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THE IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY | VOLUME 28 ISSUE 9 | WEDNESDAY, JULY 11, 2007

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Why Wasn't This Person Welcome at Canada Day?

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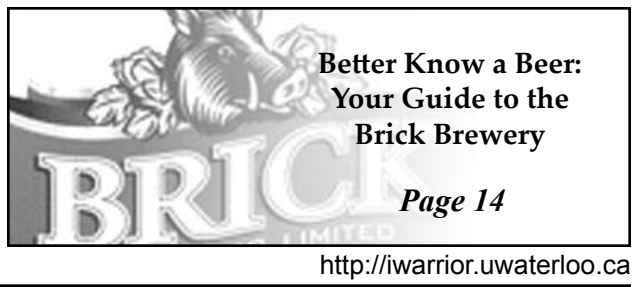

Better Know a Beer: Your Guide to the Brick Brewery

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http://iwarrior.uwaterloo.ca

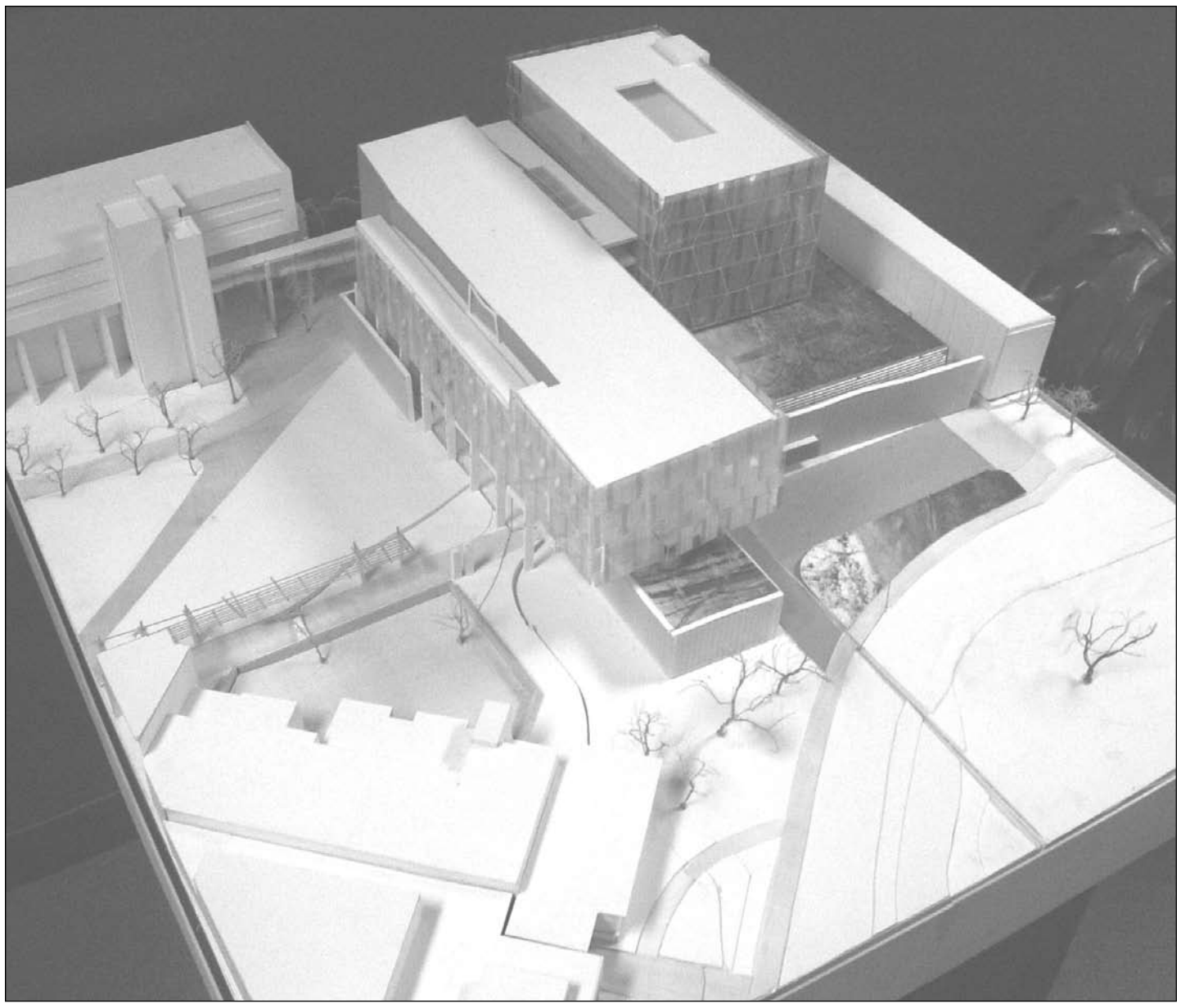
Completion of Quantum-Nano Centre Set for September 2010

BAHMAN HADJI
4A COMPUTER

Despite recent rumours regarding the delays the project has encountered, construction will finally begin for the preparation of the Quantum-Nano Centre (QNC) this October. The building will be the new home of the Nanotechnology Engineering undergraduate program as well as cutting-edge research on nanotechnology, biology, and chemistry, in addition to physics in conjunction with the Institute for Quantum Computing (IQC). The massive eight-storey building, which will contain 261,000 gross square feet of space, will be the new centerpiece of the University of Waterloo campus, being situated north of the Biology 2 building (B2), and its net assignable space will be equally shared between Nanotechnology and the IQC. It is being designed by two architecture firms: HDR Architecture, which is designing all of the building's labs, and KPMB Architects, which is designing the rest of the building. The project is expected to cost in excess of 100 million dollars, and construction of the building should take two and a half years, with the target completion date being September of 2010.

The first phase of construction will be to extend the service tunnel underground from the Student Life Centre (SLC) to B2. Service tunnels connect all of the buildings on campus to the centralized heating plant at the Central Services building, and the one at the southeast end of the SLC was built in a way to allow a future extension. The extension will require the patio of the Bombshelter outside the SLC to be dug and replaced

See CONSTRUCTION on Page 11



This model, on display in the BF Goodrich building northeast of campus, shows the Quantum-Nano Centre as it will sit between MC (top left), the SLC (bottom left) and B2 (top right).

Engineering Computing to Develop Request Tracking

DAVID YIP
'07 MECHANICAL

In a few months, the next batch of hopeful engineers-to-be will settle into guaranteed first-year residence spots, but we know that the Engineering computer labs will soon be much more of a home than any triple room in Ron Eydt Village could ever be.

The Iron Warrior spoke with Professor Peter Douglas, Associate Dean of Engineering Computing, about lab upgrades, quality of service, the UW Angel Course Environment (UW-ACE), and better communication with the Engineering Society.

Engineering Computing is responsible for the maintenance of the public labs in the Engineering buildings, such as Lever (E2 1302), Helix (RCH 108), and Wheel (E2 1308). They also update the software on the public machines, and many of the departmental labs. However, many of the computer labs are departmental computer labs, and Engineering Computing is not responsible for those except in specific instances where support is requested by that department.

Tracking System

At an Engineering Computing feedback session held in the Fall 2006 term, Professor Douglas revealed that Engineering Computing was working on a support tracking system called EngRT, originally scheduled for a Winter 2007 release. "[EngRT] is now being developed and tested with PDEng," Douglas said.

"The idea is that you can submit a request, any kind of request, in theory. It could be a request for a hardware problem with the machine, or a software problem," explained Douglas. These problems get turned into support requests, which can be directed to the appropriate support personnel based on the nature of the problem.

Currently requests for work or help are called in through phone, or e-mailed in, or made in person at ECUSC – the Engineering Computing User Support Centre (E2 1308A). However, this informal system is prone to having requests forgotten, and, as Douglas explained, "No one else in the department will know about the request." However, with the request tracker, requests will be web-based, and a database will be kept, allowing other support staff to take over when others are on vacation, for example.

Professor Douglas estimates that the system should be ready for the upcoming Fall term. It was originally scheduled to launch earlier but there have "been a few glitches with getting it implemented", and it has taken "a lot longer" than originally planned.

Quality of Service

Students have reported dissatisfaction with the level of service at ECUSC, for example in obtaining refunds for misprinted pages. Professor Douglas encourages students to contact him if there are any problems. "Talking to me would certainly be the easiest thing," he said, when asked about recourse regarding improvements in ECUSC service. "I have not heard of any [problems], and I would like to hear of all."

Upgrades

Two labs are closed right now due to renovations: the Multimedia Lab (CPH 1346) and the GAFF Lab (CPH 2367). The Multimedia Lab will reopen this September while construction for adding a second floor on top of it continues through December. When the Lab reopens, it will contain 120 new computers, but the same monitors as before.

See RENOVATIONS on Page 4

Letter from the Editor

How the Offer of 180 Acres of Farmland Transformed the Identity of UW

BAHMAN HADJI
EDITOR-IN-CHIEF

The 1950s were a tense time in North America. The urgency of the Cold War and the threat of the Communist Soviets were drawing more and more people into scientific fields. In the small town of Waterloo, Ontario, Waterloo College (now Wilfrid Laurier University) had just gone through a period of uncertainty when it came perilously close to moving to Kitchener. By 1955, new Waterloo College President Gerald Hagey had realized that the arts school was not only failing to meet the needs of the community due to its lack of a science curriculum, but its survival was also doubtful due to the same fact. After an extensive period of considering different options, Hagey formed a subcommittee to put in place the necessary steps to establish a science faculty. The name Waterloo College Associate Faculties was chosen for the affiliated school, and the President's plan was to have WCAF add to the current College campus, which was a rectangular block of 35 acres without hopes of sprawling out much further – but plenty of room for expansion over the next ten years, Hagey naively believed.

It was Ira Needles, the WCAF Board of Governors chairman, who first presented what he called the "Waterloo Plan": an innovative, new type of education – a *co-operative* partnership with industry to have students spend one quarter of the year in school and the next quarter training at work. The advantages of the Plan extended far beyond the benefits to the students: The school would be able to admit and accommodate twice as many students, and the teachers and classrooms would be in use at all times during the year.

Hagey soon realized that the idea of co-operative education could be developed as part of an applied science program for engineering students. Though no one doubted that the demand for an engineering education was high enough to warrant the Associate Faculties, there were questions about the nature of this "Co-operative Education" plan. There were also issues involved with establishing a program to train engineers in such close proximity to other Ontario engineering schools such as the University of Western Ontario.

The Associate Faculties were awarded a $25,000 grant to study the feasibility of the Waterloo Plan, and concluded that it was "practical, feasible, and desirable". Co-operative education was "a means through which more people, with the ability to procure a college education, will be motivated to give their education the application required for successful progress." But critics doubted the ability of the extension of a liberal arts school, which itself had no nationally known faculty members nor a strong alumni base, to be able to offer a full engineering program. They dubbed the program "interrupted education", and argued that a disordered program would result in an inferior engineer.

Amidst all of the controversy, the Associate Faculties pressed on. The first Department of Co-ordination head, George Dufault, began work in February 1957 on the enormous task of getting high school students to sign up for an unorthodox program and asking companies to commit to hiring students. July was now just five short months away, and the unconventional beginnings of the birth of a new university were taking place.

On July 2, 1957, 74 students arrived at the Waterloo College campus, where two temporary buildings dubbed Annex 1 and Annex 2 had been quickly constructed just in time for engineering classes to begin. The influx of these students to the already crowded College campus meant that the newly established school had to look towards acquiring more land, possibly across Dearborn Street (now University Avenue). However, WCAF did not have any luck acquiring land around the Dearborn and King Street area, facing outrageous asking prices. The provincial government granted the Associate Faculties half a million dollars for the construction of a new Science Building, but the primary plans for the building expected it to cost one million, and soon after, one and a half million dollars, threatening to bankrupt the school.

As the Fall term began, a different option for the Associated Faculties was suggested: Instead of a general building for science, the school could build a specialized Chemical Engineering Building that would be ready for use within one year, be within budget, and be able to house the full six years of undergraduate studies in Chemistry and Chemical Engineering.

Although it was not meant to, this suggestion made for a shocking realization. When considering the arrangement of other buildings to accommodate the other programs, it was obvious that the Associated Faculties would need a much larger campus in order to grow and be able to build the Physics, Mechanical Engineering, and Civil and general engineering building, each to be opened one year following the last. A fifth building would be needed soon after as well, and it was obvious that the current campus could not handle this expansion.

This did not make Hagey happy. He had dreamed of building a university around Waterloo College, and the Associate Faculties moving away meant his vision would be shattered. He pushed a series of different options including expanding along Bricker St. and Dearborn St. But ultimately, his opponents saw that building the new Chemical Engineering building anywhere near the Waterloo College campus would be an example of limited vision. Ultimately, the Associate Faculties received a letter from Major Holdings offering to sell 183.8 acres of farmland just west of the current campus for an attractive purchase price of only $344,240.50. Despite Hagey's emotional appeal not to abandon Waterloo College, the land was purchased by the Associate Faculties, which now owned a site as large as most other major universities' campuses. The Chemistry and Chemical Engineering Building was to be located on the Schweitzer farmland, and construction immediately began on the architecturally simple building, designed that way to allow it to be built as fast as possible with the maximum amount of usable space. The farmhouse (now the Grad House), meanwhile, provided temporary office space for eager faculty members during construction. The Annex buildings were cut in half and moved to the new campus shortly after.

And thus, the seed was planted for the beginning of the expansion of what is now the main campus of the University of Waterloo. The rest is history.

Of course, there is only so much I can fit into one article. I did most of this research by reading *Waterloo: The Unconventional Founding of an Unconventional University* by Dr. Ken McLaughlin, from 1997.

I have several copies of the book to give away, courtesy of Jason Coolman, Director of Alumni Affairs. If you'd like to win a copy, please send a letter to the editor at iwarrior@engmail explaining why you'd like to read the book, or giving feedback on this editorial or any of the other content in this issue or the previous three this term.

