previous editor BSoc editor James Schofield for creating all sorts of handy layout elements that really update the look of the paper, one being the byline boxes (With name and class) and those handy columns that can be filled with semi-relevant information at the drop of a mouse click.

Speaking of mice we have full function of a two button mouse now that we've switched to constructing this paper on a PC - that was my own personal trial and tribulation, but I think I've got most of the bugs sorted out for the next editor. Just for the record, the Adobe portable document format is not really as portable as it's supposed to be, and you can't transfer fonts from a Mac to PC with any level of ease. In fact, it's so hard I gave up and just substituted fonts that the PC already had, taking advantage of that fact that 95% of the readership would not notice or care about the difference between Myriad Professional and ITC Officina.

Speaking of editors (Oh noes, segue following a segue), the next ASoc editor is the one and only Andrew Dodds, the writer you all know and love to hate and love. Dodds rose to notoriety after writing a landmark piece on engineering dating - a topic that honestly way back in F04 most of us thought had been talked to the dead horses' graveyard and back. Turns out us skeptics were dead wrong. The editorials should be a bit more interesting once he takes the reins, though he should probably know that the opinion of the editorial is the official opinion of the paper. He will be third in the line of mechanical editors.

Andrew wasn't the only person who contributed to this paper of course, I am fortunate to have an extremely talented cartoonist who goes by the moniker Jaclyn Sharpe - not in my history of the Iron Warrior has it had an illustrator, and I am grateful for her contribution. If only because it allows myself (and others) to draw vicariously through her sometimes.

Veterans Cindy and Katherine also contributed their time, effort, moral support, and above all, experience to my editorial adventure, without them surely all sorts mishaps would have occurred due to pure cluelessness on my part. The synchronising of the web and print editions were all Cindy, picking up where I start forgetting to put in the web copy when articles come in Monday night. Photographer Richard Hui diligently roamed the halls collecting photographs on his Nikon D70 (Which I coveted until I got a Pentax *istDS) for the paper. Next term Richard is taking off to France for exchange, et je lui souhaite bonne chance et bon voyage. J'imagine que votre camera sera mise en service souvent! Next term, myself, stuck here, will be the one shoving lenses in people's faces and enduring the complaints of my hapless subjects, who will surely complain that "They look terrible", as it usually goes with taking pictures of people.

Resident stalker Carolyn made a splash in Issue I with a fanciful and slightly perturbing (for me) article on stalking me, then promptly vanished for some Yoga course, though she did continue to send in stories for me to print.

Assistant Editor Charling brought her proofreading skills to bear on all articles, ensuring the content remains error-free. Being a faculty of folk who haven't written essays in years, this is occasional no small task.

Francis also contributed some humours takes on campus issues, with the irreverence that my sort of built-in political correctness could never manage.

LowRider (Now with pictures!) was an excellent touch, and grads Huy and Jon also contributed a great deal.

Of course the ASoc editor before me, Andre, endlessly entertaining with the history lessons, and who somehow convinced me to do this job.

Anyone else I forgot, well, it's 3:00 am, so yes, your cynical side is right, I forgot about you. But if you feel deserving of thanks, you're probably right, and I'm just flighty that way, especially this early.

Now you, dear readers, what do you think? Newspapers need content, and content is created by writers, cartoonists, poets, et cetera. If you think you could make this paper better, please apply for some editorial positions, or email us at iwarrior@engmail. Help is appreciated in any shape or form. If you are prone to ranting, put those thoughts on paper!

Waterloo Engineering has an excellent reputation, but where does this reputation come from? From participation of the student body, from its student teams, fundraisers, Society events, and yes, to an extent, the Iron Warrior.

We are all here to benefit from the stature that the reputation of this school will lend us, it is only fair we do our part to burnish that reputation for ourselves, our classmates, and future students. Whether that's organizing charity drives for the community, competing in student teams, or writing articles, we can all contribute a little bit.

I will admit that from time to time I've forgotten the breadth of readership of this paper - that people from other schools, professors, deans, graduate students, prospective pre-frosh and their parents all read the Iron Warrior, and doubtless it forms part of their perception of this school. Contributing to this paper is your chance to add to this perception, to show the depth and breadth of the student body here.

So with the promotion and thanks out of the way, I guess I'd just like to add that I'm quite proud to be on the pantheon of Editors-in-Chief; looking through the Iron Warrior archives it feels nice to be in the company of such talented folk.

This issue features the photo contest results - I'm impressed, and a bit embarrassed now, I think I have to spend some more time behind the lens, especially with that talent coming from Architecture. Hopefully the contest helped to engage our southern compatriots! Also the spoof version Tin Soldier is featured, containing entirely irreverent articles on everything. 20 pages folks, go out with a bang.

IRON WARRIOR

The Newspaper of the University of Waterloo Engineering Society

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Breaking news: LowRider gives G-Unit the snub!

LOWRIDER
3A SYSTEMS

Dear Lowered-Rider,

Hey man what's going on? I'm that guy that sits beside you everyday in class. You know, the guy that spills coffee all over your assignments. I have a fetish that I need to talk to someone about. Yellow golf shirts. I don't own one, or two oh no… I have fifteen yellow golf shirts. The colors range from canary yellow, to in-your-face yellow, to Honey-Dijon-Oktoberfest-Horseradish-Mustard yellow, to Atkins-Diet-I-Only-Eat- Meat-And-My-Pee-Pee-Is-Full-Of-Nitrogen-Compounds yellow. I think people are beginning to think I only have one shirt and wear it every day of the week. People also call me a little red around the neck. I can't figure out why. Is it because I'm obsessed with old rusty z24 cavaliers and have a shotgun above the driver's seat of my pickup?

Oh by the way. You suck. You drive a shitty German Toy Box.

With loving affection,

Meat Eater

Dear Carnivore,

There is nothing wrong with yellow. It's a great color. You're one hell of a man doing one hell of a job. Keep up the massive consumption of higher order mammals. Heart disease is a myth from what I hear anyway. You only live once and why waste your time with all that green stuff? We eat animals and animals eat green stuff. Do it right and don't mess with Mother Nature man.

_LR_

Dear LowRider,

There is this guy in my computer lab that is a very troubled young lad. He is living in the bloody lab. Yeah that's right you heard me. He eats, pees, poops, drinks beer, brushes his teeth and sleeps in front of his computer. The place is starting to smell. He even talks of buying a fridge to put in the place to keep his massive stockpile of day-old subs fresh. On any given day you will find bananas, Red Bull, ketchup packages and chewing tobacco scattered on his desk. This makes no mention of the three trees worth of paper thrown everywhere. He has started calling it "his office". He has completely taken control over the lab. He has even gone as far to try to charge money to enter like lab like the troll under the bridge in that shitty fairy tale. At night, to put himself to sleep he plays Minesweeper and random shitty Microsoft card games for hours on end.

What should I do LowRider? I fear that he is working himself to death. He seems to be caught in some kind of downward spiral of doom. I need to report this behavior to greater authorities.

With Concern,

Opera Singer

Dear Pavarotti,

I think I know this troubled child you speak of. He keeps on getting into these full fledged parliamentary debates about random topics like beauty contests and stuff. All the boy needs is a good stiff drink and big bowl of sauerkraut to put him back on track. We'll see you at EOT on Friday.

_LR_

Yo LowRyderz,

How's it hanging bro?

I wanted to express my opinion on that underground noods paper that seems to float around every now and again. The first couple of issues this term were actually funny in a witty and disgusting kind of way. But the last couple were just terrible. They were straight up vulgar to the point where that shit wasn't even funny anymore. What do you think?

You know what the male populace of Waterloo Engineering need? We need pictures of beautiful women in the Iron Warrior. Morale boosters. That pathetic photocopied paper called noods gets me going with a little bit of female nakedness, but we need women on a more regular basis. Get some pictures of broads hanging off that sick ryde of yours. You're that man with the groupy chick hook-ups are you not?

Now I'm sure some of those feminist vegetarian types are going to shake their heads at such images but I say go back to your roots LowRider. You represent the old skool tradition. Keep UW Engineering alive and the red bandana proud. We need BOOBIES!

Keep it low, wide and PHAT,

Anonymous

Dear Horn Dog,

So you want some nakedness eh? Don't you get enough free porn on the net these days? I don't think it would be possible for me to publish pictures of females in this column. LowRider doesn't take kindly to objectifying women. Thanks for your input. Enjoy the picture.

_LR_

wat up wat up wat up lowrider,

Mr. Banks, Fifty Pence and I would like to extend the offer to rent your sick ass pimp ryde to be featured in each and everyone of G-Units next music videos while you are away. We here at the Unit are avid readers of the IW. We even make mention of you in a cross section of our songs. Ryder Music was dedicated to you. We noticed your mention of departure last issue as we were sipping courvoisier riding full of bud in the club. We have completed full DNA testing to ensure that we are the proper candidates to rent the car. You will have to sign a waver stating that there might be some serious booty in contact with the vehicle and Ice-Cube may have to seriously pimp your ryde. Attached is a cheque for $1 million. Please send us your social insurance number, credit card number, actual driver's license and passport and coveted Watcard.

Money is now object,
Holla at cho' boyz,

Ge Ge Ge Ge Ge Ge Ge Ge Ge Ge Ge Ge Ge Unit

Dear Gentlemen United,

You guys kill me. You're so cute with your big guns and stuff. Make it $36 million and make me a big _LR_ in platinum to wear around my neck when I return to campus. All I ask is please keep Mr. Cube away. He does terrible work.

_LR_

good luck on finals a-soc
relax on your work term and most importantly
'till next time keep it low kids .

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

3A Mech B-league soccer champions

DAN KADYLAK
3A MECHANICAL

The 3A Mech soccer team (aka Mech Nerds) won in the finals yesterday 3-2 against AHS United, coming first out of 29 teams registered in UW's B league. They were undefeated during the regular season, won in the quarterfinals in penalties, the semifinals 2-0, and the Elec game 3-2.

Numerous attacks were made by the Mechs after an aggressive start and five minutes into the game Mo scored; no surprise. Shortly after, AHS United returned with an inferior goal. A controversial call by the referee resulted in a penalty kick for AHS United which was successfully executed. Martin made amends by scoring a gorgeous goal with a powerful boot from outside the box. With the score tied 2-2 and three minutes remaining, Edmund escaped the offside trap with a clean goal before the closing of the game.

Reza would like to thank the team for their dedication and hard work, with impeccable attendance at all practices and games; rain or shine. All of the victories were a direct result of excellent team work.

Thanks to:
Coach: Reza Moazami-Goudarzi
Captain: Edmond Lui
Players: Martin Arciszewski, Louis Cheuk, Jenn Daley, Frank Deen, Mohammed Farivar, Terence Fong, Thomas Geraghty, Dan Kadylak, Adrian Kwan, Neil Mulji, Vladimir Popic, Nick Sunder, William Williams, Chris Woo
Audio Visual & Cheerleading: Charling Li, Paul Chien

The adventures of the winning Mech team will be continued in 4A, Fall 2006. Will the Mechs remain victorious? Will the Electricals come back for more? Stay tuned.

"all the happiness in his life put together"

Clockwise from left: Collecting data, the test apparatus, floating, and weightless Blackberry. Being weightless is no excuse for lack of email. Photos courtesy European Space Agency.

Continued from cover.

the sides towards the center. As soon as the lights enter the test subject's peripheral vision, the angle will be recorded with great precision.

The experiment setup worked quite well for the team. The hockey helmet, once worn by Jarome Iginla also inspired the Canadian pride in the four members, who were happy to introduce hockey to the European students participated in the flight.

The team gathered more data than they have originally hoped and are currently in the progress of analyzing the data. The team will present their findings at the International Astronautical Congress (IAC) in Japan later this year. However, with finals only days away, Sander would first focus on his school work after returning from his trip

To carry out his space dream further, Sanders would like to see similar programs developed in Canada. Right now, the Canadian Space Agency has a similar plane as the "Vomit Comet", with about one tenth of the capacity. Unfortunately, it is not accessible to students. Sanders will be working with others to put pressure on the government to fund the Canadian Space Agency for such opportunities.

Vomit Comet Info

From Wikipedia, the free encyclopedia.

The Vomit Comet was the nickname given to the KC-135 Stratotanker used by NASA's Reduced Gravity Research Program. The plane makes parabolic flight paths, thus allowing the occupants to experience reduced gravity during the parabola. By modifying the flight path, any value for the apparent gravity may be produced. In general it is used to train astronauts in zero-g maneuvers, giving them about 25 seconds of weightlessness out of 65 seconds of flight.

The source of the nickname, of course, should be apparent.

One was used for filming scenes involving weightlessness in the movie Apollo 13; that aircraft was retired in 2000 and is now on display at Ellington Field, near the Johnson Space Center.

The next-generation Vomit Comet will be a McDonnell Douglas C-9, and will enter service some time in 2005.

Fortune favours the bold: Take risks and get rich. Maybe.

MATT HO
3A ELECTRICAL

When old people ponder about us students, they probably think we're young, dumb, and rated R.

I'm talking about risk, what were you thinking? For all our inexperience, student loans, and dashing good looks, old people know that we students have virtually nothing in the grand scheme of life. Except, perhaps, the ability to take the ginormous risks whose mere mention would make the arthritic bones of those old chrome-domes shake apart.

If you were to ever talk to an investment professional and told them you were still in school, the third thing they would tell you is to take the riskiest investment that you can find. Why? Because the first thing they would tell you is to graduate, and the second to build an emergency fund of 3 to 6 months of living expenses.

Over a long period of time, say 30 to 50 years, the riskiest investments have the highest average rate of returns. I said average. So that means some of your investments will no longer exist, but others will be so wildly successful it'll give you orgasms.

But unless your parents are paying for your education, you lucky souls, you, like me, probably have negative money, or at best not enough to invest. Here's a philosophical question: Does time equal money? If so, then I'd say we're bloody rich.

So what's the safest investment that a UW engineering undergrad can make with their time? Work for a giant corporation. They have names like Microsoft, Nvidia, Toyota, and Bell. Let's say Microsoft makes a piece of crap (a common occurrence). No problem for MS employees, they still get their paycheck. MS creates the next big thing? MS employees get a few extra bucks on their paycheck, and the world's richest man gets richer. One way of looking at large companies is as places where the risk associated with delivering what the market wants is pooled, where all the risks and rewards are equally distributed regardless of who was responsible for the bomb or the boom.

So what's the riskiest investment that at UW engineering undergrad can make with their time? Start your own corporation. Your product / service tanks? You're back in the job market. Your product/service is very successful? Would you like your Porsche in blue or yellow?

Best case scenario: in 4 – 7 years after starting you get bought out and are now worth several million dollars, or you just sit on this cash cow and become a fully-fledged CEO.