Incidentally, Dr. McLaughlin's new book, *Waterloo@50: Out of the Shadow of Orthodoxy*, released earlier this spring, is available at the UW Bookstore. His latter book is more of a coffee table book, containing larger pictures and much less text, making it an easy and interesting read.

IW Increases Visibility

THE IRON WARRIOR
NEWS BUREAU

The Iron Warrior was the recipient of a generous donation from the Waterloo Engineering Endowment Fund last Fall, which allowed the newspaper staff to be able to purchase a digital voice recorder, which has already been used for several interviews and feature stories this term, as well as an ergonomic keyboard and mouse to replace the old set.

But most importantly, part of the money granted in the Fall 2006 WEEF proposal was to be spent on ten newspaper racks to increase the visibility of *The Iron Warrior* and allow for more secure distribution of its issues.

The racks were installed by UW Plant Operations recently in the following ten locations: RCH - third floor, RCH - first floor, CPH - First Year Engineering Office, CPH - IW office, CPH - next to the whiteboard outside POETS, E2 - entrance from RCH side, E3 - outside Student Machine Shop, DWE - entrance from Grad House side, DC - Library entrance, and MC - outside the C&D and Comfy Lounge on the third floor.

Correction

In the chart published with WEEF Director Brandon DeHart's Executive report in the June 27 issue, the refund numbers for the 2B Nanotechnology class were omitted. The class actually had 36 members who refunded their donation.

The Iron Warrior regrets this error.

THE IRON WARRIOR
The Newspaper of the University of Waterloo Engineering Society

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The Iron Warrior is a forum for thought-provoking and informative articles published by the Engineering Society. Views expressed in The Iron Warrior are those of the authors and do not necessarily reflect the opinions of the Engineering Society.

The Iron Warrior encourages submissions from students, faculty and members of the university community. Submissions should reflect the concerns and intellectual standards of the university in general. The author's name and phone number should be included.

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

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Engineering Society Executive Elections

JACLYN SHARPE
3A MECHANICAL

On Thursday, July 19th Engineering Society "A" will be holding elections to replace the current Executive members. Engineering Society Executive members are voted in for 16 months at a time, so elections occur every other on-stream term for each Society. Though early speculation suggested that many people would be running for positions this term, only eight candidates submitted nominations for the six available positions. When only one candidate runs for a position the candidate is acclaimed and only requires a two-thirds vote of confidence from the EngSoc Council to be ratified.

The Executive consists of the President, and Vice-Presidents Education, External, Internal, and Finance. The WEEF Director, thought not part of the EngSoc Executive, will also be chosen in this election. Only VP External and VP Finance will be decided in the election on July 19th, while all of the other positions will simply need to be ratified at the July 11th EngSoc meeting.

The President of the Engineering Society is responsible for the administration and actions of the Society. The President is the official representative of the Society and the guardian of our mascot, The Tool. Tyler Gale (3A Geological) is the only candidate running for this position. He is currently EngSoc VP Education and is campaigning on a platform of continuity, marketing, and accountability.

Jeffery Lipnicky (3A Mechanical) is running for VP Education uncontested. If ratified, he will be responsible for representing the academic, education, and Co-operative Education interests of Waterloo Engineering students. Lipnicky plans to address the high failure rate among first-year students, work with Co-operative Education & Career Services, and ensure that student concerns about PDEng are acted upon.

The VP External, one of the two contested positions, acts as the official liaison between the Engineering Society and organizations external to the University. A large portion of the VP External's duties require attending provincial and national conferences on behalf of the Society. Dave Halford (2B Mechanical) and Samantha Pinto (2B Civil) are both campaigning for this position. Pinto intends to build stronger relationships with Engineering student teams and with other Ontario universities. She is also planning to work with the Professional Engineers Ontario to open discussion about the pros and cons of becoming licenced. Halford wants to run a large-scale charity event on A-Soc and encourage more Engineering students to participate in events outside of the Engineering Society.

Lee Anne Belcourt (2B Mechanical) is the only candidate for VP Internal. The VP Internal is mainly responsible for coordinating the numerous directorship which fall under this position. Other responsibilities include keeping and distributing Society meeting minutes, and publicizing Constitutional amendments. Belcourt is dedicated to improving communication with the student body, and improving EngSoc's sometimes dubious image.

The other contested position is VP Finance, whose main activities are paying accounts, keeping accurate financial records, and preparing a budget for the Society. Mark Hazlett and Adam Melnik are both running for this position. Hazlett is in 2B Chemical, and has been involved with the Society since his first term. He plans to bring the Novelties Shop to the Internet. Melnik is in 3A Geological; his goals are to maintain fiscal responsibility and increase transparency when putting together the budget.

Brandon DeHart is acclaimed as WEEF Director. The WEEF Director is responsible for administration of the Foundation, which includes processing refunds and allocating funds. DeHart was voted into power in a by-election last term, so with only one term under his belt he feels that there is still a lot he wants to accomplish.

More information on the candidates can be found on pages 8 and 9 of this issue of *The Iron Warrior*. There also be an All-Candidates Forum on July 12th at lunch in the CPH foyer, where questions can be asked of the candidates. The candidates will also be making the rounds to classes this week.

All on-stream members of the Engineering Society (those students who have not taken back their $14 EngSoc fee) are strongly encouraged to vote. Unlike most elections in which you'll participate, in this election your vote will make a difference. It is not unusual for a race to be decided by only a handful of votes, especially when two strong candidates run: The current VP External won with 50.4% of the vote, having only two votes over his opponent. To vote, drop by the CPH foyer between 8:30 am and 4:30 pm on Thursday, July 19th.

EWB Rallies for 0.7%

DAVID MORRIS
1B ELECTRICAL

On Saturday, July 7 (or 07/07/07), Engineers Without Borders (EWB) culminated their "Summer of 200.7" campaign with a marathon events, capped off with a rally to send Primer Minister Stephen Harper a message demanding that Canada increase the total amount of our Gross National Product (GNP) contributed to reducing poverty in third-world countries to 0.7% by 2015. This gradual increase would involve increasing GNP contributions by 15% each year, and, according to EWB, would end up being the equivalent of a 1% increase in GST by 2015 in terms of monetary contribution. The reading of the message in unison by supporters was filmed by CTV, and EWB plans to mail a DVD to the Prime Minister along with a signed petition. The message will also be uploaded to YouTube, the online video website.

The message started with the President of the EWB Waterloo chapter, Josh Vanwyck, reading: "In 1970, on the recommendation of Lester B. Pearson, Canada joined developed countries around the world in committing to increasing our development aid to 0.7% of several times since. In the ensuing years, our nation's prominent voice on international development has fallen silent, to the point of being one of the lowest contributors in the developed world. Although we're now halfway to the target date of the Millennium Development Goals, Canada has hardly started".

The rest of the group then said in unison: "It's time that our actions matched our values. It's time for Canada to take a leading role in eliminating poverty. To Prime Minister Harper and the Canadian Government: We call on you to establish a timeline for reaching 0.7% by 2015. It's time to make a difference."

Other than the message to Prime Minister Harper, EWB ran other events during the day, including a 6-hour Bike-a-thon, whose path made a large "7" figure across Waterloo. EWB also had many establishments around campus donating 0.7% of the day's profit to the cause, including Phat Cat, Almadina, The Grill, Seoul Soul, Ethel's Lounge, and Kick-off's. There was also, apparently, an official, orange, 0.7% drink to enjoy, although it didn't seem like the Bomb-shelter was serving it at the time.

EWB also had a couple of events running at the Student Life Centre as part of the Warrior Weekend, including South African Gumboot dancing lessons and a poverty piñata in the shape of a ghost (EWB's theme for the day was a 0.7% pie graph Pac-Man eating a ghost labeled poverty). They ended the night with an after hours barbeque and sold out of burgers by the end of the night, thanks to plenty of help from patrons leaving the Bomber.

Participants recorded a message to Primer Minister Harper demanding that Canada increase the total amount of our Gross National Product (GNP) contributed to reducing poverty in third-world countries to 0.7% by 2015.

Who's Paying for PDEng?

TYLER GALE
3A GEOLOGICAL

I have been contacted by a few fellow students asking how the Professional Development for Engineering Students (PDEng) courses are funded, and heard some odd rumours related to this. As such, I am going to take this opportunity to shed some light on this situation, and perhaps to mitigate some of the rumors.

In order to understand the PDEng financial situation, one must first understand how university finances are managed, and realize that it is a complicated situation. All tuition fees from all faculties are paid directly to the University. They are not directly given to faculties, departments, or programs. All of the University's income goes into one "master budget" and is then dispersed to the individual faculties and related bodies. Each faculty then, in turn, has a budget breakdown. This is where PDEng gets its money.

To put the simple point forward right off the bat, PDEng has not resulted in a direct tuition increase to Engineering students. That is to say, tuition fees were never increased for Engineering students specifically to account for additional expenses related to the PDEng program. As such, it has never been a direct financial burden on students. On the other hand, as an additional expense for the University, the argument remains that PDEng could in effect take away from some of the other resources required for the upkeep of the quality of other undergraduate-related programs and services. In effect, a portion of our tuition is also being consumed by the PDEng program, simply because the funding for the PDEng program is coming out of the same pot that our tuition is filling.

There were two finance-related justifications for the creation of the PDEng program. First, the program was developed contingent on the appropriate level of funding being available. This means that somewhere someone did some analysis of the financial viability of the program before it was brought to the University Senate for final approval. Secondly, the University developed the Professional Development programs (which have now moved beyond the borders of Engineering to Math and Arts) with the anticipation in mind that this would generate an increase in government funding to the school. Whether or not this anticipated government funding has become a reality, I do not know.

It has also come to my attention that a rumour is going around amongst undergraduate students about PDEng running a deficit. A university program cannot run a deficit in the same way as a business losing money. University programs like PDEng do not generate income. When talking about budgeting in the context of a university financial system as I discussed, the word deficit has a different meaning from the situation of a business running a deficit. A program within the University system running a deficit would imply that it is not meeting its financial targets governed by the University's distribution. This is likely an expected situation for the PDEng program, since it has been growing very rapidly and has been running into constant resource shortage barriers.

Canada Day Festivities Successful

Engineering Society Mini-Olympics Thoroughly Enjoyed

DAVID MORRIS
1B ELECTRICAL

This Canada Day, as part of the University of Waterloo's Canada Day celebration, the Engineering Society ran an extremely successful mini-Olympics involving 12 events in total, including Water Balloon Toss, Sponge Racing, Tower Building, Prez Says, Tug-of-War, Water Slide, Soccer Kickoff, Obstacle Course, Musical Mats, and the crowd's favourite, the Dunk Tank. The Dunk Tank consisted of a vice-clamp holding a board suspended over a tank of water. When the target beside the tank was hit by the kids throwing the softballs, the ball moved a level which proceeded to hit the release-switch on the grip, sending the Dunk Tank volunteer to their watery doom.

The Water Slide was also extremely popular; even with overcast weather and the sun set, people still wanted to slide down. After kids completed each event, they were awarded a letter, eventually spelling out "Canada Day" after completing nine events. This entitled them to a free freezie, as well as a complementary exclamation mark.

The Engineering Society had the most volunteers present of all of the other student societies helping, with about 40. Overall, the events were great successes, attracting a significant portion of the tens of thousands that visited the festivities at the Columbia Lake fields.

Kate Kelly ('07 Electrical) braved the cold and volunteered to be in the Dunk Tank.

Engineering Science Quest Summer Camp Underway

MIKE SELISKE
1B COMPUTER

Many of you have probably noticed the abundance of children in coloured shirts wandering around campus – about half of the Engineering students currently on campus are doing their first Spring academic term. So, you're probably thinking, "Who are these kids and what are they doing here?"

The answer is quite simple: it's the Engineering Science Quest summer camp (ESQ) run by the University of Waterloo each summer. Currently in its 16th year, the camp has grown from a staff of three to over 100 and is run through a joint venture of the Faculty of Science and the Faculty of Engineering. The aim of the camp is to provide a hands-on experience which encourages children to pursue science or engineering based courses in high school or beyond. It is not a regular summer camp because it promotes science and engineering as opposed to playing sports or other camp-type games. There are elements of normal camp activities at ESQ, but most events are centred around some sort of science or engineering theme. ESQ has probably even convinced some current Waterloo Engineering students to choose engineering as their career and seeing all of the eager young campers may bring back some sweet memories of the good old days of camp. As for everyone else who didn't attend ESQ, it probably brings back memories of the days when we actually had a summer.

There are seven different types of camps run throughout the summer that cater to kids from grades one through ten and are run for nine one-week experiences. The camps run during the day on campus, so you may notice random things occurring on your journey to class, and you might even relive some of your summer camp days overhearing some classic camp songs.

The camp for older kids includes some great events like web design, video editing, and Lego Mindstorms NXT robot building, while the younger ones get to enjoy the science of sports, spaceships, alternative energy, dinosaurs, and the future of science.

ESQ is hoping to have 2800 campers this summer and the organizers will have their hands full until the moment the last camp finishes up on August 31st.

UWAFT Wants You!

Continued Success Dependent on Your Involvement

DEVIN CASS
2N ELECTRICAL

Do you feel somewhat "out of place" in your class? Are you looking for something more in your academic life? Do you want to make a difference in the world around you? Do you want to get your hands dirty with real-life situations? Do you want to work on solving real-world problems? Do you want glory for your hard work?

If you answered yes to any of these questions, then UWAFT is for you! So your first question is, "What is UWAFT?" UWAFT is The University of Waterloo Alternative Fuels Team. We are a group of UW students (mostly Engineering) passionate about driving the future of mobility. We investigate alternative ways to power a vehicle. We have recently completed construction of a hydrogen fuel cell-powered Chevrolet Equinox. In the past, we have converted a Chevrolet Malibu to an ethanol-electric hybrid, and we have converted a Chevrolet Silverado to an ethanol-propane powered vehicle. This past June, we competed against 16 other Universities, all from the USA. This was part of a three-year competition called Challenge X. You might have seen us featured on the Discovery Channel; we were featured twice and will be again soon!

A new era of UWAFT is approaching. Many members have moved on to their respective careers. We need passionate and devoted individuals like you to carry on our tradition of victory and success!

If you are interested in UWAFT, please do not hesitate to contact me (dcass@engmail)! We need new team members to pass the torch to! Check out all our information at www.uwaft.com.

GAFF to be Laptop-Friendly Upon Reopening

RENOVATIONS

Continued from Page 1

The GAFF Lab has been out of service for a year due to the backlog of projects for the University and Plant Operations being backed up with projects as a result, according to Professor Douglas. It will be refurbished with fewer workstations, as the room is being divided, but with new furniture.

GAFF will feature long narrow tables, with workstations on each end and down the sides, allowing for plenty of space for people to set up their laptops. The tables will be equipped with wired connections to the Internet, alleviating the load on the wireless network system. "We're trying to make it a good area for people to work on projects, where a couple of people will bring their laptops and a couple will sit down at a workstation," Douglas said. It is also hoped that GAFF will be completed for the Fall term, but this is very much depending on the workload of the Plant Operations staff.

Also at the last Engineering Computing feedback session, the Wedge Lab (E2 1302B) was identified as next on the upgrade list, which Engineering Computing will hopefully attend to this year. "That may have to require some real downtime because we want to do some major renovations in there with the furniture," said the Associate Dean. No new designs for Wedge exist yet, but it will probably also feature more space for students with laptops. There is also a plan to extend that lab in the direction of the main E2 corridor, where is there is only "dead space" right now, increasing the amount of space and computers that the Lab can contain.

Wireless

There is talk about replacing the wireless access points with more powerful ones. This will mostly be handled by Information Systems and Technology (IST), as it is a University-wide project, but Engineering Computing will be "heavily involved".

UW-ACE

Professor Douglas was very interested in input about UW-ACE. Commenting on the reluctance of some professors to adopt ACE, he noted that the complexity of ACE, an issue for both students and professors, may discourage some professors from using ACE and that new faculty and TAs may be somewhat intimidated by it. To this end, the Centre for Teaching Excellence (formerly LT3) is holding training sessions to promote ACE's use. Feedback about its ease of use has been passed onto ANGEL Learning, the company behind ACE, but they seem to be unresponsive to these concerns.

Professor Douglas is also interested in establishing a dialogue with the Engineering Society so that student concerns about Engineering Computing can be addressed in a timely fashion, before small problems become large ones. He proposes the possibility of regular meetings with the EngSoc Executive or the possibility of an Engineering Computing directorship.

Renovations have closed the Multimedia Lab for the summer.

Fourth-Year MME Study Room MIA

Two-Week Renovation Becomes More Than Two-Month Struggle

KEVIN CEDRONE
4A MECHANICAL

I'm in fourth year with six academic terms down, and two to go. Here I am, near the top of the undergraduate Engineering ladder with IRS within striking distance. As a Frosh I heard rumours of a glorious lounge exclusively for fourth-year students. Far from that utopian paradise, this term there are more than 80 4A Mechs fighting for space in a windowless study room in the basement of E3, and an outdated private-use computer lab in E2. At the behest of my class and with a glint of journalistic enthusiasm I investigated the matter further.

My 4A schedule is made up of a mix of technical electives which leaves me with more gaps and breaks between classes than in years past. In order to effectively manage this, I need a place where I can work and study during off-lecture hours without going home. My Computer Fluid Dynamics (CFD) and Finite Element Methods (FEM) courses entail project-oriented work demanding specialized and computation-intensive software that is not well-suited to remote access. Many fourth-year projects entail detailed thermo-fluids or solid mechanics analyses which require powerful computing resources. Not every computer on campus is up to these tasks, and some of those that are have been committed to the Engineering Science Quest summer camp (ESQ). ESQ is a camp for young students to learn about engineering, science, and technology. I support ESQ and its summer-term appropriation of the Lever Lab, since they paid for the upgrades to that lab and only require it four months of the year. The fact remains, however, that the number of adequate and available computers is insufficient as a result.

Most, if not all, fourth-year classes have exclusive study room computer lab facilities. Department administration has recognized the necessity for fourth-year students to have a place to study and work on projects between classes. Fourth-years in Civil Engineering have a private computer lab and lounge in E2-1301. Their half of the reclaimed lab in E3 basement has windows. Chemical and Environmental Engineering fourth-years have DWE-1532, which features a temporarily obscured view of the CPH courtyard. Electrical and Computer Engineering fourth-years have the newly renovated E2-3353, while even their third-years get E2-3352. Where are Mechanical and Mechatronics Engineering students on that list?

Well, there is good news and bad news. The bad news is that we don't have a lounge. Speaking for my class, the open schedule of different technical electives has caused a loss of class cohesion. Normally classes are brought together with a fourth-year computer lab which doubles as a lounge. The good news is that we've all bonded in our bitterness at our lack of lounge space.

The story of why we don't have a computer lab starts with the Department of Mechanical and Mechatronics Engineering (MME) switching rooms with Civil Engineering earlier this year. MME's long term plan is to provide a new fourth-year computing lab and an adjacent lounge area in a large room with windows. The new lab could also be expanded in the future as the Department anticipates getting more physical space in 2010. To do this, the Department offered the larger part of its E3-1101 study room in the basement of E3 to the department of Civil Engineering in exchange for E3-3112, a room of almost equal size. MME kept the remaining part of E3-1101 without windows as extra lounge space for the fourth-year students. Since that switch, MME planned a renovation of E3-3112 as the new fourth-year study lounge and computer room. The renovation was set to take place between the Winter 2007 and Spring 2007 terms and provide an upgraded space including lockers, couches, desks, new HVAC, and 16 brand new computers.

Professor Pearl Sullivan and Professor Roydon Fraser of MME planned the renovation in advance, recognizing the importance of the fourth-year computer room and hoping to avoid delays.

The renovations fell behind schedule almost instantly. We all received e-mails telling us to expect a fourth-year room at the end of May, an estimate later corrected to the end of June, and then "possibly not for *your* fourth year" as Professor Sanjeev Bedi joked at one MME Student-Faculty Committee meeting.

To limit the effect that 80 or so Mechanical students would have on already reduced Engineering Computing resources in the interim, the MME Department reserved use of an 8-computer room in E2-2354. Unfortunately, these dated computers are not useful for the heavy number crunching we sometimes require. Fortunately the long computing delays gave me plenty of time to wonder how a two-week project could balloon to a two-month debacle.

I had immediate e-mail responses from Professor Sullivan and later Professor Fraser regarding the room renovations. Fraser said in his response that this is not his first experience with renovations delayed because of UW Plant Operations (Plant Ops). Plant Ops is the department responsible for the operations and maintenance of the University of Waterloo campus and facilities. Regarding the renovations to make the University of Waterloo Alternative Fuels Team (UWAFT) garage hydrogen-safe, Professor Fraser said, ". . .a two-month, maximum four-month project extended to nine months and required substantial active intervention by myself and [UWAFT] or it would have been much longer."

Professors Sullivan and Fraser advised me to contact Mike Herz, MME's Lab Director. I then met with Mr. Herz, who told me that, aside from the advanced preparation and specific timing, this room renovation is nothing out of the ordinary. At the time of the interview, it was one of approximately 20 open work orders with Plant Ops. This renovation fell behind due to unanticipated complications such as the discovery and removal of a roof vent containing asbestos, the wall-ceiling interface requiring unexpected sound proofing, the need for unanticipated wall repairs all while dealing with material delivery delays. Following carpet installation and desk assembly, students would still have to wait for network drops for the computers from IST in order for the room to be fully functional.

Instead of simply assigning blame to Plant Ops, I set out to determine the root cause of the delays. I contacted Daniel Parent, the Plant Ops Director of Design & Construction Services. In an e-mail, he explained, "There seems to be a variety of reasons why this project did not proceed as quickly as expected." He continued somewhat generically: "Most of this is similar to other projects where the project is dependent on timely client input and timely progress throughout the design process and construction. . . . This takes time and coordination with many parties involved." More interestingly, he finished by saying, "Plant Operations is doing what is possible with the resources available."

The windowless Mechanical study room in E3-1101B.

Knowing that the MME Department prepared this renovation well in advance, this seems to be anecdotal evidence suggesting that budgetary restrictions are responsible for the long delays. According to statistics available from UW's website, there has been a 38% increase in full-time equivalent (FTE) students since 1997 and only a 33% increase in Plant Ops funding. Even in the absence of comparative data for other universities, it seems unlikely that Plant Ops has been underfunded for a decade, and I must conclude that it has sufficient financial resources.

In pursuit of a definitive answer I contacted Dennis Huber, UW's Vice-President of Administration and Finance, who is in charge of Plant Ops' budget. He responded by saying, "Plant Operations is funded to operate and maintain UW's 6.5 million square feet of buildings and 1000 acres of grounds. . . . [That workload] is generally a function of the size of the campus (total area)." While the campus itself has not grown significantly, there are a considerable number of construction projects on campus, 363 processed by Plant Ops, in 2006-07. Mr. Huber explained one of the other challenges facing Plant Ops: "Design & Construction Services efforts are also a function of the size of the campus and heavily impacted by new construction activity (currently $250M in new construction underway)".

It is clear to me that Plant Ops has a tough job, but the question in my mind is why there isn't a consistent standard of excellence employed for all aspects of the University, from student academics to Plant Operations. Can you imagine letting a two-week assignment become a two-month project on a work term?

Mr. Huber concluded his e-mail by adding: "We have recently added a new position in Design & Construction Services so that the maintenance projects . . . can be managed separately from client requested work requests. This should improve the turnaround time for client initiated work requests."

Ironically, it seems Plant Ops is in the same boat as the fourth-years it has inconvenienced; working really hard, but not quite there yet. The fourth-year room is nearing completion and if it is completed in time for our 4B term next Winter, the "fourth-year" study room will not have been a complete misnomer.

4A Mechanical students working on the July project rush, in the interim Mechanical computer lab in E2-2354.

Flexible Electronics Close to Fruition

IEEE Summer Lecture Series

OM PATANGE
2B NANOTECHNOLOGY

Dr. Andrei Sazonov of the Department of Electrical and Computer Engineering and the Giga-to-Nano Centre presented an installment of the IEEE Summer Lecture Series on June 27th. Entitled "Introduction to Nanocrystalline Silicon Devices and Emerging Applications", the talk described how nanotechnology fits into the "Giga" world.

Nanocrystalline silicon (nSi) is silicon that is arranged in very small-ordered units within a larger matrix of disordered silicon. Dr. Sazonov specializes in understanding and optimizing thin-film nanocrystalline silicon structures. His goal is to produce materials for so called "non-Moorean" electronics.

The famous Moore's Law has led to transistors of nano-dimensions and thus a clear emergence of nanotechnology. Moore's Law states that the number of transistors on integrated circuits will double every two years. Non-Moorean electronics consist of devices such as displays, imagers, and solar cells. These all benefit from larger size, and so are not clear applications of nanotechnology.

However, as Dr. Sazonov explained, there is much potential for nanotechnology in such devices. A prominent example is flexible electronics, which require the use of materials like nSi. For instance, instead of using hard, brittle substrates to produce large display panels, rolls of flexible substrates can be used in so called "roll-to-roll" manufacturing. The rolls of substrate would be processed similar to how newspaper is printed. This would avoid the need to delicately stack the brittle substrates into processing chambers in an expensive, inefficient manner.

"Roll-to-roll manufacturing can really revolutionize the [industry]," Dr. Sazonov stated. Nanocrystalline silicon has the potential of being a material that is flexible while having comparable electronic properties to current silicon devices, thus enabling this revolution.

To impress the impact of flexible electronics on the audience, Dr. Sazonov described a slew of potential applications. Soldiers could carry "updatable" maps into the battlefield that they could roll into small bundles when not in use – essentially a rolled up touch screen.

Homes could be decorated with "light-emitting wall paper". This would be installed the same way as current wall paper (being flexible and robust), and would provide the benefits of a full-wall television. Clothing could be covered with solar cells. The power from these solar cells could power MP3 players and recharge cell phones.

Such fantastic applications require a thorough basis in science and technology. Dr. Sazonov finished the talk describing how and why nSi could potentially fuel the next electronic revolution.

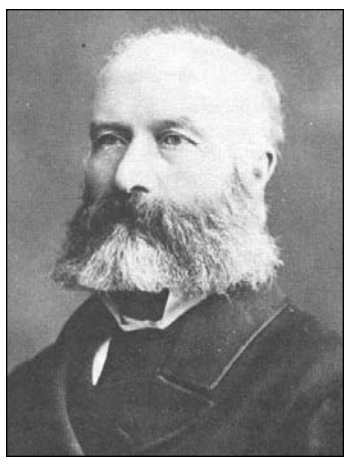
Various materials were considered to fit the requirements of thin-film transistors that would enable flexible electronics. The benefits and drawbacks of such contenders as amorphous silicon, organic materials, and others were shown in the lecture. The evidence clearly indicated nSi to be superior to the other materials.

For a further description of nanocrystalline silicon and other interesting materials visit Dr. Sazonov's homepage at http://www.ece.uwaterloo.ca/~asazonov/journal_papers.htm. Visit http://ieee.uwaterloo.ca for information about the IEEE Summer Lecture Series.

Founders of Engineering: Sir Sandford Fleming

JAY SHAH
1B MECHATRONICS

As you walk through the Engineering buildings you are bound to see the name Sir Sandford Fleming. It is likely you've been seeing it since first year. It is, after all, the name of an important foundation affiliated with Waterloo Engineering – the Sandford Fleming Foundation. So who was he, and why do we honour him to this day?



Sandford Fleming was born in 1827 in Scotland and moved to Canada in 1845. By 1851 he had already made a name for himself as the designer of the first Canadian postage stamp. During his early years in Canada, he was employed as a surveyor for various railway companies, rising in the ranks quickly to become the Chief Engineer of the Northern Railway of Canada. By 1858, Fleming was strongly advocating a coast-to-coast railway that would span what was at the time British North America.