Would you like your Porsche in blue or yellow?

Second best case scenario: your company tanks after 2 years, you're a few dozen grand poorer, and barring the most unusual circumstances, totally burnt out and a lot smarter. Keep in mind that when you buy a house, you'll be several hundred grand in debt; it's called your mortgage.

Worst case scenario: After 5 years, your business is moderately successful, with no 'big break' in the foreseeable future, but enough to earn you a living but not enough to make you rich. You're working 16 hours a day for a 9 to 5 salary. Time to close shop and write off the last 5 years of your life. Of course you'll still have your skills, experience and contacts built up over the last 5 years. But you'll probably need a lot Kleenex before you recognize that fact.

Here are the numbers for those of you who don't like anything 'soft':

Absolute best case scenario:

Annual average net income at giant corporation: $60 000, ($100 000 salary with 10% annual raises over 5 – 7 years)

Rate of return on capital in stock market: 17% compounded annually if you fancy yourself Warren Buffet Jr.

Odds of successful cash out: 1/15

Cash out after 7 years of work: $2 million net

After 6 years and 6 months at a giant corporation you will be worth $700 000*

So from an average risk perspective you will have 20/7 * 1/15 ~ 1:5 odds of coming out ahead if you do your own startup

A slightly more realistic scenario:

Annual average net income at giant corporation: $25 000, ($70 000 salary with 6% annual raises over 5 – 7 years)

Rate of return on capital in stock market: 12% compounded annually (slightly above the S&P 500)

Odds of successful cash out: 1/15

Cash out after 7 years of work: $2.5 million net

After 6 years and 7 months you will be worth $250 000*

So from an average risk perspective you will have 25/2.5 * 1/15 ~ 2:3 odds of coming out ahead.

2:3 odds are nothing to frown at; I'd be willing to wager on those odds that UW undergrad does not produce 1 startup per graduation class. To think that UW engineering cannot produce 4 measly people out of 600 to 800 graduates a year to do a startup is koo-koo; I mean we live in a world where Paris Hilton is a celebrity because she's a celebrity, and one of the best engineering schools in the country can't produce 4 harebrained people?

So maybe not everybody is foolish enough to work like a slave for 5 years straight, maybe not everybody has an appetite for 'choose your own hell' stories, maybe not everybody wants to be a multi-millionaire by the time they're 30; but there must be some of you who are foolish, hungry, and poor.

If connections, money, or a 99% average were enough to rule the world, would Microsoft, Google or RIM exist? Fortune favors the bold.

To those whose audacity knows no bounds: just try to remember us little people and throw us a bone every now and then, will you?

Questions, comments, flames? matt3ho@gmail.com

www.fool.com savings (How much, at what rate, when?) calculator.

Assumptions/Facts:

You are working somewhere in North America as a law-abiding tax-paying citizen

Income taxes in Canada are in the 35% - 49% range for the incomes most engineers will be earning

Income taxes in the USA are in the 25% - 35% range for the incomes most engineers will be earning

Most sources quote 1/10 success rates for start-ups, but just to be safe, we'll say 1/15

All amounts are in nominal dollars that do not take into account inflation because we are measuring relative amounts

Annual average net income at giant corporation: after taxes, living expenses, transportation, insurance, entertainment, etc.

The inflexibility of our education

Continued from cover.

machine design (ME 321, ME 322), and 2 in automation (ME 262 and ME 360). Thermo and fluids are interrelated, and machine design is linked with automation. But, if company profiles and co-op jobs were any indication, a person specializing in machine design and automation usually doesn't need thermodynamics and fluids, whereas a person who is in thermofluids will probably never need solid mechanics theory or digital logic.

By 3A students have a grasp of the industry, the nature of engineering jobs, and have an idea which subfield interests them. Thus, beyond the introductory courses (ME 250, ME 351, ME 262, ME 321) in the respective subfields the student winds up taking courses in areas he/she will never use and has no interest in. Hence there is both a heavy course load AND an inability for the student to be able to choose alternatives to what they can study.

The approach taken in Systems Design and mechanical engineering at U of T http://www.mie.utoronto.ca/undergrad/info/important.htm is to build up the introductory material (such as ODEs, numerical methods and vector calculus) until and including 3A; from 3B (and partly through 3A) they are free to choose which subfield or area they want to study, and take course accordingly. I emphasize this importance of being able to choose: It is being able to choose that would allow students within each discipline to distinguish themselves from each other and be able to study what they enjoy. And, as mentioned before, implementing this kind of flexibility would allow engineers to pursue non-engineering academic ventures easier. In the worse case, if the student is not sure what to study, they can simply revert to the present system of taking courses in every subfield

Now, in this whole discussion you may think I have made an implicit assumption that it is worth it to have easier access to this "enrichment". So how important is this "enrichment"? It was certainly important enough for it to be a selling point for UW, as quoted from their recruitment website:

http://www.eng.uwaterloo.ca/admissions/Engineering/Enrichment.htm

By broadening your understanding of ideas, culture, and society, you'll also develop better communication skills and gain a deeper understanding of the impact of technology on society

Unfortunately in the present system, it is difficult to accommodate for enrichment.

Course Load: Case Study, Mechanical Engineering

Let me start by saying that I am not a failing student or someone who thinks engineering is "too hard" – I simply argue for a course load that allows student more access in broadening their degrees.

In every program except mechanical, after first year the students typically take only 5 courses each term (usually 4 core + 1 CSE, or 5 core); however for mechanical this is never the case: the students always take 5 core courses, and whenever there is an elective, it becomes their 6th course.

For those pursuing an option or any outside interests (ex. a minor or just simply extra courses they are interested in) a 7th course often becomes unmanageable. Often the student has to resort to distance education to displace CSE slots, and because of the engineering deregulated fees, the student has to pay $720 per course. Due to the course loads, some students simply drop out of doing their options. For this same reason, when it comes time to pick a CSE, students sometimes pick "bird" courses which are an "easy credit", rather than for an intrinsic interest in the course itself. This is not exactly a positive learning environment.

Three years ago, when I had applied for engineering at UW, I remember filling out the Admission Information Form. On this form was a section for the applicant to list his/her extracurricular activities – a chance to prove to the university that they were more than just book smart, that they possessed the initiative, leadership qualities or perhaps outside interests as a person – all of which combined to paint a portrait of someone who would continue this chain of activities at UW, and thus enforce UW's reputation.

"Have you had the time to continue your interests you left off in high school? "

Fast forward to today. Have you had the time to continue the interests you had left off in high school? Or explore new ones? I know I barely had the time to do so, and without great sacrifice of either time or attention to school. For student teams such as Formula SAE or the Challenge X team, students who may want to join are faced with choosing between school or committing to the team, and workload may deter them from committing to the school. Recently the SAE and Challenge X teams have accomplished top honours and generated much positive publicity for UW in their respective competitions – but there could well be hidden talent that was never realized – those who did not join because of their course loads. If these students had time to join, the strength of the teams in UW would been even stronger – and it is precisely these teams, competitions and projects which help builds the Waterloo reputation.

Is it Possible to Meet CEAB Standards with a Revised Curriculum?

Since all engineering programs have to be approved by the criteria set out by CEAB, there is a minimal number of class hours which have to be met. So there are limits as to a minimum course load; however, it is certainly possible to revamp the current engineering programs without failing the CEAB guidelines.

Let us consider the accreditation criteria right from its sources, the CEAB guidelines. An excerpt is provided below, but you can find the full text here: http://www.ccpe.ca/e/files/report_ceab.pdf

2.2.1 Definition of Accreditation Units (AU):
a) Accreditation Units (AU) are defined as follows (hourly basis) for an activity which is granted academic credit and for which the associated number of hours corresponds to the actual contact time of that activity:

one hour of lecture (corresponding to 50 minutes of activity) = 1 AU
one hour of laboratory or tutorial work = 0.5 AU

The entire program must include a minimum of 1,800 AU.

There are certain categories which these 1800 AU have to fall under:

1)Engineering Sciences and Engineering Design: A minimum of 900 AU
2)A minimum of 420 AU of a combination of Mathematics and Basic Sciences
3)Complementary Studies: A minimum of 225 AU of studies in humanities, social sciences, arts, management, engineering economics and communicationthat complement the technical content of the curriculum.

Now let us consider a simple calculation:

1800 / 4 years = 450 AU per year
450 / 2 semesters = 225 AU per semester

Each course in engineering has at least 3 Lecture hours + 1 tutorial per week = 3.5 AU per week

"the UW engineering curriculum may produce "good" engineers, but also narrow people... "

Assume 5 courses per term. There are 13 weeks in a semester, so: 5 x 3.5 x 13 = 227.5 AU per semester. Obviously, 227.5 > 225

When you consider that each term there are at least 2 courses with labs, each one adding 3 hours (hence 3 AU in total) per week, it is quite easy to exceed the CEAB requirements. Assuming 3 AU of labs per week, 3 x 13 = 39, bringing the total AU per semester on average to be 266.5 AU, for a total of 2132 AU in a 4 year program.

Thus it should be quite possible for programs like mechanical engineering to reduce their course load to 5 per term (either 4 core + 1 CSE, or 5 core) and still exceed CEAB requirements, thus giving the students more time to pursue other ventures. Course reduction should not be difficult to implement when used in conjunction with allowing students more flexibility in choosing their the path they want to take in 3A or 3B onwards.

If the students don't care about enrichment, they can simply choose to continue taking the same set and sequence of engineering courses in the present system. But at least if flexibility existed, students have the option of choosing what they want to study in depth.

Conclusions

In the present system, students take a heavy course load and cannot easily pursue other ventures.

In programs with both flexibility and a reasonable course load, more students are seen pursuing options and joining student teams, which is ultimately what helps promotes UW's reputation. They can also choose what they want to specialize or study in depth earlier on, and thus have the option to move in other directions if they want to change their mind. And at the very worse, can choose to simply follow the status quo. With a flexible program, it is also easier to go on an academic exchange overseas, since there isn't the problem of needing to find an equivalent UW course being taught at the exact sequence back in Waterloo.

These benefits are evident in by the disproportionate number of systems design students studying abroad in other countries and being in groups like EWB. For those who have inflexible schedules, the only real opportunity to diversify is to make huge sacrifices academically or outside of school.

Thus, overall the UW engineering curriculum may produce "good" engineers, but also narrow people with little time for extracurricular, non-engineering interests, or any form of enrichment that would make them a better person. If this factor is important to you, you may wish to consider switching into a more flexible program as soon as possible, or petitioning your views and concerns to your department or to the dean. Engineering programs are reviewed every 5 years, and while any changes would not affect my generation, every voice has the potential to make things better for the future generations of UW engineers.

Websites of Interest:

Civil:http://www.civil.uwaterloo.ca/default.asp?page=230

Chemical: http://www.adm.uwaterloo.ca/infoucal/ENG/chem_eng.html

Environmental: http://www.environmental.uwaterloo.ca/Current/Curriculum.asp

Computer: http://www.adm.uwaterloo.ca/infoucal/ENG/comp_eng.html

Electrical: http://www.adm.uwaterloo.ca/infoucal/ENG/elec_eng.html

Mechatronics: http://www.mechatronics.uwaterloo.ca/prospective/program.html

Mechanical: http://www.me.uwaterloo.ca/undergrad/overview.html

Systems Design: http://sydewww.uwaterloo.ca/UnderGrad/Courses/course_curriculum.htm

Engineering Society Executive Reports / Feds

Summer flies...

NICK LAWLER
PRESIDENT

How the summer term flies by. I can't believe this is my last exec report of the term. I'm sure everyone had an excellent time, as we did a term of summer school. Congratulations and thanks to all the people who helped out this term, filling directorships and coming out to events.

We are already getting ready for another exciting term next winter. It will prove to be a very exciting time, with the Class of 2006 (that includes yours truly) graduating and receiving our Iron Rings. Be on the lookout for more great GradCom events, and the grads try to raise funds to support their graduation activities. On top of all the grad events, the winter term is very busy with lots of EngSoc stuff going on. Events will include the Bus Push, Explorations, PI Day and many more.

Before any of us can move on we have to write those exams. Remember if you would like to relax and enjoy the end of term video make sure to attend the End of Term Pub, happening this Friday at 9pm in POETS. Speaking of exams, this will be the first run through with the new 2.5 hour format. If you have any problems during exams with how it is done, please let either myself or Melinda know, and we will forward your complaints on to the proper people.

Well I'm off for now, I'm looking forward to another successful Frosh Week, and wish all the leaders good luck. I wish everyone a safe and happy work term.

Concerns? Send 'em here.

MELINDA HURD
VP EDUCATION

SCHOOL IS OVER! I don't know about you, but this term flew by! As excited as I am about the upcoming holiday, I am dreading finals! Thanks to everyone who participated in the debt load surveys and those who attended the reading party for course critiques.

I don't really have much more to say – good luck on exams and have a fantastic summer "holiday"! Feel free to email me during your work term if you have any new ideas for our directors or if you have any concerns / questions! For those embarking on another journey thorough PDEng, good luck – hopefully PDEng 25 will come through with improved delivery and greater due date flexibility! Otherwise, enjoy your work terms! PARTY ON!!! My party time starts at Aug. 10 at 6:30. See you there.

Get your money. Now.

SABRINA GIOVINAZZO
VP FINANCE

Well, not much to say. There are still some donations cheques which need to be picked up, so make sure you come in to get yours if you haven't already.

There are lots of things on sale in novelties, including some very stylish t-shirts and very, very useful screwdrivers and tape measures so make sure you stop by on your lunch! Novelties is only open for one more week until next term!

Once again, make sure you submit your expense forms. They are due in the Orifice by Friday, July 29 at 4:30. Just put them in my box or on my desk. Forms can be found in the orifice or online.

Well, good luck on exams and get ready to spend more money next term!

Engineering Feds Councillors

Including the newly acclaimed Janet and Joske, your Feds Councillors are:

Janet Yip

Jon Fishbein

Joske van Leeuwen

Rajat Suri

Matt Strickland

"The Council is the body responsible for proposing and approving referenda, elections, and discussing issues such as enrollment growth, tuition, and other university policies." So tell them about the beef you've got.

Highlights of Joint Council

JOSKE VAN LEEUWEN
4A CIVIL

On Sunday July 24, 2005, the annual joint EngSoc Council was held. A small group of dedicated (and well fed!) students were on hand. The main items discussed are summarized below. If you are looking for more details, please refer to the meeting minutes, or contact the exec responsible.

1.Personalized beer steins will be available from novelties, sign up to get your name engraved; an email with details to follow.

2.There are two conferences in September where members of the exec will interact with other execs from around the country and province.