Several years later, once the idea of the railway ripened, Fleming was appointed as the supervising engineer for the surveying of an intercontinental railway. After the Canadian Confederation in 1867, the government needed to build a rail link to the Pacific Ocean; Fleming, being one of the most experienced in railway surveying, was given the task. After this point he became the simultaneous supervisor of both the Intercontinental and Canadian Pacific Railways, a tremendously powerful and demanding position given the scale, intensity, and impact of both railway projects. Fleming was also a strong advocate of safety considerations in design and was well ahead of his time when proposing ideas such as professional development and conduct among engineers.

During his time as supervisor of Canada's two largest railway construction projects, Fleming saw a need for a single 24-hour clock for the entire world. He proposed this idea and promoted it heavily at major conferences all over the world. A variant of his proposed time system was adopted – what we know of today as Universal Time. By 1929 it was effectively being used among the major countries of the planet.

After he retired, he continued working towards improving Canadian infrastructure and technology. He strongly pushed towards the completion of a telegraph line that would connect all of the British Empire and improve global communication as a whole. Despite the fact that Fleming was not a politician, his involvement and promotion of technology had many profound political impacts. Many landmarks in Canadian and global history might not have been possible without him.

It is for all these accomplishments that we honour Sir Sandford Fleming to this day by naming the Sandford Fleming Foundation after him. The foundation provides support for various competitions, scholarships, awards, and maintains a strong connection with industry and the professional engineering community – to create an enriched academic environment.

How to Get a Job, Part 4

Co-op Ratings and How to Impress Your Employer

ANGUS MCQUARRIE
4A COMPUTER

It may not have escaped your attention that the first item of business when you apply for a co-op job is your co-op history – ratings you've received from previous employers. Like the rest of the application package, the weight given to it by employers varies. Some view this as the most important page in the entire package, as it is effectively testimony of your quality of work in a real work setting, something that is not necessarily expressed by marks or a resume. Others see it as an arbitrary distinction unworthy of merit. Regardless, it is front and centre, and it's worth investing your time during the term to ensure you're rated as high as possible, but also that you maintain a connection with your employer so that they ask you back for another term (whether you're interested or not), or potentially for a full-time job (more important in the fifth and sixth work terms).

Obviously the most important factor of all is to do your best when you're on a work term. Even if the job is boring or if you don't like the work, you're only there for four months, so make the best of it and put every effort into doing the greatest job you can. Getting along with your supervisor is just as important as this. Learning how to gauge people and how to get along with them is important here. Some employers are very friendly and want to treat co-op students on equal footing; others want you to know your place and treat them very formally and respectfully. If you don't adopt the appropriate attitude depending on your supervisor's behaviour, you'll end up in a clash that will put you on the wrong end of the beating stick when it comes time to do your evaluation.

Make sure your goals for the term are clear. Make sure that you sit down with your supervisor and review your progress on these goals on a regular basis if possible, but at the very least in the middle of the term. Your supervisor should realize that as an intern you're there to learn, and that a quick mid-term progress review is essential to your development. You should discuss your progress in achieving these goals at such feedback sections, as well as what you can do to improve your performance. A major mistake here would be to take anything they say personally. If you're dropping the ball, don't argue why you don't think you are. Understand what they perceive you to be, and correct your behaviour as appropriate. You are only there for four months; make the best of it. From the other side, don't relax your efforts just because your employer gives you praise at the halfway point – the term isn't over until it's over, so keep at it.

Many employers, especially large businesses, have a formal process they use for performing performance reviews on their employees, and you may be asked to go through this process. You should agree to this, but when reviewing your evaluation at the end of the term, make it clear that the two evaluations do not necessarily line up perfectly. Make no mistake: Getting a rating of "Good" (one step up from "Satisfactory") on a co-op evaluation is a bad thing, and wherever possible you should strive to get no less than "Excellent". Whatever evaluations you do get, and whenever performance feedback is given, it's essential that you take it professionally and act upon it. If you get a rating that leaves you unsatisfied, instead of blaming it on your supervisor, look at what your relationship with your supervisor was like, and how it got to be that way. Try to avoid going down the same path in the future.

Finally, regardless of how you feel about the company, try to get involved as much as possible. Everyone likes to feel that what they do matters and is valuable, and the employees that work for the company would likely like to hear from you that you feel the organization is contributing to society and that their role in it is valuable. Don't act like you're hot stuff just because you're from Waterloo. Get involved in company events, act like you would act if this were your real job, but endeavour to learn as much as you can at the same time.

If you're not getting the guidance you're looking for at a company, and even if you are, try to come up with things to do that can contribute to the company. You don't need to be asked to do this – part of going above and beyond your role is knowing how much room you've been given to maneuver, and to use that space to the fullest extent without overstepping your bounds.

I know that overall, this article is a little vague, but so much of being perceived as a good employee is image, and the desired image is different from organization to organization. You'll have to feel it out on your own, but the above tips should slightly help.

ESSCO AGM COVERAGE

Report from the ESSCO Annual General Meeting

SAMANTHA PINTO, ADAM SCHUBERT, AND MIKE SELISKE
SOCIETY "A" ESSCO AGM DELEGATES

The Engineering Student Societies Council of Ontartio (ESSCO) held its Annual General Meeting at the University of Toronto from June 21st through June 24th. Delegates from each of the thirteen Engineering schools in Ontario gathered to share ideas, network, and discuss student issues in Ontario. Waterloo sent a total of 9 delegates: five from Society "A" and four from Society "B", including the VP Externals and Presidents of each Society. The AGM was a forum for delegates to share their ideas and gain valuable thoughts on such issues as National Engineering Week, engineering student society events, and the engineering profession in Ontario.

Engineering Society Presidents Amanda Hoff and Ruth-Anne Vanderwater take in a Blue Jays game while attending the ESSCO AGM in Toronto.

The conference kicked off with the Waterloo delegates meeting in POETS for a scenic rush hour commute to Toronto. The first night was a social night where the delegates met new people and reunited with familiar faces from previous conferences. After a great night of socializing, we started the next morning with a bright and early 7 am wakeup call. The conference began with some talks by the ESSCO Executive, the U of T Associate Dean of Engineering, and a motivational leadership speaker. We met with Manoj Choudhary, the PEO Student Liaison Coordinator. Choudhary explained the PEO's new initiative whereby new graduates have their EIT registration and membership fees waived for the first year if they register within six months of graduation. We also had presentations from the Ontario Society of Professional Engineers and Research In Motion.

After a morning of presentations, delegates attended a variety of student-run workshops. The workshops were informal discussion sessions where suggestions and ideas were shared. Workshop topics covered included team building, engineering newspapers, outreach, and inclusive social events. We discussed ideas that we can use at Waterloo such as how to transition new Executive members (after this term's upcoming election) and ways we can expand and develop our Novelties Shop and merchandise.

The main purpose of the ESSCO AGM is to present reports, pass Constitutional and policy amendments, bid on future conferences, elect a new Executive, and mandate the new Executive.

The Executive is broken up into 4 positions: President, Vice-President Communications, Vice-President Finance, and Vice-President Services & Development. This year, half of the newly elected Executive comes from Waterloo! The new ESSCO Executive members for 2007-08 are:

- President: Ruth-Anne Vanderwater (Waterloo "A")
- VP Communications: Dan Taylor (Waterloo "B")
- VP S&D: Justin Kaufman (Ryerson)
- VP Finance: Michael Orr (McMaster)

We also voted on host schools for upcoming conferences. The winners are:

- PEO Student Conference (November 2007): University of Toronto
- First Year Integration Conference (January 2008): University of Windsor
- ESSCO AGM (June 2008): Ryerson University

After plenary, we finished the conference with a farewell BBQ, and students returned home, excited and energized about this upcoming year.

A Comparison of the PEO and OSPE

The Goals of Ontario's Provincial Engineering Organizations

RUTH-ANNE VANDERWATER
4A COMPUTER

Recently I attended Engineering Student Societies' Council of Ontario Annual General Meeting (ESSCO AGM) with several members of our Engineering Society to participate in and learn more about the provincial organization. The weekend was jam-packed with the selection of the new Executive, accountability of the outgoing Executive, informative sessions, and presentations from the Professional Engineers Ontario (PEO) and the Ontario Society of Professional Engineers (OSPE). Since most of the other topics will be covered in another article written by other Waterloo delegates from this conference, I'm going to talk about the differences between the PEO and OPSE, the services they provide to students, and the relationship between ESSCO and each of these organizations.

The PEO is the licensing and regulating body for professional engineers in Ontario. It is essentially analogous for engineers to The College of Physicians and Surgeons for doctors and the Law Society of Upper Canada for lawyers. The PEO licenses and disciplines engineers and companies employing engineers. They protect the safety of the public by ensuring that all professional engineers are qualified for licensing. The PEO also has the following mandate:

1. Establish, maintain, and develop standards of knowledge and skill.
2. Establish, maintain, and develop standards of qualification and standards of practice for the practice of professional engineering.
3. Establish, maintain, and develop standards of professional ethics.
4. Promote public awareness of the role of PEO.

The PEO has two programs of interest to students. First, they have a student membership program (SMP). This is an effort between the PEO and ESSCO to build a stronger and more permanent relationship with the profession's future members (that means you). This membership is currently free and gives you access to information about what is going on with the PEO. In particular, the membership provides information about your future career in the profession, and a customized student website with postings about engineering news, presentations, surveys, and issues.

The second program of interest is the Engineering Intern Training (EIT) program. This program is for recent graduates of an accredited Engineering program. One of the requirements of licensing is attaining four years of verifiable engineering experience. The program guides members through the accreditation progress by providing an annual review of work experience to give feedback on whether or not the EIT is on track for obtaining the work experience required for P. Eng licensing. The motivation behind the EIT program is to smoothen the process of becoming a P. Eng.

The relationship between the PEO and ESSCO has been tightening over the last year. The PEO meets with the ESSCO Executive twice every year (once in August, and then again the following June). At this first meeting they outline goals for the upcoming year for how to better reach students in Ontario to promote the PEO student programs. There is also a conference run jointly between the two organizations late in the Fall term called the PEO Student Conference. Waterloo had representation at this conference last year. This conference is all about the PEO, meeting people in industry, and networking. The date of the next PEO Student Conference is yet to be decided but is expected to be some time at the end of this Fall term, hosted by the University of Toronto.

The PEO and ESSCO have also been working on over the last year is ensuring the VP Externals of each member school's engineering society can attend their local PEO Chapter meetings. Waterloo has had the pleasure of being able to attend these meetings for over a year now. A few other schools across Ontario have also had this opportunity. However, not every engineering society in Ontario has been invited to their local Chapter meetings. It is the goal of the new ESSCO Executive to work with the PEO to have this option available to all student engineering societies in Ontario.

The Ontario Society of Professional Engineers (OSPE) is the voice of the engineering profession in Ontario. OSPE has three main components. The first component advances the professional and economic interests of their members by advocating with governments. They have more of a focus on the provincial government than the federal government. OSPE is currently focusing on these three main issues:

1. Raising awareness of OSPE, their mandate, and their members.
2. Offering constructive input into legislation and regulations that affect their members.
3. Pursuing demand-related legislation that can boost demand for engineering services across Ontario.

The idea behind the advocacy component of OSPE is to have the voice of engineers heard at the policy making table. OSPE works on getting policy makers to work with engineers who can help provide input and expertise while the laws and regulations are being drafted.

The second component of OSPE offers services to its members. Some of the services that are offered to members include discounts on home and car insurance, car rentals, gas, eye glasses, legal services, entertainment venues, and hotels. The third component of OSPE provides opportunities for ongoing professional development including a career services center and networking events.

Currently, OSPE has several services available to students, including discounts on many of the same items as a regular membership. Students are also able to use OSPE's career services center to find a summer or work term job. OSPE is currently working with ESSCO to develop valuable services to their student members.

Over the past few months a relationship between OSPE and ESSCO has begun to blossom. The two organizations have been in contact more often and will be meeting in the upcoming month to discuss ways to work together over the next year. There is even a chance that OSPE will be attending the PEO Student Conference this year.

Overall, the relationships between ESSCO and the two provincial engineering organizations have been improving over the last year and will continue to do so in the upcoming year. It is the goal of the newly elected ESSCO Executive to bring these organizations to all of the engineering societies in Ontario and to expose more students to the opportunities provided by these organizations. One particular initiative that is in the works is advertising and promoting these organizations during Orientation Week. However, the implementation details of something like this are still undetermined. The PEO, OPSE, and ESSCO are working together on this initiative.

ENGINEERING SOCIETY EXECUTIVE CANDIDATES

Presidential Candidate

TYLER GALE
3A GEOLOGICAL

Summarizing my campaign in a few sentences:

Far too often politicians run campaigns and come up with an enormous pile of crap about how many great things they will do if elected. My platform revolves around not doing this – it revolves around the concept of no bull. Here's what no bull means to me:

• Doing what you say you are going to do, and doing it right (and establishing accountability so everyone else will too)

• Establishing achievable solutions to some of the problems that have held the Engineering Society back for far too long

These are the concepts on which my priorities as a candidate for President are based (more details below). I feel like over the last 16 months, as EngSoc's Vice-President Education, I have demonstrated that my approach has truly been governed by these concepts. I think the person ultimately crafting the Society's image (both internally and externally) needs to be driven by these concepts. This is why I am running in another election.

So what am I going to do anyway?

The Engineering Society does astoundingly well to serve and represent the student body relative to other student organizations. That being said, EngSoc still faces some deeply-rooted challenges. Continuing with the no bull concept, what I would set out to do as President would be to improve the way we deal with some of these challenges. There are three particular challenges with achievable improvements which come to my mind.

1) *Continuity.* As a student society we cycle through a set of event and service directors every four months, and a set of managing directors every 16 months. This problem is at the root of more apparent problems such as providing useful services. Currently we do not have an effective way of documenting how things are done for new EngSoc Directors and Executive members, but we do have the resources to set this up – web space. Currently EngSoc has a huge website and a wiki dedicated to it, but these resources are not functional enough to serve as a continuity database. As President I will be in a position to manage the resolution of this situation, and I am proposing the goal of having this project complete by mid-way through the next Executive term (upon the completion of our first on-campus term, Winter 2008).

2) *Marketing.* As it stands EngSoc does not effectively reach the group of students that are not actively involved in the Society's activities. Unfortunately this group is rather large. I propose a two-part solution to this problem. First, I return to the website situation. Websites make an effective marketing tool when designed correctly and when used by those looking to spread the word. If the website was consistently linked to class and other university websites, and contained information that was up to date and accessible, it would probably be used a lot more frequently. Second, some thorough research needs to be done to determine how to effectively reach the students. Are students reading the posters? Do students get messages through their class reps? Are students simply not interested in the events EngSoc runs? Whatever the case may be, we need to determine what we are doing wrong, document what we are doing wrong, and act accordingly.

3) *Accountability.* You are about to vote in an election that has no real validity. I say this because the people who are elected as EngSoc Exec have no way of being held accountable for what they claim they will do during their campaigns. As such, I would like to propose a model to establish accountability by initiating accountability discussion at one Society meeting every term. At this time, each Executive member presents an update regarding their project progress, and the Society has the opportunity to ask questions and critique. This is already done at province- and nation-wide student organizations.

To wrap things up I would like to say a few words about balance. There are many forms of balance for which EngSoc has not found a happy medium, and probably never will. This includes the balance between fun and accomplishment at meetings, between tradition and a solid turnout rate to events (e.g., Scavenger Hunt), between an Engineering Faculty comfortable with its student society's activities and solidarity, and many more. What I would like to stress is that there is no long term solution to these problems. Instead, there is a requirement to constantly have Society leaders that are aware of the presence of these challenges, and who are constantly driven to try to come to the most preferable compromise. It goes without saying that I am one of these people.

Vote!

July 19th
8:30am-4:30pm
CPH Foyer

VP Education Candidate

JEFFREY LIPNICKY
3A MECHANICAL

To begin, I am in 3A Mechanical Engineering and am seeking your vote as Vice-President Education in the upcoming Engineering Society elections. I want to work with students to help ensure that Waterloo Engineering continues to be the premier engineering school in Canada – and one day the world. I will work to serve you, the students, by supporting the initiatives and activities of my directors, developing and maintaining the services provided to help your education (such as the Exam Bank), and representing you on academic issues.

We are all here to get one of the finest educations available. As students, we recognize what we want to learn and have ideas of how to best absorb the information. As VPEd, I will make sure that students are represented at the department, faculty, university, provincial, and national levels. I will help to uphold Waterloo's strong tradition of not being "another U of T."

In recent years, an alarming trend has developed in Waterloo Engineering – failure. Approximately 30% of first-year students are not promoted to second year on their first attempt. This trend is very disheartening and requires immediate attention. I will work diligently with the Faculty personnel to develop and implement strategies to curb this movement.

I will also bring student concerns to CECS. I will work with them to improve the Co-op system so that it better serves the students. CECS is meant to serve the student body, and as such, I will ensure Engineering students get the service and support that they deserve. I will also ensure that students' ideas are incorporated and their concerns addressed in the new Co-op system.

Love it, hate it, or even if you just don't care, PDEng is here to stay. I will work wholeheartedly with PDEng staff and the Faculty personnel to develop a rewarding and meaningful program that will compliment our engineering education. I will do my best to ensure students' comments and suggestions are not only heard but implemented into the program.

Finally, I will work with the other Executive members and Engineering students to promote EngSoc's image in the Faculty, campus, and community. I will do whatever I can to attract as many Engineering students to EngSoc and have them become active members.

If you choose me for VP-Ed, you will not be disappointed, because I believe there are only two ways to do things: the right way and your way. Luckily for me, they coincide with one another.

If you have any questions for me, please feel free to stop me in the hall or send me an e-mail (jmlipnic@engmail). Also, details of my campaign are found online at: http://www.eng.uwaterloo.ca/~jmlipnic/engsoc/.

VP Internal Candidate

LEE ANNE BELCOURT
2B MECHANICAL

Labs, quizzes, exams, assignments. I'm sure we all question how we survive at some point or another. For me, one of the answers to that question is attending Engineering Society events, from tournaments like Ultimate Frisbee, to checking out the term's Eng Play. Yet, for some reason, a large portion of the students I've talked to seem to hold a negative impression of EngSoc, even though it runs great events like Tal Eng (the Engineering talent show - July 19th) and Genius Bowl (everyone's favourite trivia competition - July 12th).

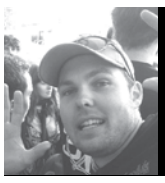
That being said, there are many weeks where time is limited, so I plan to mix up certain events to focus on events that you guys feel are worth your time. The events coordinated by the VP Internal generally take place within the school itself and give us the chance to cure night terrors about triple integrals and job rankings. I've held several directorships over the past two years including Shadow Day, Genius Bowl, Eng Play, Year Spirit, and Novelties. By combining my experience with your great ideas, I hope to develop a more positive impression of EngSoc events. For instance, the Multicultural directorship could be expanded in the interest of students who hope to travel by developing a small food festival where students could taste different types of food and learn the customs of other cultures.

Since a little competition can be a great way to relax, expanding sports tournaments or arts events to include other faculties will open doors to meeting other students and increase the size of the event in this manner as well. The other primary reason students don't seem to get involved is because they often don't know what's happening. Whether by holding a workshop to help classes set up a website or tacking up whiteboards all over the hallways, I am going to get the word out about events and services offered by the Engineering Society. For instance, did you know you could send a fax at the Orifice (CPH 1327) or book POETS to hold events or meetings?

Directorships are also a great way to have fun while developing interpersonal skills and life experience in a comfortable environment. Even if you are a little bit concerned about taking on a directorship, I will help you to put your ideas into action even though time is an issue. Helping you get the resources you need will be at the top of my list. Since there is also a higher workload as the end of term approaches, I plan to move some of the events to earlier in the term when it is more likely that students will be able to join. As VP Internal, my goal will be to make life both easier and more fun for the wide variety of backgrounds represented at our school. I look forward to meeting everyone over the next couple of weeks and continuing to learn about your interests and concerns.

ENGINEERING SOCIETY EXECUTIVE CANDIDATES

VP External Candidates



DAVE HALFORD
2B MECHANICAL

Hello everyone, for those of you who don't know me already, my name is Dave Halford and I would like the opportunity to represent you, the Engineering student body, as your Vice-President External. I am currently in my 2B term of Mechanical Engineering and I have been involved with the Engineering Society since 1A when I was a class rep. Since that time I have held such directorships as Charities Director, TalEng Director, Orifice Director, and Women in Engineering Director as well as having been a Frosh Leader. Through these directorships I have learned a lot about teamwork, organization, how the Engineering Society operates, and the responsibilities of the various Executive positions. I have also attended such conferences as the First Year Integration Conference (FYIC) and Engineering Students Societies' Council of Ontario (ESSCO) Annual General Meeting where I have become familiar with Engineering student issues at the provincial level.

As VPX one of my main responsibilities would be to represent the Engineering Society to various organizations and groups outside of the university. These responsibilities include attending meetings with our local PEO chapter as well as leading delegations to student conferences at both the provincial and national levels. I feel that I would do a great job at representing you at these venues because I am very approachable and my goal is to make your voice heard. I would really like people to come up to me and voice any opinions or ideas that you may have so that I can take them forward for you and express them at the appropriate venue. I also see these meetings and conferences as a great place to gather ideas from other universities located across the province and around the country, and bring them back to Waterloo to improve student life.

One of my goals as VPX would be to help organize a large charity event to be run during an A-Soc term. B-Soc is already known for events that raise big money, such as the last two head shaving events, and I feel that it's time that A-Soc should have the same notoriety. In order to do this I would like to recruit a group of enthusiastic Charities Directors and work with them closely in order to plan such an event.

My other big goal as VPX would be to get as many people as possible involved with EngSoc and the various other opportunities available at the provincial and national levels. Although I really like being involved within the school, I have found that there are a lot of opportunities outside of the University for Engineering students. I would like to help make these opportunities available to everyone, through more effective advertising, so that it's not just the people who attend EngSoc meetings who know about them and get the opportunity to participate.

I hope to meet as many of you as I can during the upcoming campaign – please don't hesitate to come up to me to give me your questions and comments, or just to say hello. I hope for your support.

SAMANTHA PINTO
2B CIVIL

Hi A-Soc! My name is Samantha Pinto, I am in 2B Civil and I want to be your next VP External!

I am energetic, passionate, hardworking, and really dedicated to the Engineering Society. Being your VPX is something that I have wanted to do since I was in first year, and I have been working hard to prepare myself for this job. I have attended several conferences including CFES Congress 2006, ESSCO AGM 2006, PEO Student Conference, CFES Congress 2007, and ESSCO AGM 2007.

I have established valuable working relationships with members of the Canadian Federation of Engineering Students (CFES), the Engineering Students Societies' Council of Ontario (ESSCO), and Professional Engineers Ontario (PEO). I know what to expect at conferences, I know the goals of CFES and ESSCO, and I know the issues that Engineering students face on a national and provincial level. As your VPX, I will ensure that the needs of Waterloo Engineering students are being represented to the CFES, ESSCO, and PEO.

In addition to attending conferences, I have held several large directorships which fall under the VPX portfolio, including Charities, Women in Engineering (WIE), and Canada Day. I have helped organize events such as Trick-or-Eat, a Fundraiser for Sick Kids Hospital, WIE Movie night, and Canada Day 2007. I have worked with a very talented group of people and gained valuable organizational and leadership skills. I feel that the knowledge and experience I gained from these directorships will help me be really supportive and helpful to future directors.

One of my goals as VPX is to improve the relationships between EngSoc and Engineering teams and clubs by creating a Teams & Clubs Directorship. This would allow Engineering teams and clubs to apply for an EngSoc budget and use director services with the goal of increasing and diversifying student participation in teams and clubs. As VPX, I would like to liaise between teams, clubs and the Engineering Society, so that more people are aware of the activities being held, and how to participate. Waterloo Engineering prides itself on the innovation and ability of its students; I would like to see more students showcasing their talent by being more actively involved in our teams and clubs.

Another goal of mine is to encourage friendly relationships with other Ontario Engineering schools. As VPX, I would like to facilitate multi-school social events and I believe it would be really effective if Waterloo collaborated with other Engineering schools for charity drives and social issue campaigns.

As VPX, I would encourage the PEO to visit Waterloo and answer questions about the value of the P.Eng licence in Ontario. I believe it would be valuable for students to meet Professional Engineers and discuss the pros and cons of getting a licence, as well as the requirements for obtaining a P.Eng.

I would be happy to answer any questions and hear your ideas! Feel free to say hi or e-mail me (stpinto@engmail).

On July 19, vote Samantha Pinto as your next VPX!

VP Finance Candidates

ADAM MELNIK
3A GEOLOGICAL

With thousands of engineers donning 'Glad to be a Waterloo Grad' stickers after convocation, it is interesting to speculate how many are venturing to the next stages of life debt-free. How well were these debt-free grads able to balance work and play?

Greetings, I'm Adam Melnik. I'm currently studying 3A Geological Engineering. I've probably seen many of you at Engineering Society Athletics events and look forward to thrusting a placard up beside you at the next riveting EngSoc meeting! I'm dedicated, hard working, and thrive in teamwork environments.

Why should I be elected VP Finance? I've owned and operated a commercial landscaping business, where I contracted students, marketed, and provided service to many satisfied customers. Exposure to business ethics and financial software has helped me develop the skills required to excel in ensuring the balance of the Engineering Society is always above the red!

My goals are simple. I will maintain the fiscal responsibility of past executives, strengthen continuity by working directly with the new EngSoc website designers, and increase transparency by making budget and donation balances available online.

Feel free to contact me at a2melnik@engmail.uwaterloo with questions, concerns, and comments regarding my campaign.

I look forward to helping you maintain your balance between work and play.

MARK HAZLETT
2B CHEMICAL

Greetings and salutations to you all. My name is Mark Hazlett, and I am running for the exciting and wonderful Engineering Society Executive position of VP Finance this term.

I've been talking to a number of past and present VPFs these last few weeks, and they all keep telling me that so long as I can perform rudimentary arithmetic, I'll be perfect for the job. I know that these statements are somewhat understating the importance and skill requirements of this position, but I feel that, in addition to these basic arithmetic skills, I possess some things that are much more important for the Engineering Society, and those are enthusiasm for the Society and all it does, the experience in the Society, and, of course, the intense pride to be a Waterloo engineer that I hope all of you here feel inside your hearts.

I have been involved in the Engineering Society since my starting here three years ago, and have been in many directorships, with many diverse experiences throughout. I believe that these various experiences give me a good sense of the "Big Picture" of EngSoc, so to speak, and feel I have a good grasp of how it all works, which will help when budget time comes along.

A short briefing of my plans for the position are as follows: I hope to work closely with my off-stream counterpart, Chris Jamieson, to finish work on the development of the POS system for the Novelties Shop – an idea that will hopefully expand to a website for Novelties, where students, both past or present, can check which items are in stock and order the wonderful items online. This will solve the problem of seemingly arbitrary Novelties hours, and never knowing what they actually have until you get there.

Anyway, I feel as though I'm getting fairly long winded here, so I'll conclude by reasserting that I feel I would make the best possible VPF that you could elect this term, and that you should all come on out and vote on the 19th in the Engineering Society Executive elections.

If anyone has any further questions, comments, or is just bored and would like some form of entertainment, please feel free to e-mail me at mdhazlet@engmail.

ENGINEERING SOCIETY EXECUTIVE REPORTS

Presidential Report

RUTH-ANNE VANDERWATER
PRESIDENT

Well you know the term is in full swing when the white board outside of the Orifice has something for every day in the next two weeks. EngSoc is keeping everyone busy over the upcoming weeks with Genius Bowl, election campaigns, EngPlay, Joint Council, and Student Life 101 to name a few.