3.A-Soc VP-Ed Melinda Hurd suggested that B-Soc organize a forum for the first-year students to discuss the PDEng program in September. This was done by A-Soc in May to listen to the students' concerns.

4.WEEF will have extra money available for the Fall term, so be sure to submit proposals.

5.Novelties is looking into selling items online. Volunteers are needed to help setup and maintain this feature.

6.Senate is considering a proposal that would enable Engineering to have a full reading week and a minimum of two study days prior to exams. This may cause an extra early start in January or exam days extending further into April. These changes will be voted on at the September Senate meeting. Look for a poll on the issue on the EngSoc website soon. The change would be implemented in 2007 at the earliest.

7.Talk to Brandon Malleck regarding UW's CEC bid for 2008.

8.Kate Kelly is looking for people to help with an international CFES CE course for the summer of 2006. B-Soc'ers are especially needed.

9.Mechanized blinds will be installed in POETS by Christmas. The windows will also be tinted and "POETS" will appear in yellow vinyl, in imitation of the current look (which must be removed due to code issues).

10.Finally, Nick Lawler proposed a change to the Constitution of the Engineering Society to consider that Architecture is in Cambridge, but part of Engineering. This change is intended to provide WASA (Waterloo Architecture Student Association) with funding to provide services to the Architecture students in Cambridge. Travelling 30 km to use the Orifice photocopiers isn't working for them. The proposed changes are likely to be a referendum question during the B-Soc elections in the Fall, or else at next year's Joint Council meeting.

Minutes to the meeting should be available on the web soon. A-Soc's final meeting of the term will be July 27, 2005.

Newly acclaimed Feds councillors!

JANET YIP
FEDS COUNCILLOR

My name is Janet and I will be representing Engineering as a FEDS councillor for 2005-2006. I am in 3A Electrical Engineering, and am fairly involved with various school groups.

It was the referendum last term that prompted me to run for FEDS. During the Winter term, it seemed that many students, especially engineering students, were not satisfied with the refundable fees system. There is certainly plenty of room for improvement, but FEDS has been slow to adopt recommendations it has received.

The diversity of student services that we have available enriches the entire university environment. However, under a system that students are unhappy with, there will only be ongoing conflict. Thus, my first goal will be to bring back the issue of refundable fees and to urge FEDS to take action on creating a more suitable system where students can have an easier time learning about student services and obtaining refunds.

On a broader scope, engineering students generally feel that FEDS is not relevant to them. If this is indeed the case, there is no reason for this to continue. As we make up such a large portion of UW, it is very possible for us to have a strong influence on FEDS. All we have to do is let them know.

Please let me know of any questions or suggestions you may have. Thank you, and may all of us enjoy a safe sunburn-free summer.

JOSKE VAN LEEUWEN
FEDS COUNCILLOR

Hello! My name is Joske and I am one of the newly acclaimed Feds councillors representing Engineering for the 2005-2006 school year. I'm a 4A Civil, looking forward to graduating in April. I'm also looking forward to the end of this term, because it is the last bit of a 12 month academic stint. From September 2004 until April 2005 I was on an exchange term to the Netherlands. (It was an amazing experience which I recommend to everyone.) My experience at a strange school showed me how much I enjoy being involved in school activities. I'm already fairly involved with EngSoc, and you've probably seen me selling Boggan Burgers Thursdays at lunch (only $2!!), but I wanted more. My becoming a Canadian citizen early 2004 made me want to take an active role in the democratic process, which is were Feds fits in.

As Feds Councillor I want to present my views and those of my constituents (you guys and gals). I want to make sure you are informed of what's going on in Council. Part of that is this introductory/ profile article. I also want to write articles about the Council meetings every month. I want to keep an up-to-date web site and put this kind of information there as well (once I figure out how all that works).

So if you have any questions or concerns about what the school or Feds is doing, let me know about it. Just search for 'Joske' in the UW directory (I'm the only one), or email me at jvanleeu@engmail.uwaterloo.ca Thanks, and good luck on exams!

Engineering Society Executive Reports / Feds

WATERLOO ENGINEERING ENDOWMENT FOUNDATION			
SPRING 2005 FINAL FUNDING DECISION			
#	Proposal	Requested	Allocated
	Architecture		
1	Foam Cutter	$818.00	$0.00
2	Architecture Film Collection	$2,315.98	$226.00
3	Picnic Tables	$2,300.00	$0.00
4	Tools for Architecture Workshop	$2,462.35	$356.00
5	Large-format Scanner	$9,900.00	$6,700.00
6	Undergraduate Laser Cutter	$5,000.00	$5,000.00
7	WASA PA System	$2,837.72	$0.00
8	Replacement Accessories for ACM	$640.00	$350.00
9	DVR	$9,742.75	$0.00
	Chemical Engineering		
10	Digital Filter Fluorometer	$7,360.00	$3,000.00
	Civil Engineering		
11	Civil Undergrad Computing Lab Network Upgrade	$4,400.00	$2,200.00
	Electrical & Computer Engineering		
12	Audio Wireless Microphone System	$1,103.26	$0.00
13	Oscilloscope	$4,857.60	$2,428.00
	Mechanical Engineering		
14	WEEF Lab Upgrade	$43,849.28	$25,000.00
15	Soldering Stations	$3,176.25	$1,270.00
16	Autonomous Vehicle Challenge	$5,000.00	$3,000.00
	Systems Design Engineering		
17	Assistive Technology Design Prototyping	$600.00	$600.00
18	Oscilloscope Probes for Workshop Lab	$510.00	$510.00
19	Desktop PC for Systems Design Workshop Lab	$1,260.00	$1,260.00
20	Power Supply for Systems Design Workshop Lab	$3,576.00	$1,788.00
	Departments Total	$111,709.19	$53,688.00
	Student Projects		
21	Clean Snowmobile Team	$1,850.00	$1,400.00
22	Engineers Without Borders – Printer	$150.00	$150.00
23	Formula SAE	$6,000.00	$3,000.00
24	Free Flight Glider Team	$875.00	$575.00
25	Great Northern Concrete Toboggan Race	$2,842.00	$500.00
26	Midnight Sun	$8,000.00	$3,000.00
27	UWAFT	$5,650.00	$2,800.00
28	UW Robotics Club	$2,000.00	$1,000.00
29	Vomit Comet	$2,000.00	$500.00
30	WARG	$4,350.00	$2,900.00
31	Waterloo Space Society	$500.00	$500.00
	Student Total	$34,217.00	$16,325.00
	TOTAL	**$145,926.19**	**$70,013.00**

WEEF!

KATHERINE CHIANG
WEEF DIRECTOR

WEEF held its final Funding Council and Board of Directors meeting last week, and here are some of the highlights.

WEEF had stepped into the $6M mark this past April, with $210,000 ($70,000/term) of funding available for the 2005~2006 fiscal year. We have reached yet another milestone, and this could not be accomplished without the help of all of those who contributed to WEEF. Thank you for making WEEF better.

WEEF will also be streamlining its operations, starting with the implementation of an online proposal submission system. Email problems in the past had made it difficult in some cases to submit proposals promptly. What WEEF hopes to achieve with the submission system is to lessen the work of both the submitter and the WEEF staff in preparing and receiving proposals. This initiative had been approved by the Board, and will hopefully be implemented by the Fall term this year.

I would also like to congratulate two students for their appointment to the Board of Directors. Rose Linseman of Architecture, who was the past WASA president, along with Kathryn Pomeroy of 3A Chem, will be joining the Board in the future.

And finally, the verdicts are in (drum roll please!)…Spring 2005 WEEF Funding Allocation is out! (see figure somewhere close to this article). The funding allocation for this term is a little different from previous terms for 2 reasons:

1) Architecture proposals! The Archies were allocated close to $12,000, an initiative by the funding council to help the School of Architecture re-build their facilities.

2) WEEF Lab upgrades. Although it is grouped under the Mechie proposals, the Council have agreed that since it impacts everyone, that it should be Council-wide decision. The proposal, submitted by Prof. Culham of Mech Eng, intends to replace and upgrade the multimedia equipment with overhead projectors (6 in fact) in the WEEF lab so the profs won't have to take over the students' screens to do demonstrations. A total of $25,000 was allocated to partially fund the upgrades.

This term, the funding allocation is 77% to departmental proposals, and 23% to student projects. Any questions or comments about the allocation should be directed to the WEEF (weef@engmail).

A proposal opportunity for large-scale projects is in the works. This, from what I understood, is in addition to the regular WEEF proposals, and is specifically for large-scale projects. More information will be available in the Fall term, and for those who may be interested, stay tuned.

Feds Council Highlights

JOSKE VAN LEEUWEN
FEDS COUNCILLOR

At the July 24 Feds Student Council meeting, Howie Bender, VPEd proposed Policy 20, regarding the funding of university education. Through this policy, Feds feels that students should pay approximately 30% of the cost of their university spot. The remaining 70% should be covered by the government. Currently, UW students pay approximately 44% of the cost of their education. Feds feels that the 30-70 split should be realized by 2011. This does not necessarily mean a cut in tuition cost. The split could also be achieved by increased government spending.

Spending by Feds addressed was next. The Budget Committee presented the 2005-2006 budget and answered the many questions asked by council. The discussion led to many ideas for improving the budget format for this and future years.

VPI Lawrence Lam is helping the International Student Society (ISS) lay groundwork and gain stability. The goal of ISS is to allow international students to network at UW and help them integrate into our society here.

"Feds feels that students should pay approximately 30% of the cost of their university spot."

Howie Bender, VPEd, is concerned about the government's plan that will force international student to organize work visas through the Calgary office, rather than the Kitchener one. He is also concerned that the 52 to 60 day processing period for work visas for international students will reduce their attractiveness to Canadian employers upon graduation. OUSA is busy creating a framework for tuition, while CASA is working towards having a dedicated education transfer from the government.

President John Anderson is looking forward to receiving feedback from councillors regarding the proposed Academic Services Fee (ASF) to charge students a non-refundable fee for unlimited transcript and letters from the registrar. Please let your councillors know how you feel about this. This fee may be voted on during the October Annual General Meeting.

The meeting ended with the councillors' reports. Arts is desperately seeking additional frosh leaders for September. If interested, please email artsorientation@watarts.uwaterloo.ca. Being in Arts is not a prerequisite.

The next meeting is scheduled for August 14, 2005. Please talk to the Engineering Feds Councillors to voice your opinions or concerns about the above issues and anything else.

Pssssht! Making your car go fast!

Before departing for BSoc, Mark Alocilja leaves ASoc with a parting primer on forced induction.

MARK ALOCILJA
2N MECHANICAL

Back from Hiatus, I'm going to be writing a weekly column about cars, which will focus on questions you people have about them, as well as some news bits and interesting facts. (This is of course assuming the "Master Chief" editor allows me to keep doing so). Unlike another campus news paper that had a car / auto column, I'm going to actually write about something 'interesting', and not shamelessly publicize the car club I belong to.

I'm going to start off by laying some ground rules so that no one gets hurt (I really mean you, so you don't get hurt, by me, for asking stupid questions).

I will not be talking about SUVs or trucks… because this is a 'car' column. If by chance I write about something that somehow applies to those abominations people consider vehicles, then… oh well.

Feel free to ask me questions… any question… about CARS.

NASCAR is not a motorsport. If you send me stuff about NASCAR, prepare to be insulted.

So now.. we got that out of the way… and since this is the series premiere of this column, I'm going to start things off with a bang… and a pssssshhh… vssssshhh… for the ricer boys / girls out there who think a EVO 3 on a 3rd to 4th upshift and hitting 3500rpms. Yes… I'm talking about superchargers and turbochargers.

We all know – or we should all know – that turbochargers (turbos) and superchargers make your car go faster. This is quantified by an increase of horsepower and (the often overlooked) torque produced by the engine. This is done by compressing the air that is normally used in the combustion process of your engine. By compressing the air, it allows more of it to be stuffed into a cylinder. More air means more fuel can be stuffed in as well, and bang… you have more power from each explosion per cylinder. This of course means that turbo / supercharged engines of the same displacement – which is the volume of that each cylinder can hold, multiplied by the number of cylinders your engine has – produces more horsepower and torque than non-'charged' engines. Turbochargers and superchargers do the same thing by operate by different means.

A turbocharger works by the exhaust flow from the engine to spin a turbine. The exhaust that comes out of your engine flows into pipe, generally called an up-pipe, which is connected directly to the turbocharger. The exhaust from your engine spins a turbine which is then spins an air pump and thus compresses the air. The exhaust is then piped out of the turbo – typically called a down pipe- and resumes the normal exit route, down the middle section of the exhaust piping system unsurprisingly called the mid pipe and into the axle back section – usually consists of some more piping similar to your mid pipe with a bend or two and your muffler (if you've got one). Typical boast of a turbo charger is 6 or 8 pounds per square inch (psi), and since normal atmospheric pressure is at about 14, you get about 40% power, but due to losses from the pressure created by the exhaust exiting the engine (think of the turbo as a bottle neck if you may) the exhaust trying to exit the engine has to push harder to get out and thus there is a loss in power, thus you usually only get 25-30% efficiency gain. You can dial up the amount of boost that your turbo can make, but if your not careful and don't know your limits, you can destroy your engine very easily, and perhaps end up with a few holes in your hood (or in your side fenders and wheel wells if you happen to drive a Porsche or a Subaru).

The supercharger works differently since the compressor turbine is not powered by exhaust, but instead is powered by a pulley, much like your alternator and water pump work. This removes the need for extra piping and reliance on exhaust, but it takes more power to spin a pulley to power the supercharger compared to a turbo which uses wasted energy (energy of an exhaust). Therefore the power gains from a supercharger are typically lower than those found in a turbo. On the upside it is easier to install, but can sometimes be more expensive (equipment wise).

So what does it all mean? Well, basically if you want increase the power of your current engine, a super or a turbo will do fine, but there is more to that than just the power each type produces. Supercharger typically make "boost" at lower RPMs than turbos do, so the time between you stomping on the gas pedal and the time your get that 'ompf' of power is very short, while on a turbo it takes longer, a few split seconds or more. This is what people call turbo lag. Good example of this is a test that Top Gear did (A BBC auto television show that is just simply 'smashing' as the Brits would say) with Mitsubishi Evolution 8, which beat a Lamborghini on their test track (head to head racing) being beaten by a Ford Focus when drag racing each other starting in fifth gear. That is some mad lag if you ask me. This also means that superchargers have better response times and can get more power faster than a turbo typically does. All is not lost on for the turbo, since turbo lag can be reduced by decreasing the size of the turbo, and thus the amount of power it needs to compress air. With really small turbos you can get incredible response times, the only downside is the puny power produced. This is why a lot of high performance cars that carry a twin turbo moniker have very good response times, since twin turbo doesn't mean you pair two big turbos, but instead have one smaller one that can compress air at low RPMs to give good response time and acceleration and then a much bigger one to give that spins at higher RPMs which gives massive amount of power. This configuration gives you the best of both worlds, fast acceleration and response time, and massive amount of power, and can be seen in cars such legendary cars such as the Mazda RX7, Toyota Supra, and the Nissan Skyline.