And while we're on the topic, the Engineering Society Joint Council meeting will be on Saturday July 14 at 1:00 in CPH 3385. All class reps are expected to attend this meeting. We'll be discussing important issues such as Constitutional amendments, our relationship with EWB, and possible changes to how often some events are run. If you are a class rep and cannot be at Joint Council, it is very important that you e-mail me as soon as possible. We will arrange a proxy for you so your voice will still be heard at Joint Council.

Also, Student Life 101 is coming up on Saturday July 21. The campus student societies will be hosting a BBQ. All of the profits from this BBQ will be divided up between the societies proportionally. Last year EngSoc had over 60% of the volunteers and we got over $500 of the profits. Let's try to keep the participation up this year. If you are interested in volunteering a couple of hours of your time, please e-mail me.

There are also a few other items I have written about in this issue of *The Iron Warrior*. I felt these issues were important enough to warrant a separate article instead of including them in my Exec report (which is typically rather long anyway). Please take some time to read my article about why The Tool was unable to attend the Canada Day festivities and my article about some important information that was shared at the ESSCO AGM.

If you ever have any questions, comments, concerns or otherwise, please drop me a line at asoc_prez@engmail.uwaterloo.ca.

VPI Report

KIRI NEUFEGLISE
VP INTERNAL

With the term slowly drawing to a close, we're almost all free to the exciting Co-op world. But don't count EngSoc out yet! We have a *ton* of exciting events coming up in the next couple weeks, and as usual, here's the list:

- Enginuity #4: July 12
- Genius Bowl: July 12 (6pm, DC 1351)
- EngPlay: July 13-14
- Joint Council Meeting: July 14 (1pm, CPH 3385)
- TalEng: July 19
- Indoor Soccer Tournament: July 22
- Enginuity Final Challenge: July 25
- EOT: July 27 (9pm, POETS)

So these next couple weeks until finals is going to be busy as ever, at least from the internal point of view, so be sure to come on out and have a good time. I'd also like to thank everyone who came out to the POETS Pantastic Pig Pyre (P**4) on July 6 and everyone who helped me set up, take down, and run the event – it was all very, very much appreciated. It was a great time and the pig was delicious, so hopefully this is a tradition that will be carried on since I know I definitely want more.

VPX Report

ANGUS MCQUARRIE
VP EXTERNAL

So I could tell you all about the ESSCO AGM we just had, but I'm going to leave it to the various delegates who went that faithful weekend to say it for me in their article. Many delights were had, and you'll hear about it from them. One key announcement I would like to make, though, is the election of your new Provincial Executive. ESSCO has four Executive positions: President, VP Communications, VP Services and Development, and VP Finance. The incumbent Executive have now finished their terms, and a new Executive take over until next year's AGM in June 2008. Of these four positions, two of them are now held by Waterloo students! Dan Taylor (2010 Computer) from B-Soc now holds office as VP Communcations, and our very own outgoing Engineering Society "A" President, Ruth-Anne Vanderwater, will be moving up a tier in government to act as President of the Engineers Student Societies Council of Ontario. Be sure to congratulate them both.

Canada Day festivities were under taken what at time of print will be two weekends ago, and were very successful, despite the absence of The Tool. Matt Hunt and Samantha Pinto did a phenomenal job of organizing it, so kudos to them, and thank you greatly to all the volunteers who came out and made it such a success. As promised, I spent several hours freezing cold and wet as I was dunked in a tank full of water straight from the fire hose every 30 seconds by ruthless children whose parents clearly did not teach them about compassion. I hope you're all happy.

The A-Soc Waterloo Engineering Competition occurred on Saturday (July 7), and Rene Marchand did a great job of it. If you're interested in competing but did not have the opportunity to do so last weekend, another competition will be held in the Fall on B-Soc. Also, Innovative Design competitions will be held in early January, so be sure to get those Fourth Year Design Projects submitted for that.

Finally, more volunteers are almost certainly still needed for Student Life 101, which is coming up at the end of the month. If you're interested, please contact the appropriate directors on the EngSoc website under Directorships.

VPEd Report

TYLER GALE
VP EDUCATION

The last couple of weeks have been superbusy. Debt Load Surveys and Course Critiques have been making the rounds. My major projects of the last 16 months are drawing to a close.

Debt Load Surveys are jointly administered by the Office of the Dean of Engineering and the Engineering Society, to keep track of the debt load situation of undergraduate students. These surveys are distributed and collected every Winter and Spring term (once every year for each of A-Soc and B-Soc). The data will be processed and printed in the next issue of *The Iron Warrior* courtesy of the Dean's Office.

Course Critiques are also jointly administered by the Dean's Office and EngSoc. Professors will be distributing these to classes over the next couple of weeks. They are being collected in the Engineering Society office (CPH 1327), and following the collection period there will be a reading party for the Course Critiques. More on this later.

Over the course of my term as Vice-President Education, there are two major projects that I have picked up. The first is a review and revamp of EngSoc's academic services. This service review ended in the implementation of a few simple changes:

1) Training from CECS for Resume Critiques directors.

2) Implementing quality indicators for the online services.

3) Making submissions to the online services (Exam Bank, Work Term Reports) more accessible.

So why do you care about these changes? To put things into perspective, every Fall term there is a turnout of approximately 200 first-year students to Résumé Critiques. Over the last year, 51 exams and 10 Work Term Reports have been collected. This creates a sufficient base for these services to be useful (after a period of very poor submission rates), and as long as submissions continue every term, this base will continue to grow. The hope is that these small improvements will benefit these services for the long run, but in the end only time will tell.

The second project has involved collecting and relaying student concerns with regards to the PDEng program. A lot of progress is going to be made over the next two weeks for this situation, and for this reason I will hold off until the next issue of *The Iron Warrior* to go in depth.

WEEF Report

BRANDON DEHART
WEEF DIRECTOR

This is a very busy time for WEEF and that means that there is money that will be given out ASAP. The presentations meeting happened last week and went quite well, with improvements to undergraduate labs requesting just over $65,000 and the student teams asking for more than $47,000.

By the time of publication, the funding council meeting will have met and come to a fair decision about how to allocate funding this term. The Board of Directors (which is in need of another two A-Soc student representatives; e-mail me if you are interested) will be looking at the decision soon and the results will be available in the July 25 issue of *The Iron Warrior*.

In other, possibly less important but more exciting news for some, the patches and T-shirts are on their way from the supplier and should be available in the EngSoc Novelties Shop (CPH 1337A) before the next issue comes out! That means you can finally show your support for WEEF in two of the best ways we engineers know how: words on shirts and logos on knapsacks! Also, the outdated and almost embarrassing display for WEEF that is in CPH will be improved and the thank you plaques that are filling the WEEF office will be put on display there.

If anyone has any questions for me or wants to see something new or different from WEEF, just send me an e-mail to weef@engmail. That's all folks.

VPF Report

TODD RADIGAN
VP FINANCE

Greetings from the land of money! As you may remember, donations took place at the last EngSoc meeting. This term $2000 was donated by EngSoc to various groups and teams. The specific breakdown can be found in the chart below. In other news, as much as we all hate to admit, the term is close to being over. We may not have much time left this term, but there are still lots of events going on. Make sure to come out to as many events as you can to get your $14 dollars' worth! There's still time!

I would like to take this opportunity to add in a shameless plug for the EngSoc elections. They're going on right now, and we have two exciting races. Make sure to come out to the debate on July 12th and most importantly come out to vote on July 19th in the CPH foyer.

My vacation in the land of money is going well. The weather is nice, the beaches are beautiful, and we get to stay up all night telling ghost stories. I will see you soon, but for now I've got to go. The swimsuit competition starts in 20 minutes and I'm going to win this time!

Group	Requested	Donated
UW Robotics Team	$600.00	$300.00
Engineers Without Borders	$540.00	$270.00
Canadian Engineering Competition	$500.00	$450.00
Concrete Toboggan	$1,020.00	$250.00
Waterloo Space Society	$270.00	$170.00
GradComm 08	$500.00	$260.00
Eng FOC	$500.00	$300.00
Total	**$3,930.00**	**$2,000.00**

From The Iron Archives: The Story of the Quality of Maintenance Education Fund

The Student-Run Education Fund That Was Not to Be

BRANDON DEHART
3A MECHATRONICS

Have you ever wondered about what Engineering students were worried about and what kind of issues they faced 25 years ago? Have you ever thought that if only WEEF had been started earlier than the '90s, that it could be even more endowed than it already is and be contributing more to your education? Have you ever imagined what the effect of past generations of Waterloo Engineers may have had on the current state of your education? Well-buried in the depths of the catacombs of *The Iron Warrior*, there are stories of something called the Quality of Engineering Maintenance Fund (QEMF) and why it came about, which may answer some of these questions.

In 1982, there were many issues facing the Faculty of Engineering, especially from the financial side. The incoming classes (as well as most of the existing classes) were facing many changes including fewer professors available to teach, larger class sizes almost across the board, and a possible tuition increase of 12 to 32%! When compared to the moderate 4 to 8% hike we saw in the last year that has threatened many a dream of a car or vacation, this threat is put into stark relief. In addition to this, the government of the time in Canada was far into the red side of the ledgers leading to cuts throughout their infrastructure including education. To put a final nail in the coffin, even corporations were leery about investing in the University as they did not see the benefits of the education until many years later.

The President of Engineering Society "B" at the time was Mark Liddy, who helped spearhead a campaign during the Spring 1982 term for a student-based fund that would "try to show that the quality of education is so bad that [the students] are voluntarily increasing their tuition so they have at least some control" of where the money is being spent. This was brought about by a number of reasons, with the main one being that the funding for the Faculty was decreasing, which along with a lack of replacement of the aging lab equipment was leading to a high student-to-professor ratio and less teaching assistants able to help the students learn their material. The discussion was the result of a meeting of the Engineering Society "A" Executive held the previous term, which concluded that a joint referendum on the issue be held, coming after Council had tabled a motion to establish such a fund.

According to an article in the May 27, 1982 issue of *The Iron Warrior*, $2 million was needed to buy new equipment solely to keep the University's labs up to date. In addition, more scholarships and URAs were desired to increase the graduate pool for TAs and money for capital projects in order to add more space to the building at hand was needed.


Iron Warrior Thursday May 27, 1982

IRON WARRIOR

A FORUM FOR ENGINEERING CONCEPTS

STUDENTS CREATE QEMF

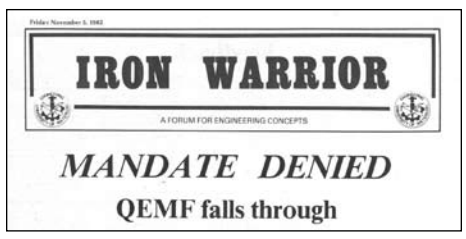
Fee Used To Maintain Quality of Engineering Program

In response to these needs, the Engineering Society came up with the idea for the Quality of Engineering Maintenance Fund, which would be built on a *mandatory* $50/term contribution from every student returning from a co-op term (to lessen the financial burden), subject to increase with the Consumer Price Index. That would make a mandatory fee in 2007 of just over $110. This fund was to be governed by students, along with some administrative members to help with financial details, and would have been answerable to EngSoc. The QEMF was only hoped to need to exist until 1985, when it was assumed that funds would increase and that the school would not need the students to personally assist in their own education financially. Based on the projections of numbers of students and how the fund would be organized, this was to lead to an influx into Engineering of around $200,000 a year in contributions. However, since this was not an endowment-based fund, none of the money from one year would carry over to the next and continue supporting the school in the future.

In the same issue of *The Iron Warrior*, there was a predecessor to Point-Counterpoint labeled simply as Pro-Con on the subject of the QEMF, what it was, why it was there, and who supported which side of the debate (and we're Engineering students: There is always a debate). On the Con side were a number of lower-year students who felt that although there was something that needed to be done, the QEMF would not be able to give enough support in order to actually have an effect on the education levels being experienced. They also thought that the government should be paying for any kind of increase in tuition that was only going to maintain a level the University once enjoyed on their dime. Finally, a number of the Con supporters said that the students spearheading the campaign were all seniors that wouldn't ever have to pay into the fund and were arguing against it on that basis.

On the Pro side, along with the EngSoc Executive were a few notable people in the history of Engineering. According to Wallace McLaughlin, the Dean of Engineering at the time, "A fund of this type could mean the difference between education and training," which I will interpret as someone becoming an engineer instead of an engineering technician - a designer instead of an assembler, if you will. Dean McLaughlin also said that the funds would be needed one way or another and the EngSoc of the time all agreed that it would be better if the students actually have a say in where the money is going. The President of the University of Waterloo at the time (and former Dean of Engineering) was Douglas Wright, a prominent name in UW history, after whom Engineering I building was renamed. "[I am] impressed with the Engineering Society's initiative and can see only positive results coming from QEMF," Wright said.

So with all of this support and the few objections, why don't we have a $110+ mandatory fee added to our tuition every term we return from co-op?


IRON WARRIOR

A FORUM FOR ENGINEERING CONCEPTS

MANDATE DENIED

QEMF falls through

In order to make sure that the majority of the student body was for the idea of a mandatory fee, the stakes were set pretty high: Each stream of Engineering needed to have at least a 50% turnout, and of those greater than a 2/3 positive majority would be required in order for the QEMF to go forward. The outcome looked rosy after the Spring vote by Society "B", with a 78% turnout and 81% in favour of adding the fee to the tuition. When the Fall term came, however, the results were not quite as good for the future of the QEMF: A 63% turnout garnered only 55% in favour. While disappointed by the lack of support for the fund, the new Dean of Engineering, Bill Lennox, himself a former Waterloo Engineering alumnus, as well as Mark Liddy and the on-stream EngSoc President, Jeff Cox, were encouraged by the high voter turnout, which they thought showed that the students cared quite a bit about the quality of their own education. The failure of the second stream of EngSoc to support the fund made front page news in the November 5, 1982 issue of *The Iron Warrior* as well as being the subject of

See REFERENDUM on Page 14

Bomber Patio to be Replaced by 6 Metre Hole

CONSTRUCTION

Continued from Page 1

with a hole five to six metres deep, below the storm drain. Once the tunnel is built, the hole will be filled back in, and the patio should be available for use at the beginning of the Spring 2008 term. The schedule was planned this way to minimize the disturbance to student life and make sure that patio season at the on-campus pub was not interrupted.