Well… that's my spiel for this week, and I'll be back in action also next term. Email questions and I'll answer them in the column or right away via email. Unit2501@rogers.com

Thinking of going on exchange?

RICHARD HUI
2B CHEMICAL

Thinking of doing a study / work exchange somewhere in the world? Uncertain about the process? Here's what I went through in my application to the Université de Technologie de Compiègne in France.

First, see what's out there at http://www.eng.uwaterloo.ca/~exchange. Deciding where to go is a big task; considerations include: work term opportunities, accommodation, finances, language, travelling, FOOD, etc. Choosing Compiègne was simple: it has coop, and I want to study in a non-English language (since my Cantonese sucks, French it is). Once you've picked your destination, you should contact the corresponding exchange program coordinator.

CPH's First Year Office also has a lot of hard-copy university-specific information, especially on the courses approved for credit. Cindy Howe, the administrative coordinator, can also answer most general questions regarding your exchange. Her "exchange" hours are Mon / Fri at 9-12pm and Tues/Thurs 1-4pm, by appointment-only. The application form can be picked there in the office or downloaded from the exchanges website.

Basically, your application requires 4 signatures from: your department undergrad advisor (for chemmies à Bill Anderson), the coop program administrator (Janet Metz), the exchange program coordinator (for most of France à Rob MacPhie), and finally the associate dean of undergrad studies (Wayne Loucks). You should probably get the signatures in that order too.

The department undergrad advisor ensures that you're fit to go academically, going there and coming back. You should have at least a 70% overall average. [If the reasons why you don't have a 70% average are because of first year "disasters", then I think you still have a chance.] Also, the advisor approves your intended courses to be taken at the host university. Make sure he or she can read (non-English) course descriptions, or have them translated before. Don't worry too much if you can't cover everything; you can make up a course in a later term in UW.

Janet Metz just wants to know how your exchange will influence your coop. Keep in mind that you need 5 work terms to graduate.

Hopefully your exchange coordinator won't give you any trouble…

Wayne Loucks gives you the final UW approval. You must attach your transcript, résumé, and a letter addressed to him explaining why you want to go. Cindy Howe receives the application package, and the wait is a little over a week. Then you can start applying to the host university.

Bonne chance!

Debt load survey

Total Responses	553
Number of surveys sent	1820
Response %	30%

Does your family support you financially? (548 responses)

Yes	53%
No	47%

Average Cost of Living for a 4 month School Term (543 responses)
$7,997

Average Cost of Living for a 4 month Work Term (505 responses)
$3,767

Have you applied for local aid or other bursaries to pay for school? (547 responses)

Yes	42%
No	45%
Not Yet	13%

Have you applied for OSAP? (548 responses)

Yes & Received	28%
Yes & Denied	22%
No	50%

Do you have a loan for academic purposes? (547 responses)

Yes	36%
No	51%
Not Yet	13%

How much is the student loan? (267 responses)

1-499	8%
500-999	0%
1000-1999	6%
2000-4999	18%
5000-9999	29%
10000+	40%

Has the differential tuition increases caused you hardship? (533 responses)

Yes	44%
No	28%
Not Yet	28%

How much debt do you expect to be in by graduation? (533 responses)

No Debt	26%
<999	4%
1000-4999	15%
5000-9999	15%
10000-19999	22%
20000+	19%

Do you live at home while at school? (547 responses)

Usually	6%
Used to	2%
No	91%

Have you lived at home while on work terms? (459 responses)

Always	15%
Sometimes	47%
Never	37%

Average of the weekly salary while on work term (467 responses)
$592

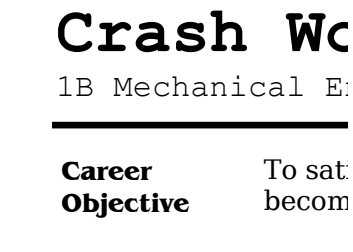
the TIN SOLDIER

THE TOTALLY UNOFFICIAL MUSINGS OF STUDENTS

VOLUME 8.314 ISSUE 9.81 | WEDNESDAY, JULY 27, 2005

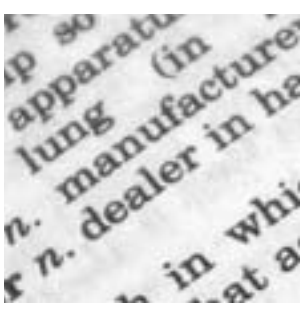
WOOD OR MECHANICAL?

A few pages later



RESUME SUCCESS

A few pages after that



NEW DEPARTMENT

Right underneath this

Check us out on the interwebnet!

Faculty announces creation of new department

ANDREW DODDS
1B MECHANICAL

In the beginning, there were mechanical and civil engineers, and they were good. As time wore on, more specialized engineers were needed, and so spawned forth chemical, geological and environmental engineering. Then as electricity reached steadily north into Canada and decades later mass technology, we were blessed with electrical engineering, and then forced to create those compy, softy, and syssy ones too, and soon of course we will have the nannies. For a time this was all that was needed to keep the engineering education full and well rounded. Now though, a disturbance has been building in the faculty, and the balance has been lost. Change is needed.

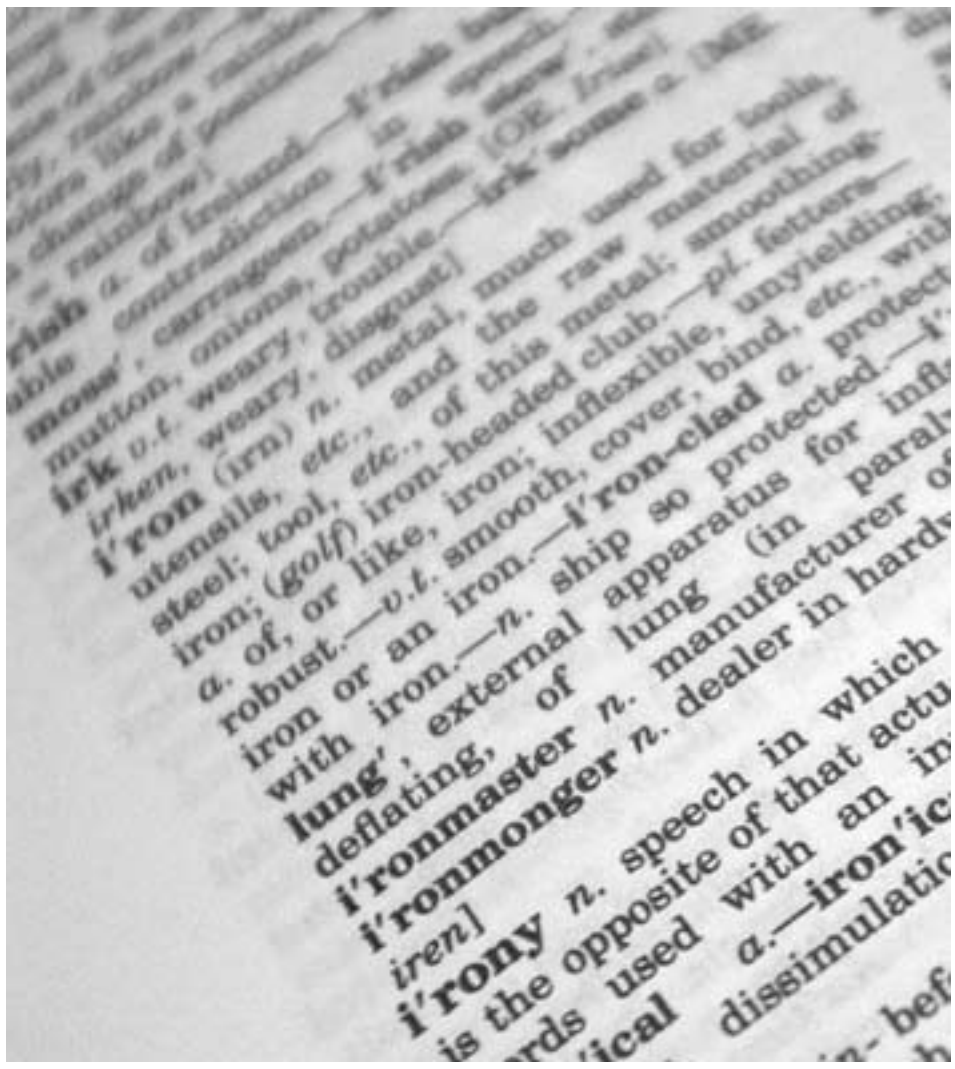
What is the problem, this disturbance I speak of you ask? Between all of our divisions currently supported we surely cover all the bases of science: physics, chemistry and biology. We also support the full breadth of the technological realm with our other offerings. However, despite our graces, it has come to the attention of the administration that we lack certain skills and also dominion over certain academia. The initial effort to equip us with these skills has not been well-received (PDEng), and so a new plan has been formulated. This new engineering division will tackle not only the shortcomings of PDEng, but also another problem that the faculty has had, which I will address later. This new division you ask? It shall be known from this day forth as Arts Engineering.

Beginning in September 2007, to allow time for the nannies to get comfortable and for new facilities and arrangements to be made, UW's faculty of engineering will welcome a new generation of arts engineers into its arms. Finally our scholastic dominion will venture into the last uncharted educational territory. These engineers will study not only the basic structure of linguistics, but also the way in which properly designed assemblies of words can achieve specific goals.

"Some would have you believe that Arts Engineering ... [is] an impossible dream"

They will learn to use language as a tool in order to create precisely defined results in the mind of the reader. These effects include invoking emotions, imprinting key ideas common to the work into the

Continued on page 11.



"Crafting an assembly of words in such a way as to engage the audience..."

Can you handle the sweet creaminess? A C&D review.

CINDY BAO
4A ELECTRICAL

Engineering C&D
In CPH Foyer

Breakfast: Friggen cheap.
Lunch: Friggen cheap.
Dinner: Friggen cheap.

Watcard not accepted.
Leave bags outside.

This is a scenario that sounds too familiar to all who are here for that one Iron Ring: stuck in a lab for a project deadline, being up for more hours than one would like and the body is hungry for nourishment or just a quick caffeine boost. However, at this point, you are definitely too exhausted to make your way to the Plaza. Not to worry, in the halls of Engineering (CPH Foyer to be precise), there is a life saver known as the C&D. (If you don't know that it stands for Coffee and Donuts, you definitely shouldn't be here.)

With its operation overseen by Mary Bland, the surrogate mother to all starving UW engineers, the limited space doesn't seem to be a place that prides itself on variety. However, it provides such assortments than an engineering student cannot possibly count without resorting to electronic devices and the offering ranges from breakfast fare to regular meal items, from snack to beverages (not the BEvERage you use to cure the residual headache from Unit 36).

Start with the beginning of the day, the aroma of coffee and tea just moves me to grateful tears, and my wallet appreciates the price at the same time. To make it more substantial, top that off with turnovers, danishes or croissants.

Better yet, how can it be a C&D without donuts? Sure, as many who come before you, you have been confronted with the perpetual donut dilemma: long

Continued on page 11.

Long donuts: Be sure you are comfortable enough with your masculinity to openly eat one. So creamy, so sweet.

Counterpoint vs. Point (Pun intended)

Mechanical pencils or wooden pencils?

ANDREW DODDS
1B MECHANICAL

As engineering students we are trained to find the optimal solution to any given problem in our field. As time and technology progress, we adapt our technologies to meet new and higher standards. Gone is the horse and buggy, replaced by the much faster automobile. The Wright brothers' plane has been succeeded by today's massive efficiency mule, the Airbus. Times have been changing still, and the once utile wooden pencil is now placed squarely under the blade of the guillotine. Its executioner: the almighty mechanical pencil. Some might suggest that the ancient tool that served so well the playwrights and architects of the past is still number one, but please allow me to seal its fate and drop the blade.

In its heyday, the pencil was a vast improvement over the other tools of the time. It was a self-contained writing implement, needing no extra care to use such as with the quill. Graphite was a marvel, for it gave a much needed range of expression to artists with smudging and varying degrees of darkness, and this too would also aid architects with their sketches and final designs. As the task wore on, the pencil wore down, until finished, the nub would be discarded and a new pencil would be given employment.

If there is one thing that we have learned from today's society it is that waste like that is unacceptable. I used to be a huge fan of cheestrings, making lovely elephants and other stringy creations before greedily biting their limbs off, devouring the delicious dairy delight. Now I notice that not only are they wrapped in a plastic package, each individual cheestring has its own peel-apart wrapper. So much waste is not justified by such a treat, and even worse is that nobody thinks to recycle these plastics, instead further filling our filthy landfills with these non-biodegradable wrappers. In this sense, the pencil is indeed a waste: for every pencil we go through, we need to cut down more trees, and also waste not only half of the eraser, but also the metal strip that makes this half unusable. This is not acceptable.

Besides this, we as engineering students appreciate efficiency. In this quest to lessen wasted time and efforts, how can we justify the continual sharpening of our pencils? Not only is this time consuming and annoying to others, in sharpening the pencil we waste over half of the graphite of the pencil! Think about it: we wear down the cone point to a flat nub, and then sharpen it into a new cone. If we take radius and height of this cone to be 1 unit, that means that we will use $1/3\pi r^2h$, or 1/3 of π units^3. The amount of graphite wasted in sharpening down to this cone is the complete volume of a cylinder of height and radius equal to 1 unit, and as per πr^2h, we will use a whole π units^3, minus the volume of the cone. In total, it means that of the entire volume of the graphite, we will toss away 2/3 of it to sharpening! Now, is that not a colossal waste that we would love to avoid?

Behold my friends, the answer is here: the mechanical pencil! The first point of its beauty is that it is not discarded! No, we can keep on using the mechanical pencil until it should break, and in that case, it is very simple to remove the spring, and then we have one part metal, one part plastic, and a very easy package to recycle (or with metal ones you can just recycle the whole thing). Compare that to trying to rip off that metal band from our 'friend' the classic wooden pencil; you're likely to rip your skin far sooner than the strip. Our next beautiful point is that it takes only a couple clicks to extend out more graphite to do the job, and we never have to sharpen away 2/3 of the lead to keep on using it. Being as simple as a pencil means that there aren't that many facets to the problem, and here we have identified those that apply, and in both cases our mechanical friend is the winner.