Aside from the tunnel extension, other preparatory work will be done at the future site of the building atop the B2 green, mostly to reroute underground pipes and take soil samples. The actual groundbreaking and primary construction for the QNC will begin in March of 2008, when a hole about 10 metres deep spanning the footprint of the building will be dug, extending through the aquifer until hitting the solid ground underneath. The reason for the foundation of the building being so deep is that the QNC has to be extremely stable to allow for the type of scientific research taking place to be possible. As such, the QNC will have the lowest electromagnetic interference and physical vibrations of any building on campus. Because the foundation is so deep and groundwater is relatively close to the surface at the site, during construction, and after the building is built, pumps will have to be run at all times to keep water from seeping in.

The QNC will extend from the edge of B2 north to the patio of the SLC, and go from just east of Ring Road west to the Peter Russell Rock Garden. It will be connected by two overhead links on the second floor to the southwest corner of the Math and Computers building and the east side of B2. The structure will have a large concourse and mezzanine level underground, on top of which two distinct towers will be built, about equal in space. The south tower will be the taller of the two, seven storeys above ground in an approximately square shape, and will house the nanotechnology research and undergraduate program. The north tower, the new home of the IQC, will be rectangular and thus narrower but longer than the south tower, while containing five storeys above ground. A large atrium is also planned for the ground floor, extending all the way up between the two towers, while the IQC will also have a large multi-use seminar facility coming out towards Ring Road from the base of the north tower, which can also be used by the University with minimal impact on the IQC due to the availability of a separate reception area. An IQC Museum is also planned at the ground floor entrance of the north tower. Embracing environmentally-friendly architecture, KPMB is hoping to have green roofs for the seminar facility and the roof of the second floor around the base of the south tower. The design also calls for a narrow courtyard to be located on the eastern half of the space between B2 and the QNC, as well as landscaping on its west side along Ring Road.

The underground concourse will contain a metrology lab, which will contain expensive equipment for making precise measurements to be used for physics, biology, and nanotechnology research. There will be a large, two-storey clean room at the ground level in the southwest corner of the QNC above the metrology lab. The Nanotechnology Engineering undergraduate program will reside on the first and second floors of the south tower, which will contain labs, lecture halls, tutorial rooms, as well as study rooms. The third, fourth, and fifth floors of the south tower will be used for nanotechnology research.

The top floor of the north tower as well as the top two floors of the south tower will be used exclusively for mechanical and infrastructure support for the QNC. A large number of fume hoods, which limit people's exposure to hazardous fumes generated in the labs, will be present in the building and will require numerous fans, which will be installed on these floors. A large diesel generator will be present on the top floor of the north tower, ready to power the life safety requirements and key research equipment of the entire building, because parts of the QNC cannot afford to ever lose power for more than a few seconds. Not only will years of research be dependent on the constant presence of power, but the costs of restarting the clean room would be enormous. For example, because the particle count of the clean room has to be kept at extremely low figures, the interruption of the ventilation system for mere moments could be disastrous. If the particle count were to spike, it would take up to a year to get the numbers back down to an acceptable level. As well, some of the labs used for nanotechnology and biology research will contain materials and organisms that need to be constantly stored in freezers at -40ºC.

The original plans called for the groundbreaking of the building to take place this past March with the preparatory work beginning last October. The year-long delay of the project has been mostly attributed to some technical difficulties and redesigns of such a massive structure. However, the building should be ready to be used by the time the second class of Nanotechnology Engineering students reaches fourth year.

Is Returning to an Employer in Your Best Interest?

Point

KEVIN CEDRONE
4A MECHANICAL

At the last staff meeting of *The Iron Warrior*, I found myself in an argument defending the benefits of returning to an employer from a fellow staff writer. I have only returned to an employer once, but I think there are valuable opportunities in going back.

I wanted to make a joke about "going back" like "the slideback" after a breakup. You know, you leave your employer, thinking you're better off with professors and books, and your employer thinks she's better off with another student, maybe someone younger. After midterms and finals you realize the folly of your ways, and you get back together. The joke, like this article so far, was going nowhere. So enough tomfoolery, enough ballyhoo.

I spent my first and second work terms with the same employer. It was a great experience, and I was very much considering going back on my fifth work term for a second term with Research in Motion as well. Instead, I took a gamble and dropped out of co-op. Between going back and not, I took secret option three and arranged my own co-op term working at a nuclear power plant near Lyon in France.

I don't want you getting the impression that I'm a hypocrite. There are great opportunities presented to us in each co-op term, but sometimes the benefits of going back outweigh the potential benefits of seeking the new job, regardless of how interesting it may seem. A new job might sound good, but may result in your riding a photocopier for a term, and, if you want to avoid a potentially clerical work term, what better way than returning to a job you already know?

As engineers, it behooves us to be rigorous and scientific (in an applied kind of way) about this argument. Let's not consider jobs that require an 8-month (two-term) commitment. If you have lined up an 8-month job then you have already agreed to go back, and the following reasons are a bonus to you, above whatever features you are already expecting of the 8-month job in question.

Reasons to go back:

1. Beyond telling your advisor you're going back, you don't have to go through the co-op process. No co-op means no JobMine hassles. No JobMine means no interviews, which means no suit to keep ironed and also fewer missed lectures. Fewer missed lectures means you'll be better prepared for midterms.

2. If you already spent four months with a co-op employer, you're probably familiar with the town and real estate situation. These necessary evils are streamlined for returning students, while students getting a job in a new city often find themselves in the boonies wondering where any semblance of life can be found.

3. You already know the people, the processes, and projects of the employer. Your learning curve is reduced and you spend less time learning standard operating procedures and the building's layout and more time doing interesting and rewarding things. If this is your industry of choice, you are acquiring a depth of expertise that is very valuable in industry.

4. Your boss knows you and knows what you're capable of. You will get more responsibility and opportunities to work in new groups or offices. This is often one of the incentives employers provide for returning co-op students. The additional responsibility may seem like a drawback, but speaking as a fourth-year, the best way to profit from your time at Waterloo and on co-op is to challenge yourself.

5. You'll probably go back in consecutive co-op terms but even if you don't, going back will let you see some phases of a project you might not get to see otherwise. As with the depth of expertise point above, there are some things you can't learn in four months. Going back allowed me to skip certain boring testing and validation stages of a design and manufacturing campaign at a defence contractor.

6. You have doubled your chances, in chronological terms at least, to network and leave a positive lasting impression with your employer. If you took my advice and challenged yourself to new and harder tasks, you have probably impressed some key people and more than doubled your chances of being considered for a job after graduation. Be careful, however, since a job offer officially makes you a grown up. Then again, that's what this university thing is all about.

So there you have at least six clear reasons why you should go back to your old job if you enjoyed your experience the first time around.

Counterpoint

YUSUF BISMILLA
2B NANOTECHNOLOGY

This term is coming to a close, and some of you out are starting to consider going back to your previous co-op employer who left you an open ended invitation back next term. Maybe you've already agreed to go back, or perhaps it hasn't come up yet – no matter what the case, returning to your previous co-op job for a second term can only serve to diminish your co-op experience.

The thought that you'll get to continue your previous project and return to a place where you're familiar with the people and the way things work at the company can seem very promising on first inspection. However, each of these points really only hinder your co-op experience.

Your previous project, no matter how much you felt it was your baby during your work term, is still only one of the many babies you could have if you chose to tackle a new job. Unless you are already sure that you wish to spend your engineering career making steel tubing, chances are that anything you learned during your first four months at the company is about the optimal amount you'll be able to take out of that project even if you were to return. While you will continue to learn when you return to your employer, you'll gain many more skills and at a quicker rate when you move to a new employer.

This is especially true when you change industries. With six work terms, five of which are mandatory, why not make the most of it? Limiting yourself to two terms at the same company, in the same industry, working on the same projects immediately means that you have a disadvantage the following year as other students went on to gain further experience in more industries on several different projects. In addition to that supposed competitive advantage, what about the fact that co-op is meant to give you a diverse experience of the working world?

The ability to return to familiar surroundings is always tempting – however, the reason you're in a co-op program, and not partaking in a longer year-long to 16-month internship is because you can get a wide array of experience this way. Encountering new people, experiencing different workplace dynamics, as well as just the opportunity to live in a new place is a prospect that says you should search for a new employer. When switching employers, not only do you see the way things are run differently, which will help you adapt to any company you work at after graduation, but there's the potential to meet new people in new places. You'll expand your contacts within various industries, and there's nothing wrong with knowing too many people.

This isn't even limited to the workplace. There's the chance to make friends all over the country, or even the world - each co-op term spent returning to your previous employer is a term wasted that could have resulted in a completely new experience.

The draw of not having to worry about finding a job during the term is one that may make you choose to return. While the idea of skipping the JobMine system and dealing with the hassles it causes may seem promising, you're also missing out on key opportunities to hone your interview skills. Chances are, you didn't have to undergo a full interview to return to your employer, in fact – the offer was probably made over a coffee or lunch, far outside any other interview situation.

Maybe you just know you want to work with the company that invited you back for a second round. But if that employer does plan to hire you, chances are they can wait a year for you to graduate. Besides, you can do more for the company if you get some outside experience and then return, than you could in an additional four months there.

There are pros to returning to your previous job; however, the missed opportunity to expand into various industries, missed networking and experience at another work place, as well as the missed opportunity to further hone your interview skills as well as other job place skills that your previous employer missed far outweighs the pros. Having to deal with JobMine is a small price to pay for the benefits you'll get from moving to a new employer.

Editor's Note:
Point - Counterpoint is a feature meant to stimulate discussion on thought-provoking topics. The views and opinions expressed here do not necessarily reflect those of the authors, *The Iron Warrior*, or the Engineering Society.

Upcoming Events Calendar

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
July 9 Election Campaigning Begins 5:30 : IW Meeting (POETS)	**July 10**	**July 11** GradComm Pizza EngSoc Meeting #5 (CPH 3385) IW Issue 4 Publication	**July 12** Enginuity #4 Boggan Burgers Candidates Forum Genius Bowl	**July 13** SFF Debate Finals (CPH Foyer) EngPlay GradComm Pub Crawl #4	**July 14** EngSoc Joint Council Meeting EngPlay	**July 15**
July 16 5:30 : IW Meeting (POETS)	**July 17**	**July 18** GradComm Pizza	**July 19** Boggan Burgers EngSoc Election TalEng	**July 20** IW Issue 5 Deadline	**July 21** Student Life 101	**July 22**
July 23 5:30 : IW Meeting (POETS)	**July 24**	**July 25** GradComm Pizza EngSoc Meeting Pot Luck IW Issue 5 Publication	**July 26** Boggan Burgers	**July 27** Lectures End EOT	**July 28**	**July 29** A**5 Bowling

Check out up-to-the-day event postings on the EngSoc website at engsoc.uwaterloo.ca

Tool Absent from Canada Day Festivities

RUTH-ANNE VANDERWATER
4A COMPUTER

Many of you volunteered for Canada Day. Or maybe you just dropped by to check out the action. Perhaps you came to pay a visit to the Engineering Society mascot, The Tool. If this is true, you also probably noticed that a key component of the traditional Canada Day activities was absent: Unfortunately, The Tool could not attend Canada Day this year. The Tool and the Tool Bearers did send their sincere regrets for not attending the festivities this year. They were unable to come due to restrictions placed on them by the University of Waterloo Police Service.

UW Police told the organizers of Canada Day that the Tool Bearers were not allowed to be at this event with masks on. I met with the organizers because I understood that the Tool Bearers were not allowed at Canada Day – I did not know who had made that decision. I went with the intention of trying to convince the organizers that more "friendly" and "less scary" face coverings be allowed at the event. However, they explained to me that even if they wanted to at that point, they could not allow the Bearers there with any face coverings because of what UW Police had requested of them.

However, during Canada Day, several young children approached me asking, "Where's your wrench?" After explaining to them that some people at our school think the big guys carrying the wrench are scary, these children expressed to me that they didn't think the Tool Bearers were scary. Unfortunately, it's hard to convince UW Police that having someone (i.e., the Engineering Society President) there in plain clothes, smiling, sitting beside the Tool Bearers does help reduce the intimidation factor of the Tool Bearers at public events.

In my meeting with the Canada Day organizers, we also discussed the idea of face coverings on campus in general. Despite repeated requests to UW Police and the Dean of Engineering's Office, there is currently no policy that has been shown to the Engineering Society stating that face coverings are not allowed on campus. Interestingly enough, the UW Athletics mascot, The Lion, wears a costume that "hides the identity of the wearer and allows the mascot to be worn by a variety of people without changing the public image of the Warrior," according to an article about the then-new mascot in the November 9, 2001 issue of *Imprint*. King Warrior has a person who is dressed in plain clothes to accompany it at public events. This person is also there to answer questions people may have. This is similar to why the identities of the Tool Bearers are hidden and the fact that the Engineering Society President is present when the Tool Bearers are at an event.

The Tool Bearers on Canada Day in 2003.

It is important to protect the identities of the Tool Bearers. This is also a security measure to ensure the safety of our mascot. If people knew the identities of these nameless and silent individuals, the safety of The Tool may be compromised. Knowing the identities of the Tool Bearers may take focus away from The Tool. The Tool is the EngSoc mascot – the Tool Bearers are not. It is important that the focus be on the mascot and not on those who protect it. Part of the mystery of The Tool comes with the anonymous Tool Bearers. This is also an important tradition within the Engineering Society. It is a part of our identity and our culture. The Tool is a major component to how Waterloo Engineering students show their school spirit and pride. Unfortunately it is becoming harder to do this because of restrictions placed by other bodies within the University.