Now, some people might suggest flaws to our mechanical friend. They might suggest that lead is wasted if it snaps. This only occurs with inexperienced users, and with time it becomes easy to judge if the lead is too extended and will break. Compare that to sharpening a pencil, where you can seldom see inside the sharpener, and must either spend much time sharpening it just to the end, or else you risk sharpening far more than necessary, generating much waste. They might also suggest that it is a nuisance to have to choose between 0.5mm and 0.7mm lead, but since when has someone complained that they had choice over none? I am confident that McDonald's would have been much less successful if they only offered McNuggets with a medium fry and large Orange drink.

In the end, while charming at times, the wooden pencil is at the end of its useful life, and it is time to toss it to the wind. Hard wood in your hand will snap, but a nice plastic or especially a luxurious metal mechanical pencil can take a licking and keep on pumping. Truly, it's called the "Iron Ring Ceremony" for a reason: wood may have charm, but for pure efficiency it is not the way to go.

The debate rages on. Rigid steel or hard wood? Read on an decide!

MARK ALOCILJA
2N MECHANICAL

Ah the good ol WOOD. Where do I start? The WOOD is like nothing else, it's long and slender, and usually comes in various flexible builds, from the super stiff WOOD to the more nimble and flexible WOOD, and if you ask the ladies, a little nimbleness doesn't hurt if you know what I mean.

First of all, why would want a mechanical one? It's artificial and very impersonal. Do you think you can compensate with a smaller size WOOD with a bigger sized "mechanical"? It's not the size of the boat, it's the motion in the ocean, and in this case, the motion that you use your WOOD, no matter what the size. What if you came home one day and you were all like "Honey… I have some bad news; I lost my WOOD today and had to get a mechanical one to replace it." Damn shame ain't it? On top of that, people with WOODs usually have a few woodies at a time. Who needs Viagra when you have WOOD!

"Tons of famous people opted for WOOD"

WOOD also comes in some weird forms. Ever seen those huge WOODs that are like 2 inch thick and like 12 inches long? It's practically a freakin' weapon. Or how about those WOODs that you can bend into bow and tie and knot and stuff? Wouldn't want to be that guy with that WOOD, damn freaks. WOOD also comes in different grades, from harder to softer ones. It doesn't mean the actually WOODs are harder or softer, but the lead can be harder or softer. WOODs that come in softer grades, usually have lead that makes thicker "marks", it can get dirty if your rubbing your hand all over the place, since it smudges real easily. WOODs that come in harder grades usually make thinner "marks", which are lighter in color.

Our society is also seems to be obsessed with speed and doing things faster, but not taking the time to slow things down, enjoy the sensations life has to offer. "Sharpening" your WOOD is a good example of this. Sure, a WOOD does "sharpen" a little slower than a "mechanical" one, but you have to slow it down sometimes, take your time, feel a bit, "sharpen" your WOOD nice and slow. They didn't call the first portable pencil sharpener the "Love Sharpener" for nothing. (Invented by John Love in the late 1800s if anyone's curious). Want another example? The population growth in Japan is falling. Why? Because the majority of people use a "mechanical" instead of their WOODs.

Finally, tons of famous people have opted for WOOD over "mechanical" ones, and here are some to name a few:

Leonardo da Vinici frequently used his WOOD
George Washington used a 3 inch WOOD when he did his survey on the Ohio Territory
Abraham Lincoln used his WOOD to come with his famous Gettysburg Address
Thomas Edison always kept his 3 inch WOOD close to him at all times
Famous author John Steinbeck had like 60 woodies a day.
Ernest Hemingway always got himself in the mood for writing by "sharpening" dozens of his woodies (Lucky bastard).

With all this heritage and history behind WOOD, it's easy to see why anyone would want to use it. A wood is natural and superior to 'mechanical' in almost everyway. Promote a healthy lifestyle, live life to the fullest, use your WOOD.

Arts engineering

Continued from page 9.

mind, appealing to the mind based on appeals varying with occasion and target audience, and implanting subliminal messages without the audience noticing that they have been influenced in any way. One specific goal of this initiative would be to have each fourth year project undertake a specific goal. One notable idea would be to craft an assembly of words in such a way as to engage the audience with imagery rivalling the silver screen through only the use of words, creating something with such broad appeal that it would spread beyond Waterloo. It goes without question that throughout the world, mastery of linguistics is a skill that can be applied to some aspect of any endeavour. Such an education would prove invaluable in the world of today.

Needless to say those would not be the only laurels upon which the new Arts Engineering would rest upon. It is true that almost all faculty divisions added since the original two have had a side purpose in mind, yet no amount of chemmies, enviros, or syssies has been able to succeed. Where they have failed, our new division shall succeed. The one thing that the faculty of engineering has never been able to tackle has been the distinctly uneven gender balance of its students. Finally, with the addition of Arts Engineering, the division will shift notably towards a perfect balance. It is expected that the new division will enlist a perfect gender balance which will help the overall average of the faculty achieve balance. Any imbalance within the division is expected to lean towards the female overload extreme, which would not be a hindrance to this secondary goal by any means.

Some would have you believe that Arts Engineering and its goals are an impossible dream, out of reach even to the most realistic and not at all ambitious approaches. Ignore them, for the ability to master the English language (and others to follow perhaps) and the inevitable end to the gross gender imbalance present in the faculty of engineering are most desirable goals indeed, and they are completely within reach. I say to every engineer out there that they should welcome with open arms their new brothers and sisters to our great big wonderful engineering family.

C&D: No making out by anything.

Continued from page 9.

or round, about which will not elaborate the points further except purely from a culinary perspective. The round donuts are delightfully fluffy and less sugary compared to the ones from Tim Horton's. Did I mention how rare it is to find long donuts? Be sure you are comfortable enough with your masculinity to openly eat one that's filled with sweet creaminess.

Lunch is when the C&D is at its prime. When it comes to sandwiches and subs, the Cajun chicken wins out with its slight Southern spiciness. The soups leave me wondering why the Campbell's Cream of Mushroom I make at home never had the large pieces of mushroom to prove it contains what it should. For the more health conscious, there are salads. The Caesar salad is definitely authentic tasting. The croutons remain crunchy and the dressing thick and creamy.

Tired of the soup and sandwich combo?

"never ... drenched-in-oil greasiness"

There is also food with a bit ethnic touch. The salmon sushi was my staple throughout my entire first year, while living in the Village. The amount of fish given for the student-friendly pricing is generous. Freshness is never in question since they hardly last in the fridge. The curry and butter chicken are not something you want to miss out. Au contraire, which in French literally means "I know what Aloo Gobi is".

The best part is the snacks, of course. The carrot cakes are moist and soft, goes down easy and count as your servings of vegetables for the day. The brownies have the cookbook correct rich chocolaty gooeyness. When in the mood for something savoury, the samosas are always a good choice. Despite of the deep fried crispy wrapper, they never taste anything close to drenched-in-oil greasiness.

A few things to keep in mind while in the C&D. First of all, no making out by the coffee machines and microwave. Also, get know Mary and the volunteers who make the C&D happen, not only you may get the Friday afternoon free food, you could just be lucky to have the lovely British lady proposition to you; begin with looking for a screw under her desk.

Classifieds

Wanted:
LowRider in all his marvelous, bandanna-infused glory. Must be available 24/7 for low riding, clubbing and bar hopping. Eagerly awaiting your reply, the _LR_GroupieFanClub Chicks@pimpin.com

For Sale:
Iron Ring, in excellent condition and comes with Tool privileges. Asking price is $50 000 but you can also give me your soul. Contact disgruntledECE@arts.uwaterloo.ca

Men seeking Women
Lonely…
I am so lonely…
I have nobody…
To call me own…
Ladies, contact singingchipmunk@lonelyAkon.com for a good time.

Women seeking men
I'm desperate… there are no more single guys at Laurier, so I'm counting on you, Waterloo. I know you have plenty of guys so don't lie to me! singlefemale@what-else-but-arts-and-biz.laurier.ca

Secrets to a winning resume

A potential co-op employer was clearly impressed by the acronymnal firepower the resume below possessed. It was forwarded to the Tin Soldier News Service so that others could benefit.

Crash Wolfslammer

1B Mechanical Engineeering

73 PPAP Lane
Pontiac, MI 26900

Student ID: 201099999
1-888-227-5625 (Phone)
1-888-999-9999 (Fax)

Career Objective

To satisfy my dynamic interest in the automotive industry, with the ultimate goal of becoming a Senior Engineer at GM and wiping out all them foreigner cars from America

Summary of Qualifications

Experienced with FMEA, APQP, PPAP, BOM, JIT, WIP, 5Y, FEA, GD&T, ECR, DWR, QS 9000, QS 9001, QS 90210, ISO 6900, CYA, Six Sigma, Kaizen, CSA, ECN, RFA, ECO, ANSYS, TPM, CMMS, WCM, WMD, CATIA, UG, ACAD

19 years of automotive experience; grew up in Joe's Garage

Work Experience

Jan 2005 – April 2005 Colonel Stators Engineering Oshawa, ON

Human Initiatives Leader

- Independently managed the photocopier and fax for over 500,000 entities, with over 4 satisfied staff
- Efficiently delivered to associates thermofluiodal caffeinated beverages in compliance with Just-in-Time Principles, resulting in Six Sigma Morale.
- Regularly optimized and implemented the stream line trajectory of aerodynamic recyclables during work
- Experienced fracture mechanics and failure modes in over 100 projects

June 2004 – Aug 2004 Kandi's Novelties Engineering Toronto, Ontario

CAD Technological Leader

- Drafted and produced over 500+ anatomically explicit CAD drawings; applied GD&T and FEA
- Devised and conducted simulation studies for performance validation and design refinement
- Performed data acquisition and hands-on measurements of over 1000 specimens for statistical analysis and establishing the design parameters
- Initiated thermal + bending stress analysis and deflection calculations of rigid members
- Designed fly-by-solutions for human interfaces and ergonomics of over 500 products

June 2002 – Aug 2002 Starbucks Coffee New York, NY

Senior Morale Leader

- Conducted tests and experiments involving thermofluiodal caffeinated beverages.
- Familiar with adhesive mixing of n-node semi-conductive polymeric suspensions in conjunction with caffeinated liquids
- Developed tertiary phase plots and eutectic diagrams of solid state desserts

Education

1999-2004 Jefferson High School Winston, Alabama

- Graduated Summa Cum Hard

Interests

- Dreaming about CARS, building CARS, driving CARS, repairing CARS, destroying CARS, having sex in CARS, racing CARS, reading about CARS, designing CARS, writing about CARS, hijacking CARS, buying CARS, selling CARS, CARS CARS CARS CARS CARS CARS CARS CARS CARS CARS CARS CARS CARS CARS CARS CARS CARS CARS CARS CARS CARS CARS

News briefs

Student sues tattoo parlour

An UW Engineering student is taking legal action against local tattoo parlour "Jim's Big-Ass Needle" over a small mistake on his tattoo. Jim incorrectly tattooed the first order linear ODE formula onto the student. The student subsequently suffered massive failure of his calculus final. The student is seeking $5 Million in compensation. Jim has offered to beat the shit out of student.

Environmentalists in frenzy

A small hole in the ozone layer has mysteriously opened up over the University of Waterloo. Environmentalists are on a rampage to find the cause of this sudden, localized destruction of the ozone layer. The good news is that now anyone can head over to the Village 1 green area for an instant tan. Do not spend more than 15 seconds in the area, unless you're going for the Oompa Loompa look.

Dangerous stationery

A UW Engineering student is in critical condition after narrowly surviving a mechanical pencil failure. Doctors at Grand River Hospital are working around the clock to remove bits of spring and graphite from the student's body.

The future looks bright

In an unusual mix-up, most likely involving someone being extremely drunk, the chemical engineering midterms were confused with ESQ projects. Instead of colour by numbers, the grade 3 kids had to deal with organic chemistry. To say that the results are surprising would be an understatement. The ESQ kids aced the organic chemistry midterm with a class average of 87%. The chems, who received the colour by numbers assignment, failed miserably with a class average of 32%. Investigation into this incident will begin as soon as the chems sober up.

Sad day for engineering students

It is my dreadful duty to inform you that our beloved LowRider has passed away. The bandanna wearing, pavement scraping IW columnist died of over exhaustion during an epic orgy with hordes of groupie chicks he thought he had.

UW Student creates $250 000 air conditioner

"Well, I had this pile of cash kicking around, and I thought 'Yea, I suppose I could start up a company, buy a nice car, or donate it to charity, but at that moment I was just really hot. i just decided to buy $250 000 worth of Freon and let it evaporate in my room. For that much money I got about 1 300 kg. When asked about the damaging effects of CFCs, the student replied: "Isn't the ozone layer trapping those greenhouse gases? I'm doing everyone a favour!"

Co-op shaft proposed

Architecture students have proposed the erection of a polished steel column entitled "The Shaft" in front of the co-op centre. A plaque would dedicate "The Shaft" to all co-op students, in recognition for their unfailing receipt of the shaft from co-op.

The Kyoto Accord. It's all about us.

ANDREW DODDS
1B MECHANICAL

Hot enough for you yet? Even in India over the winter term there were days when the weather was more bearable than here, where V1 was built with no consideration for heat whatsoever. Already there have been four deaths in East Toronto due to this heat wave. As an engineering student I feel compelled to do something about this (granted I'm not a P.Eng yet or Superman ever). Since I write for the paper and my articles are (hopefully) widely read, my goal here now is to inform you of the many faces of global warming.

I'm sure right now you're all thinking that I'm crazy when I suggest that this heat wave is being caused by global warming, as if global warming could heat up Canada this much this fast. Actually, it's because we've been getting large bodies of air blown up from the hot and dry American south-west. But that is one of the consequences of global warming. More of the sun's rays making it past the ozone layer and heating up the surface air. That energy has to go somewhere, and so it could very well have created these gusts of hot air from the south that have been persisting for a month now. If not there, then another outlet for this energy is storms, such as the three hurricanes that battered Florida one after another last summer, or the ones currently making their rounds.

Now before I go on, let's just set up an introduction to the idea behind global warming. Carbon dioxide gases come from many things. We exhale it as a by-product of our body's use of oxygen to fuel us. Volcanoes also spew it up into the air, and it is created when we burn coal in our power plants or gasoline in our cars. Carbon dioxide gases in the atmosphere increase the ability of the atmosphere to absorb energy from the sun and to keep it locked in. It's like adding all those slot machines in casinos; they draw in more customers, and end up forming such a maze that it is harder for people to leave. Normally in our Earth system, we would hope to take in as much energy from the sun as we give off, thus keeping us in a balanced state. However, the dramatic increase in the levels of carbon dioxide in our atmosphere is increasing the energy we absorb, while decreasing the amount we give off. We all know science well enough to know that if you're taking in more than you're giving off, there's going to be an imbalance, and a net change.

So what's causing this problem to escalate? Sadly, it's all us. The industrial revolution changed the world, allowing us to take tasks performed by humans and make machines that could do them faster, more reliably and for less cost. Of course, machines all require energy and that has created a lot of carbon dioxide from power generation plants. Besides that, the past century also brought us two wonderful marvels in the form of powered personal locomotion (cars) and powered flight (planes). While extremely helpful, both of these technologies burn fuel which is constantly adding to our problem. One of the biggest changes we are about to face comes from the new industrialization wave that is sweeping over China. Suddenly one sixth of the world is now beginning to need the power, machines, and cars that the western world has called standard for decades. Again, this is only further adding to our problem.

What are the motivations against Kyoto, against saving our planet you might wonder? I hate to point yet another finger southward but it is without question that the biggest problems Kyoto has to overcome all stem from our good friends, the Americans. The first point I would like to make is that half of all the greenhouse gases (GHG) created each year come from the US, so that in itself proves my point fully, but nonetheless I will extend it further. We would not have to blame them if they were to sign the Kyoto Accord and agree to reduce their emission levels to 4.5% below 1990 levels. However, with their refusal to sign it means that even if every other country in the world agreed to these reductions, the US would still proceed on to forecasted levels of over 30% higher than 1990 levels by the year 2010. With half of the world's emissions at that level, Kyoto isn't having the effect it should.

I find it most interesting to note this difference. While they share the same genes, both went to war to help win an election, and can both be called George Bush, one thing that differentiates their reign over the American people is that Senior Bush signed the treaty way back when he was in power. It was only in the past 5 years that Junior decided to revoke the US endorsement of Kyoto protocol. This was done to 'protect the American economy, which is always the first priority'. In reality, there was huge pressure from Exxon Mobil, as well as Bush's Texan and Saudi oil friends. There is much fear that should they adhere to the Kyoto Accord, the economy would fall, and that the oil friends would lose vast sums of money.

This is not the case. Looking back to history, once upon a time people complained that the economy would fall should they be forced to deal with acid rain. In the end, the acid rain collected from smokestacks has more than paid for the cost of removing it. In order to reduce emissions, technology must be modified. This would create many jobs in research divisions, meaning that the new jobs would attract smart minds to America, as opposed to only manual labour. Not only that, but it would create new companies to provide these technologies and to apply them to industry, to automobiles, to planes and to everything else that adds GHG to the atmosphere. Am I missing something here? Aren't MORE jobs better for the economy?

There is the other concern too though, that of the oil friends. They fear that a reduction in GHG means a reduction in the need for their oil, and thus a reduction in not only the price of oil but also their sales. However, people complain most about an increase in recurring costs, as opposed to an increase in a one-time cost. That is why there hasn't been chaos in the streets as car and house prices have gone up, but as gas prices have been inching up, people have been shouting from the rooftops about it, condemning it every cent of the way. There are two options for technology: either it must remove the GHG before it gets into the atmosphere, or else it must create fewer GHG. If technology removed GHG, then there would be no change to any aspect of the oil commerce, and nothing for the oil friends to fear. Should technology create fewer GHG, it might indeed stem from a reduction in the need for oil. But, let's review our economy before we label that as a bad thing for the oil buddies.

Right now, let's imagine I pay $20 every time I fill up at the pump. This creates the bad level of GHG that we want to get rid of. With new technology, the price of my car goes up another one or two thousand, maybe. I am used to cars getting more and more expensive, so I don't complain. My car emits fewer GHG by using higher efficiency technology requiring less gas. Still, I'm used to paying $20 to fill up, but let's say now I'm only using half as much gas. Maybe if I'm lucky I'll be thrilled that the price actually goes down to let's say $15, but I'd still be used to it if it was still at $20. So in the end, the oil buddies still have a demand for their stuff, because we still need it. However, they pump half as much, but get paid maybe twice as much. This means two good things: they do not lose any money, and their supply lasts twice as long (meaning they make twice as much money in the end). However, the reason that this is seen as a bad thing is because it means that someone ELSE gets to experience all the profit. Not some other country, some other leader. The greedy leaders of today want to see extra money flowing in right now, under their reign, as opposed to seeing things remain constant and reliable and have people 50 years from now enjoying this same great life. They'd rather have their money now and not worry that 50 years from now their country is broke and life is abysmal. But that is the way greed works. Why should we worry

Continued on page 15 "Kyoto"

Charobeam cooks: A number of tasty things.

CAROLYN SUTHERLAND
1B MECHANICAL

That creeper Yip decided he didn't want to make the third AND fourth IW issues too long, so a few of us staff were cut! Lucky for you, I've prepared triple the recipes I know you all love. Firstly, we have a tasty pie for those of you who love pumpkins and pies together.

Reduced Fat Pumpkin Pie
Serves 8 Calories: 352
Fat: 12g

1 16 oz. can canned pumpkin
1 14 oz. can fat-free sweetened condensed milk
4 large egg whites
1 teaspoon ground cinnamon
1/2 teaspoon ground ginger
1/2 teaspoon ground nutmeg
1/2 teaspoon salt
1 all-ready pie crust

1. Preheat oven to 425°.
2. In a large bowl, combine all ingredients (except pie crust) and whisk to mix well.
3. Pour mixture into pie crust shell. Bake 15 minutes.
4. Reduce oven temperature to 350°, bake 40 minutes longer or until knife inserted an inch from edge comes out clean. Let cool.

You think pumpkins are good? Try a yam; yams are a sweet potato and have a nicer texture and taste compared to the regular potato, although I don't think they'd go well with gravy… the inside is orange in colour and the outside looks like a brown, mutant cucumber.

Roast Yam
1. Peel and wash the yams in salted water, dry off any excess water.
2. Roll in flour and bake in a 180° C (350° F) oven for about 30 minutes or until tender and browned.
3. Cut in half and scoop out the interior flesh, mash with a little milk, and a knob of butter as you would for mashed potatoes.
4. Trim the shells to form little "boats", and fill each one with the mashed yam mixture.
5. Sprinkle with parsley and return to the oven to heat.

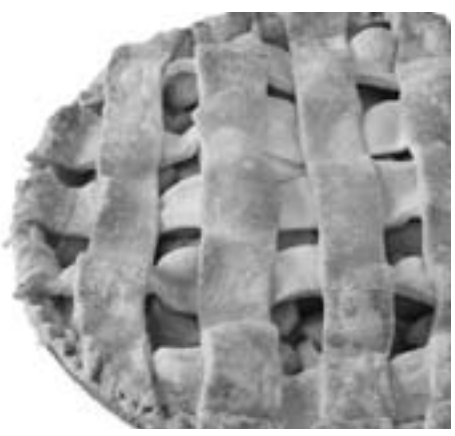
Best when served with meat or grilled fish, but a can of spam could be substituted if necessary. And finally, for everyone who loves chocolate, a nice twist on the white meringue cookie.

Chocolate Meringue Cookies
Serves 10
Prep: 15 min
Cook: 75 min

5 large egg white(s)
1/4 cup unsweetened cocoa
2 Tbsp sugar
1 1/2 tsp vanilla extract
1/2 cup sugar
1 tsp unsweetened cocoa
1/8 tsp ground cinnamon

1. Preheat oven to 225°F (107°C). Cover 2 cookie sheets with parchment paper (or A LOT of cooking spray so the cookies don't stick) and set aside.
2. Combine 1 egg white, cocoa, 2 tbsp sugar and vanilla extract in a large bowl. Mix well.
3. Beat the remaining 4 egg whites with an electric mixer until soft peaks form. Add the remaining 1/2 cup of sugar while beating until the egg whites are stiff and glossy.
4. Thoroughly mix the egg whites with the chocolate mixture in the large bowl.
5. Fill a pastry bag with the mixture and pipe out the cookies onto the cookie sheets. Each cookie should be about 1-inch wide. (To make your own pastry bag, use a gallon plastic bag and cut a hole in the corner.)
6. Bake for 1 hour and 15 minutes or until a dried texture is achieves
7. Mix the remaining 1 teaspoon of cocoa and cinnamon in a small bowl. Sprinkle over cookies and let cool before removing from cookie sheets.

Well, that's it for me. I hope everyone passes their finals and good luck with the work term!



Mmm...pie...
www.cusatours.com

Looking for ways to procrastinate?

CHARLING LI
3A MECHANICAL

Looking for reasons to procrastinate while studying for exams? Look no further and attempt a Sudoku, which means "single number" in Japanese. This number puzzle began modestly in Japan, gained momentum in the UK and Europe and was recently picked up by major papers across North America. Now, Sudoku invades Waterloo! The rules are simple: each small 3x3 grid, row and column should contain the numbers 1-9. While the rules may be simple, there are strategies to help you solve Sudoku.

You'll find that you start to develop your own set of strategies, why not trade them with friends and have Sudoku showdowns? The level of difficulty range from gentle to diabolical and should take you 10-30 minutes to solve once you get the hang of it. The one included below is rated gentle, and you, as a smart and logical engineer, should have no problem with it.

After all, if you can figure out the intricacies of J-K flip flops, or write a compiler program or even figure out what some of your TAs are mumbling about in something that resembles English, you can handle the numbers 1 through 9 on a little grid. Fair warning though, these puzzles are addictive. For more challenging Sudoku puzzles visit www.sudoku.org.uk.

NOTE: The Iron Warrior is not responsible for any final exams failed due to Sudoku obsessions.

Sudoku No 99 Rated: moderate

There is only one rule to completing a sudoku: each 3 × 3 box, as well as each row and each column, must contain all the numbers 1 to 9. While the rules of this logic puzzle may be simple, there are numerous strategies to help you solve it. For general hints on sudoku puzzles visit **www.sudoku.org.uk.** Solution in tomorrow's *Daily Telegraph*.

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

Courtesy www.sudoku.org.uk

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

Solution No 99

Solar car update:

Waterloo 5th: Onwards to Calgary

NASC2005 PRESS RELEASE
IW NEWS SERVICE

Only 11 minutes separate the top two cars in the North American Solar Challenge (NASC) - the 2,500-mile cross-country solar car challenge that began in Austin, Texas on July 17 and ends on July 27 in Calgary, Alberta, - on the ninth day of competition. Twelve teams reached the final stage stop in Medicine Hat, Alberta, where the University of Michigan took the overall race lead with the lowest cumulative time of 50 hours, 32 minutes and five seconds.

Michigan is followed closely by the University of Minnesota at 50:43:54 and the Massachusetts Institute of Technology at 50:43:54. Other teams to make it to Medicine Hat, 2,306 miles from the starting point in Austin, Texas, are the University of Missouri-Rolla, University of Waterloo, Western Michigan University, Principia, University of Missouri-Columbia, CalSol, Stanford University, Iowa State University and the University of Calgary.

The NASC has two classes competing; the open class where teams are allowed to use batteries or solar cells of their choice and the stock class where teams use only lead acid batteries and solar cells approved by NASC officials. The stock class leader at the end of nine days of raycing was CalSol with a time of 56:22:12. CalSol is in ninth place in the overall standings.

The North American Solar Challenge is an educational event in which participants build and drive cars that run on 100 percent solar power. The car with the fastest cumulative time will win the competition. Eighteen cars are participating in the event.

Official daily results will be posted at http://americansolarchallenge.org/index.html. Final cumulative times are based on actual time, plus time penalties for rules infractions. High-resolution JPEG photos with photo captions are available at https://www.eere-pmc.energy.gov/nasc05. Follow the cars online via the NASC's GPS tracking system at http://americansolarchallenge.org/event/asc2005/gps/index.php.

The contest is sponsored by the U.S. Department of Energy (DOE), Natural Resources Canada, DOE's National Renewable Energy Laboratory, TransAlta, University of Calgary, CSI Wireless, AMD and Manitoba Transportation and Government Services.

DOE's overarching mission is enhancing national security. The priorities of the department's energy programs are to increase domestic energy production, revolutionize our approach to energy conservation and efficiency, and promote the development of renewable and energy efficiency technologies.

NREL is DOE's primary national laboratory for renewable energy and energy efficiency research and development. NREL is operated for DOE by Midwest Research Institute and Battelle.

Natural Resources Canada (NRCan) plays a pivotal role in helping shape the important contributions of the natural resources sector to the Canadian economy, society and environment. The department conducts innovative science to generate ideas and transfer technologies, and represents Canada's international interests to meet our global commitments related to natural resources. By promoting the responsible use of natural resources, NRCan builds on the Government of Canada's commitment to ensuring the quality of life in communities, a healthy environment and continued economic prosperity "for the Canada we want, for ourselves and for future generations".

Photo by Stefano Paltera/North American Solar Challenge

Twenty university teams from across the U.S. and Canada prepare to take off from the start of the North American Solar Challenge, in Austin , Texas Sunday, July 17, 2005. The 2,500-mile solar-powered car race, the longest in the world, will have finished by press time.

WARG competes in "impossible" competition

BRENT TWEDDLE
WARG

The University of Waterloo Aerial Robotics Group (WARG) is competing in the International Aerial Robotics Competition (IARC) in Fort Benning, Georgia.

WARG is currently one of the leading teams in the IARC, having won first place in 2004 and ranking second overall among 20 teams from Canada and the United States. It has received the support of key sponsors: Research In Motion (RIM) and QNX Software Systems Limited (QSSL).

"The IARC is considered by its organizers to be an 'impossible' multi-year competition," said Brent Tweddle, President and Technical Leader of WARG. "It is broken up into four levels and since 2001 only one team (Georgia Institute of Technology) has completed levels one and two, and two teams (University of Waterloo and University of Arizona) have completed level one."

Under the contest rules, if any team completes levels three and four this week, they win $50,000 US. If not, the prize will continue to grow by $10,000 US yearly.

"Because we are focusing on a long-term strategy, this year WARG will only be competing in Static Judging and not the Performance Judging," Tweddle said. "We also will be unveiling a new airplane this September."

The IARC is designed to advance the current state-of-the-art in autonomous aerial robotics technology. The mission set out for students to complete has not even been accomplished by any private or government organization.

Members of WARG pose with their aircraft after completing Level 1 of last year's competition.

The first level requires a vehicle to autonomously fly a three-kilometre course around a set of GPS waypoints and hold a position above a small city. For the second level, the flight vehicle needs to autonomously find, somewhere in the city, the location of a building with a symbol and a one metre by one metre open window on that same building.

To achieve the third level, a vehicle must autonomously enter that window, find a specific image inside the building and relay that back to the judges. The fourth level requires completion of all three levels within 15 minutes -- again all aspects must be done autonomously.

Tweddle said that WARG's long-term strategy is to use a large fixed-wing airplane to travel the three km, search the city with onboard cameras and drop a guided parachute through the open window that will then release a small ground vehicle to search the building for the required visual information.

The entire technical approach will be published in the Association of Unmanned Vehicle Systems International's Unmanned Systems 2005 Conference Proceedings.

WARG is working on this system with a team of more than 100 undergraduate and graduate students from a variety of disciplines within UW's Faculties of Engineering and Mathematics.

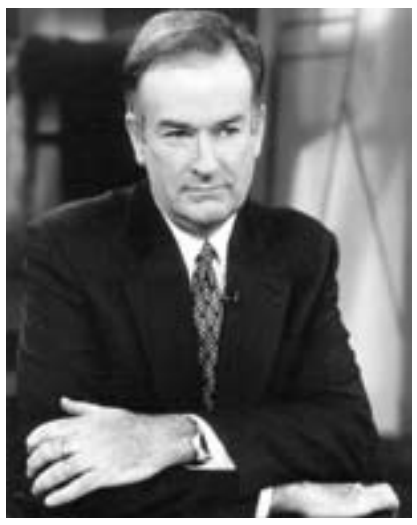
Of WARG's sponsors, RIM designs and manufactures the Blackberry handheld devices donated for use by all of WARG's executives. QNX Software Systems donated their Neutrino Operating System and Momentics Development Environment, which is used on all of WARG's microprocessors.

Kyoto

Continued from page 13.

about GHG and Kyoto though? There is a myriad of reasons to be concerned, but I will only express two of them, ones that may seem outlandish but are actually not science fiction at all.

As we all know, the world works on a system of time. Flowers bloom when the snow melts, bears hibernate when it gets colder, and crops grow while it's warm during the summer months. Already global warming has altered this harmony and delicate balance that has kept Earth running for several millenia. In northern Canada's territories, spring thaw came early this year by many weeks. That meant that flowers started blooming earlier, meaning that they would die off earlier as well. This shifts the entire balance of the food chain. Suddenly flowers aren't around as long for bugs to pollinate, and thus bugs aren't around long enough for birds to feed off of. Already this is not looking too good. Heating up by just one degree has already killed off America's ponderosa forests. This heat will help to further extend the deserts by further drying up the earth, and force us to consume more water than we did before. This in turn could lead to use of desalinated water from the oceans to keep pace, but this process uses energy, and you guessed it, more GHG. This self-enhancing cycle would rise like the curve of e to the –x, and before we knew it, the world would be dead.



Even Bill O'Reilly acknowledges the existence of global warming.

My second scenario is much briefer. Here we will ignore the biological consequences. This time, as before, GHG heat up the planet, and over time it gets worse. What is worse? Well, there are scientists who believe that Venus once was hospitable to some degree more than it is now (with constant acid rains, lakes of sulphuric acid, and surface heat all over found here only in ovens pumped up to blackout-inducing levels. This could very well be our fate in time if we do not stem the rise of GHG emissions.

I'm sure that at this point there are still some of you who don't agree with me. Years ago nobody believed that Earth was round. Later on, nobody believed that Earth revolved around the sun. Still today, many people don't believe that the Greenhouse effect is real, or that GHG emissions pose a serious threat. But more and more people are starting to believe, giving up their fears and ridiculous beliefs in exchange for the absolute truths provided by our friend Mr. Science. Even Fox News' Bill O'Reilly has come to realize that it is indeed here, admitting on-air that "Global warming is here. All these idiots that run around and say it isn't here. That's ridiculous." If you can't trust science, at least when the most bigoted, opinionated, America-loving anchor says it, you should be able to think twice. It's real, people, and it's about time that we started thinking about how we can save our planet, for it may not be so many years off that it starts to die right under our feet and all around us.

Dan's Dangerous Diner

CAROLYN SUTHERLAND
1B MECHANICAL

Dangerous Dan's Diner
Not For Small Appetites
714 Queen St. East @ Broadview
Toronto

Restaurant reviews are a great way to find tasty food if you're new to the area, but are your taste buds longing for something unusual and risqué; something other than Bonjour Brioche? Do you have absolutely no problem clogging your arteries and giving your digestive system a reason to hate you? Do you ever feel like a carnivore trapped in a vegan's world? In that case, head on over to Dangerous Dan's Diner in downtown Toronto for a true BEEF experience. This is the kind of place that keeps cardiologists and Dr. Atkins in business.

At the corner of Queen St. E and Broadview, this old West themed eatery is known for its heart-stopping, colon-clogging burgers. For only $11.95 you can order the Coronary Burger Special; two 8 oz patties, four slices of bacon, two slices of cheddar and a fried egg smothered in condiments and slapped between two huge buns. It also comes with fries and gravy, which I think the chefs added just for kicks. This behemoth requires that the victim be able to unhinge their jaw if they hope to eat it like a normal burger. Or if you can spare $19.99 and a few organs, then get the Colossal Colon Clogger Combo. Also known as the DD Quadruple C, this 24 oz burger consists of a monster beef patty, a quarter pound of cheese and a quarter pound of bacon between two buns and smothered in the usual condiments. To top it off you get a poutine, two eggs and a shake on the side. You can actually feel your heart slowing and your liver dying as this mother of a burger is consumed.

The double D also features the usual items you'd expect such as wings and sandwiches, but how could anyone pass up ordering the king of all burgers? Should you decide to lay your life on the line you'll be featured on the Wall of Gluttony, which is covered with pictures of people enjoying their Coronary burgers. That's MY new life goal.

Unfortunately I have yet to enjoy such beefy goodness. But never fear, for as soon as my co-op term starts I'm taking my dad down to the double D for a Quadruple C. It will be my belated father's day gift for him... and hopefully that won't include cardiac arrest!

Wondering about women in engineering?

So were we. To find some answers, Jaclyn Sharpe went way back and spoke with six-year-old Engineering Science Quest Girl. Why so many guys in engineering? Read on.

JACLYN SHARPE
1B MECHANICAL

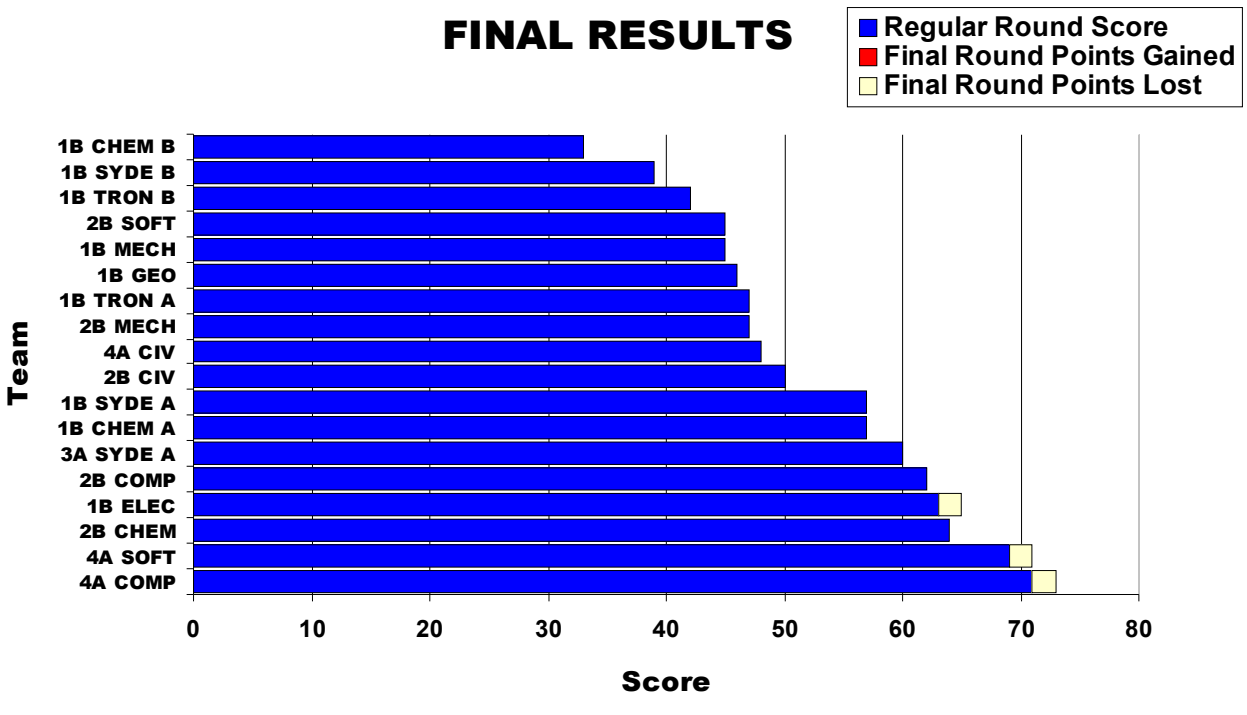
** The names have been changed to protect the innocent.*
IW: Hello, and thank you for doing this interview with me. How old are you Engineering Science Quest Girl*?
ESQG: 6.
IW: Which ESQ group are you in?
ESQG: Primary.
IW: What do you get to do in that group?
ESQG: It's about bugs.
IW: Oh, do you like bugs?
ESQG: Not really.
IW: What kinds of things do you do in your group?
ESQG: We play games and we draw and we have snack and we do activities and things.
IW: What was your favourite activity?
ESQG: Star light start bright.
IW: What is that?
ESQG: You get this black paper and you poke holes with scissors in it and then you have a light bulb and then you get to switch it on and then the stars glow bright.
IW: Sounds like fun. What's your favourite part generally?
ESQG: Colouring.
IW: You've been hanging around all the engineering buildings all week right?
ESQG: Yeah.
IW: Do you know anything about engineering?
ESQG: Sort of, like I know what civil engineers are, and um...yeah.
IW: What do civil engineers do?
ESQG: They build ah, like, buildings and stuff.
IW: What do systems engineers do?
ESQG: I don't know.
IW: Do you know any else about engineers?
ESQG: I don't think so.
IW: Do you know what kinds of different engineers there are?
ESQG: A civil, a mechanical, a computers... that's all I can think of.
IW: That's pretty good; you got all the important ones. Do you know any engineers?
ESQG: Yeah, my dads an engineer!
IW: What kind of engineer is he?
ESQG: A computer engineer.
IW: Do you know what you want to do when you grow up?
ESQG: I want to be an artist.
IW: Ah, what kind of artist?
ESQG: Like go and draw butterflies and flowers and ... stuff like that.
IW: Paintings?
ESQG: Yeah, cause I like paintings but my drawings are pretty good too.
IW: Do you think you would like to be an engineer?
ESQG: Maybe.
IW: What kind of engineer would you be?
ESQG: A civil engineer.
IW: Why?
ESQG: I like to build a lot, like with Lego and something.
IW: Lego is the best.
ESQG: But I like (points at building) to go and build like a real building not with Lego, like with brick and stuff.
IW: Cool.So, there's not that many girls in engineering, do you think that would be a problem?
ESQG: It might be.
IW: You'd have to hang out with boys all the time.
ESQG: -
IW: Hello, (talking to boy who ran over) do you want to join the interview.
ESQB: What's the interview?
IW: It an interview about engineering and girls in engineering.
ESQB: No! (runs away).
IW: If you were going into engineering, would that be a big factor for you, whether there were more guys than girls?
ESQG: A fact?
IW: Say you were going to go into engineering and there were 100 people in your class and only 13 of them were girls, do you think that would be a problem?
ESQG: I wouldn't really care... but I would care a little bit. I thought you were going to ask me what biology meant and stuff?
IW: Ok, what does biology mean?
ESQG: It means living things.
IW: Ah, what kinds of living things?
ESQG: Like trees and plants and humans, and maybe some animals.
IW: Do you like biology?
ESQG: Yeah.
IW: Do you think you want to be a biologist?
ESQG: Maybe.
IW: Do you like plants or animals best?
ESQG: I like both. Is the test over?
IW: It's not a test it's an interview. And almost, just a few more questions. Does your dad have an iron ring?
ESQG: A what ring?
IW: Does your dad have an iron that he wears on his pinkie?
ESQG: He doesn't wear any jewellery.
IW: Do you know what an iron ring is?
ESQG: Kind of, I think it's a type of jewellery?
IW: Do you know how you would get one?
ESQG: No, but I think it's somebody's birth stone or something...
IW: In engineering your iron ring-
ESQG: That? (Pointing at red rubber wrist band)
IW: No that's for giving blood. It's a little ring you put on your pinkie finger, it tells everyone that you're an engineer and you're going to be a good engineer. If you had one would you want to wear it?
ESQG: Maybe some times, like to school or something, maybe work...I'd be grown up then.
IW: Ok this is the last question: Why do you think there are more guys in engineering than girls?
ESQG: Because guys, they like building and stuff more than girls.
IW: So they like Lego and stuff more?
ESQG: Yes.

4A Comps a Bowl of Pure Genius

MICHAEL SUE-KAM-LING
1B CHEMICAL

Last Wednesday the brightest of the engineering barrel gathered in RCH 101 to compete for the title of supreme bowler of the geniuses. Eighteen teams, representing almost all disciplines, showed up to battle for honour, and more importantly the cash prize of 150 bucks. The directors, Rajat Suri, Russ Parnell, Richard Clark and myself, laboured tenaciously throughout the duration of the term to generate a veritable panoply of titillatingly obscure trivia. We gathered knowledge from all aspects of the world – yes, even non-engineering related – and compiled them into a comprehensive list of questions.

The contest was mainly comprised of four twenty-question rounds covering all categories. Between rounds, representatives from three or four teams were called down to the front to compete in the High Stakes Lightning Round wherein each player was given a buzzer and an opportunity to win 3 points (or lose 3 if they answered incorrectly) per question. Also, in the middle of the competition, the teams endured the Death Round wherein five extremely difficult questions were asked. To the dismay of the directors, there were no casualties during the Death Round. After the scores from these rounds were compiled, the top four teams competed in the Final Round wherein each team was asked three questions on which they wagered on how well one individual from their team could fare in the selected category.



The four teams to make the final were 4A Software, 4A Computer, 2B Chemical and 1B Electrical. On the final question, 4A Computer, with a strategic wager, passed 4A Software to defend their title as Genius Bowl Champions. 2B Chemical rounded out the top three by making a risky wager of ten points in their second question. 1B Electrical fought valiantly but were unable to recapture the top three finish they received last term.

Honourable mention goes to the 1B Chemical B team who finished dead last, but did so with only 2 team members present. The award for the most spirited class went to 1B Systems A who were rowdy throughout the contest with clever use of their megaphone.

Those who did not have the opportunity, nay, the privilege of competing in this term's Genius Bowl should come out next year for an afternoon of competition and fun, the alternative, of course, being yet another evening of monotonous differential equations and their ilk. If you start studying now, you too can have a piece of the glory, and a sweet trophy too.

Media coverage of London attacks

July 7th saw terrorist attacks on London. The world's press took up the story, adopting headlines such as a "City under siege." Andrew Dodds argues here that such media saturation was entirely necessary.

ANDREW DODDS
1B MECHANICAL

The global media is always in a scramble to find the best stories to grace its 6pm broadcasts, website front pages, and newspaper and magazine front covers. In this battle to bring you the best, the most shocking and attention-grabbing stories are always the ones chosen to rest in the spotlight, and it is the ones most relevant to our lives and that most touch our hearts that will always make print. The London bombings are an example of this: it is not only extremely shocking and attention-grabbing, but the deaths of 55 Britains to date exceed the bloodiest Iraq bombings of the past while, and it fills our hearts with great sorrow. The coverage of such events as these, while monotonous and unimportant to some, is nonetheless both relevant to the media for garnering an audience, and to ourselves.

First and foremost, we are a country of curious Canadians. We have a constant desire to look into the lives of others, and to always know what is happening in the world. This is best exemplified by the abundance of 'reality TV' shows that have no trouble surviving the unforgiving game of TV ratings. It is also shown in the number of newspapers that we can find when going into a convenience store, ranging from the most nationalistic issues in the Post to the most mundane and off-beat contrivances found in the Enquirer. If we are a culture that has to know what dress Katie Holmes is going to wear to her wedding, then surely when dozens die in terror attacks in a first-world nation much like our own we would also like to know about it. Just as we like to know every detail of the Pitt-Jolie romantic developments, we want to know every detail of the progressing investigation into who caused such an atrocity and how it could have happened.

Beyond this insatiable curiosity we have, this is indeed an appropriate level of coverage for such an event as this. When we compare it to another similar type of attack, say 9/11, we find that casualties are roughly one tenth of that day, when you factor in the population difference as well. 9/11 managed to stay in the media for months, shut down the airways and nearly destroy the airline industries, gave Bush the mandate that would keep him in power over the 'weak' Democrats, and caused the world's most powerful nation to wage war in one foreign country after another, even removing Hussein from power. Now if that's the result of 9/11, surely what we're seeing here with respect to the London bombings aka 7/7 is a fair amount of coverage for one tenth of the overall loss of 9/11.

Still, no matter what our curiosity or the relative coverage an item should get, it all depends on the relevance of it to dictate how much and how long the coverage should be. While health care reform is always on the top of our minds, we have no interest in whether or not the Japanese are undergoing a complete system overhaul. It just doesn't matter to us, and knowing this the media never lets loose a single word on the subject. These London bombings however do carry significant relevance. Enough impact was made that not only did Blair, the Queen and countless Britains observe a moment of silence, but even subways in Toronto stopped to remember. Even the ultimate enemy of the 'English pig-dogs' as history would demonstrate, the French too paused to remember, President Chirac pondering looking out over his country. The relevance of this is all too apparent to us. As I've said before, what if Harper had taken power and as he planned had made vast improvements to our military before sending them over to Iraq? Would Canadians, with our beloved maple leaf flag an emblem of hope known the world over, have made a better target than the British? It is a reality just a little too real to wonder if we might be the next target of terrorism, with the scars of Air India still healing. It is not too hard to think that if we were to upset someone that such a thing could happen here. While it may not seem like much for a bomb to explode on the Gaza strip or in Iraq, events like the Oklahoma City bombing are incredibly shocking and unexpected.

Maybe it might seem strange to keep up the coverage, but crimes such as this cannot go unpunished. Should a mastermind still be on the loose, he will be hunted down and brought to justice. But until he is found, we as compassionate human beings must be kept assured that action is being taken and progress is being made. Honestly though, on the lightest of notes, in a world where celebrity romances and sightings can top the news hour, certainly news as tragic and heart-wrenching as this deserves more attention and awareness.

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.

Sandford Fleming Foundation
E2 3336, ext 4008, sff@engmail
www.eng.uwaterloo.ca/~sff

The Sandford Fleming Foundation final debate was held on July 8. The winning team was from Chemical Engineering consisting of Jason Bhinder and Rajat Suri. Second place was Civil Engineering represented by Joske van Leeuwen and James Johnson.

IRON WARRIOR SPRING 2005

Photo Contest

Over 20 students submitted entries to the photo contest - thanks to all of them for taking the time to sift through their shots to find their favourites. This term entrants had the misfortune of competing against the newly-welcomed Architecture, who apparently really warm to photo contests and brought their artistic firepower to bear. I think next time we'll have to have a separate Architecture category.

Art contests are notoriously subjective and therefore a selection of the other entries are shown as well.

Photography outside of studios is usually a combination of opportunity and skill - a bit like life actually, if you'll excuse my melodrama for a bit. The most artistically disinclined could produce a great picture in exceptional circumstances, whereas some people can make the ordinary seem extraordinary. Soapboxing aside, to the left are the winning pictures. Credits below.

top:
Thomas-Bernard Kenniff
Architecure

right:
Alicia Liu
3N Computer

bottom:
Edward Ho
3N Mechanical

Matt Neilson - 1B Mechanical

Eddie Lee - M2 Architecture

Mark Ojascastro - 4B Architecture

Samuel Cheng - 1B Mechatronics

Michael Kloihofer- 4A Architecture

Jim Burger - 1B Mechanical

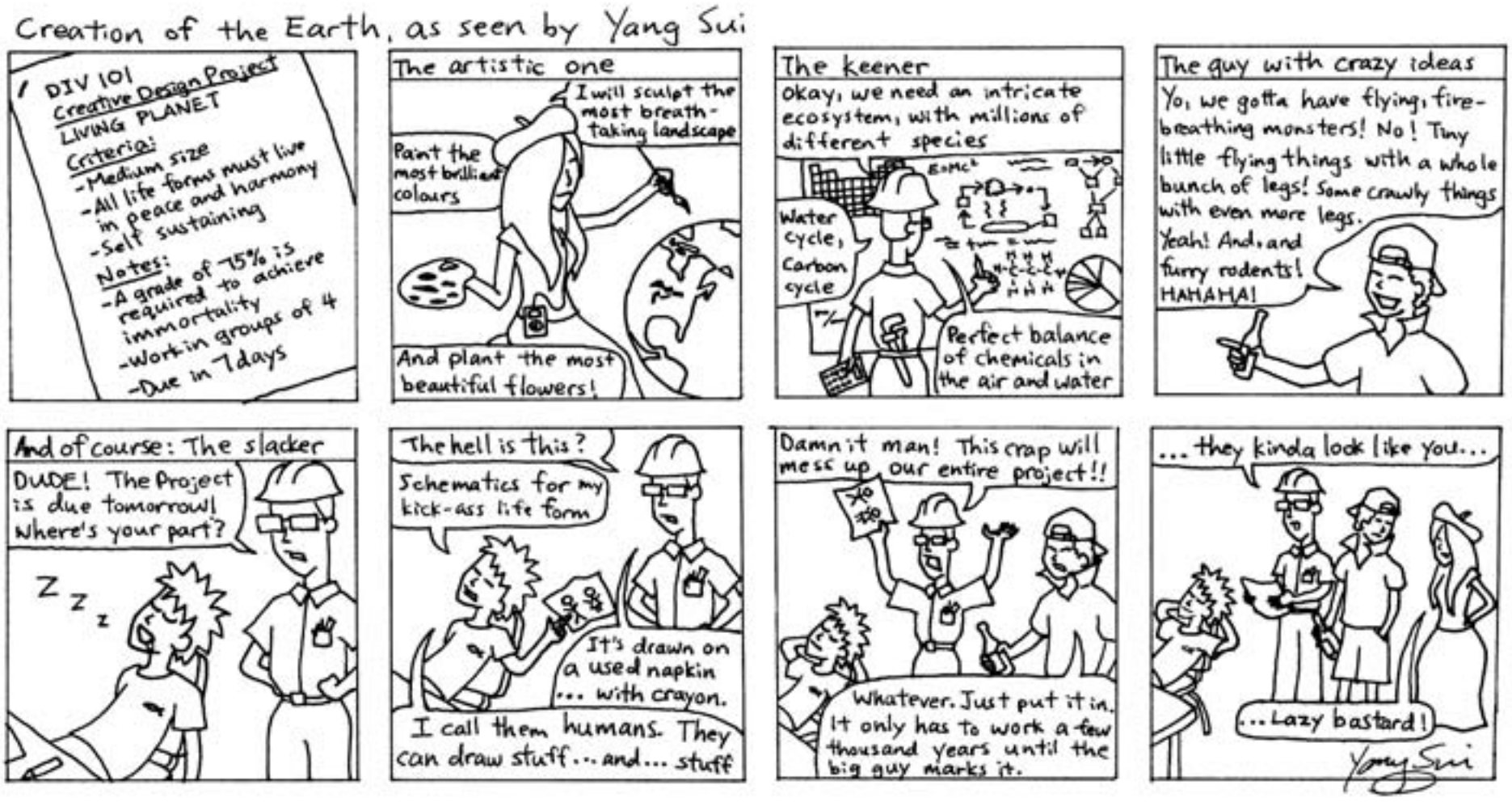
Mark Ma - 1B Mechatronics

Angie Ng - 2B Architecture

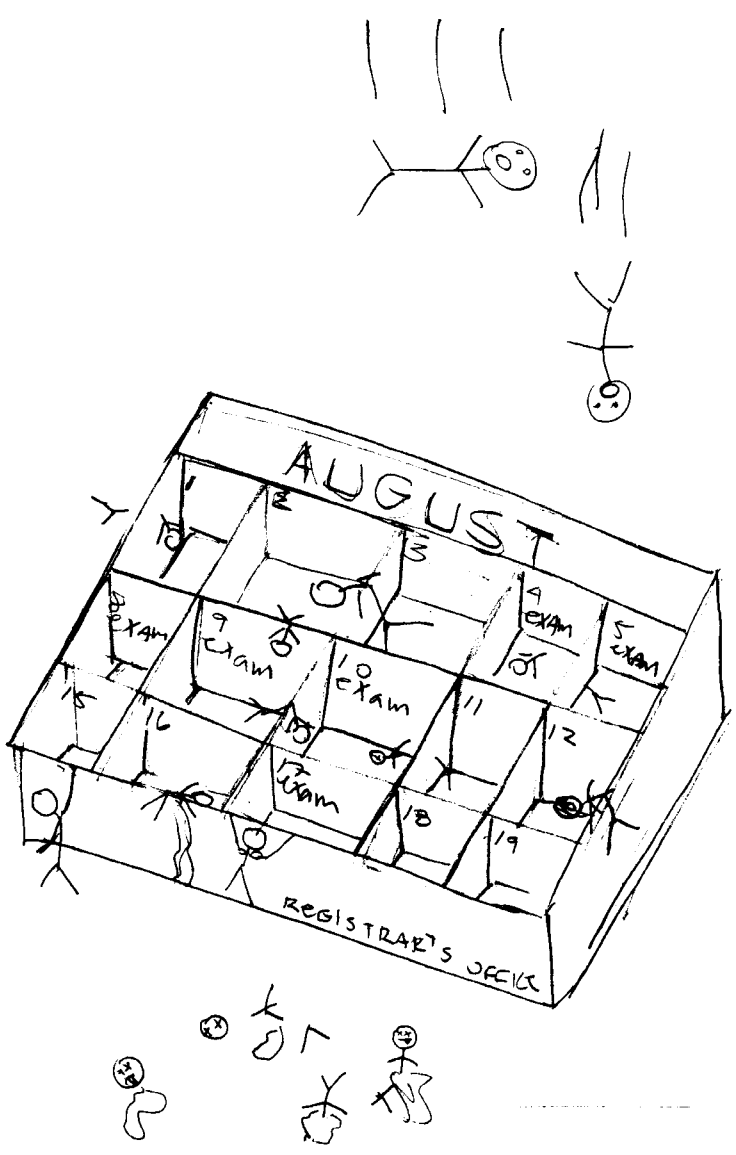
James Joyal-Carmichael - 1B Mechanical

Arts

YANG SUI
3A MECHANICAL



DAVID YIP
3A MECHANICAL



YUVRAJ GOEL
1B MECHANICAL

Got the life

The sitar notes fill the palace
with unending ecstasy
as the concubines dance
to the mystic percussion

Their dance is suggestive
and subliminally lethal
they transfuse and induce
hypnosis

They dance with daggers
that slice through air and hearts
their ambrosial eyes
seldom meet mine

All the while I sit
on my golden throne
stroking my majestic beard
in half-sleep

At length I smile
and mumble,
“This is the life”.

Arts

HOFMEYR CEDARBRAE
3A MECHANICAL

Man & machine

The world so full of green
Constantly going against nature
Trying to get rid of all that is pure

Why does man do this deed?
Perhaps it is to succeed,
Or to bring more comfort to his life
By being selfish, and egocentric.

Man must learn to live in harmony
To love, respect and take care of nature
For only then will we make true progress

TANEEM TALUKDAR
2N SYSTEMS

Bangladesh, I remember

pitter patter,
pitter patter
the sky rumbles
and cracks open

rain
on a sultry uncanadian
summer day

and I remember
the rains
from a land a lifetime away

monsoon torrents
whipping over green fields
a frenzied climax
to a burning summer

rivulets trickle down my face:
caught in the rain
running back home through
fields of rice,
laughing

AFSHEEN KHAN
3A CHEMICAL

A known stranger

The stranger I have known so long,
With a smiling face but strong.
Daily his first sight,
Gives me hope and delight.

His words are heard with lot of care
Though his speech is very rare
He cares for his dear ones
For whom he works years and months.

He stands there with something new and bright
He is a candle giving light.
Daily his small pieces of advice,
Make me better at life.

His curious glittering eyes,
Keep in sight all who hide.
He lifts the people with out them knowing
His job is very tough and tiring.

There are many who call themselves great,
But the real one is one about whom I state.
He was a stranger after all,
Until I visited him at his call.

the Iron Inquisition

Sarah Vandaiyar and Richard Hui, 2B Chem

What do you do to relieve exam stress?

T: "Play with toy guns and shoot little animals."
L: "I turn into a ball of stress."
- Tristan Wiggins & Lisa Jones, 2B Chem

"2 hours with the editor and camera."

- Krista Akerman & Michelle Yu, 3A Mech

"I go insane!"

- Peter O'Sullivan, 1B Geo

"Hook up with some hot round donuts."

- Long donuts, 3X C&D

"2 hours with hot girls and camera."

- David Yip, 3A Mech

"Officially, I play basketball."
[Demonstrates what he does "unofficially"...]
- Jay Lee, 1B Enviro

"Curse profs."

- Martin Arciszewski, 3A Mech

"Hook up with some big long donuts."

- Round donuts, 1X C&D