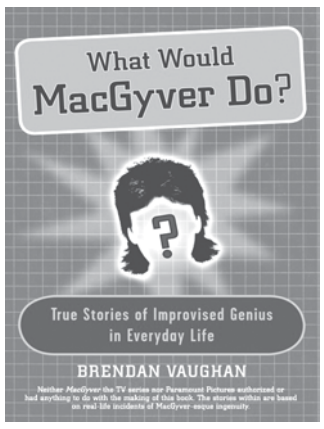
At Canada Day, the choice basically came down a decision between bringing The Tool and the Tool Bearers to the event (knowing that they'd be asked to leave) and not bringing The Tool at all. The decision was made to not bring The Tool for several reasons. First, the Tool Bearers and I felt that showing up and being asked to leave may bring down the spirit of the event and may cause negative publicity. Secondly, we felt that by not having The Tool at the event, the Engineering Society would be able to raise awareness to the public, alumni, and other students about the current situation. It is also our hope that this article will help explain to students, alumni, faculty, and other individuals who take the time to read *The Iron Warrior* why The Tool was unable to attend Canada Day.

Answer: Probably Not Read this Book

JACLYN SHARPE
3A MECHANICAL

What Would MacGyver Do?
True Stories of Improvised Genius in Everyday Life
by Brendan Vaughan
$25.00

I received this book for Christmas because it's the kind of book people give to engineers. I was at first rather intrigued by the concept of people's documented real-life MacGyver moments, but the book fell widely short of my expectations. In the introduction, the author reveals that he "does not possess the MacGyver gene" and has therefore solicited anecdotes from across the country (that country being America). Let me clarify this statement by saying that Vaughan wouldn't know a MacGyverism if it bit him in the face. Vaughan's admitted lack of creativity in a tight spot or handiness of any sort may explain his choice of stories, one of which I'll sum up briefly to give you an idea of what to expect.



An artsie with no mechanical inclination is driving down the highway when his muffler is knocked loose and begins to drag on the road. This understandably attracts the driver's attention and he pulls onto the shoulder and contemplates his predicament. Just then a truckload of mechanics pulls up and they offer (in Spanish) to cut his muffler off, which they do, before throwing it away. Our MacGyver is then free to drive off into the sunset, sans muffler, and resume being late for the class he is supposed to be teaching.

This kind of story was typical of the entire 208-page book. Using the name MacGyver fills the reader with expectations of ingenious contraptions thrown together heroically at the last possible second, out of a few handy materials. But what Vaughan delivers is a collection of anecdotes about ordinary Joes who solve problems in unconventional ways. Not a bad thing, but not what one is hoping for.

The book is not without fans; on Amazon.com 25% of reviewers gave it 5 out of 5 stars, though 40% gave it only 1. Those who loved the book hailed it as "intriguing and fun" and guaranteed it would "put a smile on your face", while detractors generally criticized the complete and utter lack of anything clever at all.

One of the only noteworthy things about this book is that it contains the story of local celebrity Geoff Milburn, an '07 Civil Engineering grad. Milburn was working as a WEEF TA in the Spring 2005 term when he made an air conditioner for only $24.50. Milburn and his resourceful contraption (consisting mainly of a fan, some copper tubing, and a bucket of cold water) were showcased on Canada AM, National Public Radio, and Slashdot.

I would not recommend this book for anyone who has ever fixed or made anything in their life. The few highlights (the scale being relative) did not make up for the majority of the stories being completely unremarkable.

QEMF Referendum Fails on A-Soc

REFERENDUM
Continued from Page 11

the Editor-in-Chief's editorial, many of the letters, and a couple of articles from both EngSoc Presidents and the new Dean.

Mark Liddy stated that many of the "No" campaign statements were based on ignorance of the facts, while others were downright untrue. He was also worried that the money was still going to be needed to try to maintain the level of education desired at the school to keep the Waterloo Engineering program in the top schools available and wondered where that money was going to come from. The Dean had seen more than just a raw dollar value in the fund, as he looked at it as a catalyst to try to increase donations from both corporations that would be hiring the students and from the alumni that had been in the students' shoes and seen what the issues were from the ground floor. Along the same lines, Cox thought that it would show both the government and the Faculty that the students not only wanted a better education, but wanted a say in how it was run. He also mentioned that the University of Toronto had recently added a $100 incidental fee that the students didn't have any choice about, and they were already seeing an improvement in their quality of education. Finally, he had concerns about what a Waterloo Engineering degree would be worth if the students didn't care about improving their, and their followers', education and that they were stuck with "antiquated engineering taught at a supposedly progressive school since people are too cheap to try to improve it!"

Once Society "B" returned to campus in the Winter of '83 to hear the news that their off-stream counterparts didn't share the same enthusiasm they had for voluntarily improving their own education, they had only a few things to say on the issue as found in the February 10, 1983 issue of *The Iron Warrior*. One major criticism that they agreed with is that the QEMF was going to be similar to the unreachable government, with a student committee allotting the funds as they saw fit after the money had been paid in by everyone. One suggestion that was floated was that departments would submit proposals of programs they would like funded, along with the purpose and the desired dollar amount. Upon paying tuition, a choice could be made by each individual student as to where the money was spent up to the amount dictated by the proposal. Some of the stipulations involved with the funding were that the money would never involve the Finance Department and must be spent as per the proposal along with submission of receipts and serial numbers to prove that the money was spent as dictated.

That last idea sounds a lot like the Waterloo Engineering Endowment Foundation that we know and love today. However, the first hints at WEEF didn't happen until the end of the '80s by two very involved Engineering students. Stay tuned for the next issue of *The Iron Warrior* for part two of this feature story, when the origins of WEEF, why it exists today, and its effects on Waterloo Engineering undergraduate education will be discussed.

Better Know A Beer: Brick Brewery

RORY ARNOLD
3A MECHANICAL

Located about ten minutes away from the UW campus is a place that helped launch a modern renaissance. This place is the Brick Brewery, started in 1984 by Jim Brickman, who is considered one of the fathers of Canada's modern beer renaissance. The Brick Brewery was the first microbrewery to open in central Canada in 37 years.

Brickman had a vision of starting a craft brewery, which produced lagers to appeal to both the mainstream beer drinker and the beer snob alike. He traveled to 68 breweries in 19 countries before opening the Brick Brewery in Waterloo.

I recently took the opportunity to travel to the brewery to partake in an afternoon of beer tasting. The Brick Brewery currently brews 15 beers and sells 1.2 million cases annually including Waterloo Wheat, which was just introduced to celebrate Waterloo's 150th anniversary. It also produces the line of discount beers under the Laker name. However, I had the pleasure of tasting eight of their more popular brews.

Upon entering the Red Baron Lounge, you quickly take notice that you are not in a traditionally decorated pub, nor are you in a fancy bar; you are simply in a place full of beer enjoyers who are there for the same purpose as you: to enjoy the Brick's wide array of craft beers.

My first three beers make up the J.R Brickman Founder's Series. These include a Pilsner, Amber, and Honey Red Beer. The Pilsner, like most of the Brick's beers, is brewed using European ingredients in a Canadian-styled brew. This gives it a bit of a light, hoppy flavour and aftertaste. The Amber beer is darker in colour than the name would suggest but comes off with a clean, dry taste. Dry beers are fermented longer and therefore more of the sugar converts to alcohol, giving the Amber a slight higher alcohol percentage at 5.5% alc/vol. The Honey Red was my favourite of the three. It is brewed with imported hops and yeast along with Canadian honey, giving it a smooth, sweet taste. I give each of these beers an 8/10 as they are the Brick's best tasting beers, but will cost you a bit extra at The Beer Store.

My next beer was Red Baron, which is the Brick's most popular beer. Red Baron is brewed with less hop intensity than most traditional lagers, giving the taste more dependence on the Formosa Spring water, which is more of a negative than a positive. This is a problem with a number of their beers including Red Cap, Formosa Cold Filtered Draft, and Formosa Light. I give Red Baron a 6.5/10.

Red Cap scored points for being the drink of choice of Bob and Doug Mackenzie.

After that I tried the Formosa Cold Filtered Draft and the Formosa Light. Brick was the first Canadian brewery to use the cold filtered European style. Cold filtering is done by chilling the beer before sheet filtering (basically using a sheet to filter the beer), but because of the colder temperature, the protein in the beer stick together, making them easier to filter out. This causes Formosa Cold Filtered Draft and Formosa Light to taste like stale water, so they really aren't even worth rating.

My next beer to try was the only ale on tap, Red Cap. This is a famous beer made by Carling in the Fifties and Sixties but discontinued in the Seventies because it fell out of favour with the public. In 1994 Brick bought the recipe and began brewing the ale for modern beer drinkers. In 2002 Brick brought back the stubby bottle in which original Red Caps were sold. It is known as a Canadian Ale and is lighter in taste than most ales. It contains less hops than most of the lagers and suffers from the same Formosa stale water taste as most of the Brick's brews. I give Red Cap image points for the stubby bottle and the fact that they were promoted by Bob and Doug Mackenzie, but in the end this ale falls through with a 4/10 score.

The final beer on tap was Waterloo Dark. While the past few beers had come up short on taste, Waterloo Dark did not fail in this aspect. The first thing you think when you see this black beer is that it must be a meal in and of itself, but then you are surprised to find it has a fruity light taste. It pours with a caramel-covered head and has a taste which seems like a hybrid of licorice and wild berries. It finishes with a bitter aftertaste. I myself was not particularly fond of this beer and found reviews by other people vary greatly with some people loving it and some people hating it. However, I did notice that most of the people who loved it were the same snobs who would not try anything from a mainstream brewery and thus brought me to the conclusion that only rich Toronto Liberals find any enjoyment in this beer. I give Waterloo Dark a 5.5/10 because it dares to be different and, while I would never go through a case of this beer, it does have an interesting taste.

Upon admiring the decorations in the lounge at the brewery, you will see a whole corner devoted to beers from all over the world collected by Jim Brickman. Looking towards the street you can see working fermenting tanks. Closer inspection of the walls shows that they are filled with plaques won at the Monde Selection for Quality Competition in Brussels. The Brick Brewery has won more gold medals there then any other North American brewer with 24 including going four years in a row with a gold medal. But, then again, unless it's about waffles, I don't really listen to what the Belgians have to say.

HUMOUR AND SATIRE

Dear LowRider...

"3A isn't a year… It's just a number and a letter!"

Before we get to the advice, I want to start off with a quick rant about terms. Now you might be wondering, "What the hell does he mean by terms?" Well, you see what I am talking about is when you meet someone new who doesn't go to Waterloo and then they ask you, "So, what year are you in?" You respond with something like "Oh, 3A," and then you get the that's-nice smile-and-nod, but all the while they are thinking, "3A isn't a year… It's just a number and a letter!"

For some reason, people can't seem to fathom how school and work terms can alternate and that school terms can be split into two parts (I know, what a complex concept). They also without a doubt express their concerns of how anyone could stand to have no summers off for their university career – oh, poor us! But you see what they don't realize is that they don't have any summers off either! What are they doing? Of course, working at the hardware store, and it's like, well, you seem to be working now – do you really have a summer off? Yeah, that's what I thought…

Dear LowRider,

Yesterday some dude yelled at me in the bathroom for not obeying 'the code'. What the hell is he talking about? All I did was go up to the urinal next to him and started making small talk… What gives?

Confused under pressure.

Dear C.U.P.

The code is the unwritten rulez of the male bathroom, and trust me, thou shalt follow the rulez or face the consequences (usually a really awkward bathroom experience and loss of friends and possibly limbs…). So to avoid pissing anyone else off (excuse the bad pun) here is The Code:

• Thou shalt leave one urinal buffer between you and the next closest person.

If there are no spots, make yourself busy – wash your hands, do something… anything to buy some time.

• Thou shalt not talk.

This isn't like waiting in line for a movie – small talk is not acceptable. It's pretty simple, just keep your mouth shut for the 45 seconds.

• Thou shalt not glance more than once.

Glances are for purposes of acknowledgment only… "Yeah, I see you there. I will not look again." That's it, that's all.

So do all those that frequent male washrooms a favour and obey the rulez.

\LR/

So Mr. McFatty,

Reading your column recently I have to tell you, my first reaction was "What a piece of $#%&!". Everyone is now dumber for having read it. I think I realize now why the Iron Warrior has had the troubles they've had the past while, with sub-par LowRiders dragging the paper down. I'm pretty sure a trained monkey could do a better job than you.

My question for you is, why are all the issues of the Iron Warrior so greasy to the touch? I have a couple theories – most of them involve how fat you are. I'm nowhere near you right now, and I can *hear* you getting fatter. You used to be so skinny, but that term of sitting on your ass, getting more bitter, and consuming nothing but man-juice has assaulted your physique and personality. You used to be so much more, so much funnier, Nintendo Steve. Now your fatness is dragging down the IW along with your cankles.

Love,

Richard Simmons

Dear hasn't left campus for the last decade,

OK, so firstly before I even get to your question I gotta know: Do you have some sort of chronic mental disorder that keeps you from leaving the KW area? I'm pretty sure the last time you did a term outside of Waterloo, Nanotech was simply a gleam in the Dean's eye. Seriously, are you addicted to getting *$%#faced and singing terribly at the Spur? Oh wait, you work there some nights, don't you… so those nights you just get to hear other people sing terribly. What a fulfilling job!

Maybe you have been in the KW area for so long that its warped your brain and you can't remember what the word fat means, because last I checked having a sixpack doesn't really qualify as fat… but I guess I should get to your question. I have a theory myself: Did you consider that the issues of IW that you touched are greasy? What do each of those issues have in common… Hmm, possibly that you touched them? Maybe you should start washing your hands after your 7 pm trombone solos, and don't count on doing duets anytime soon. Women nowadays prefer a more well-traveled man like yours truly… Keep that in mind next time you're applying for jobs.

Sincerely,

\LR/

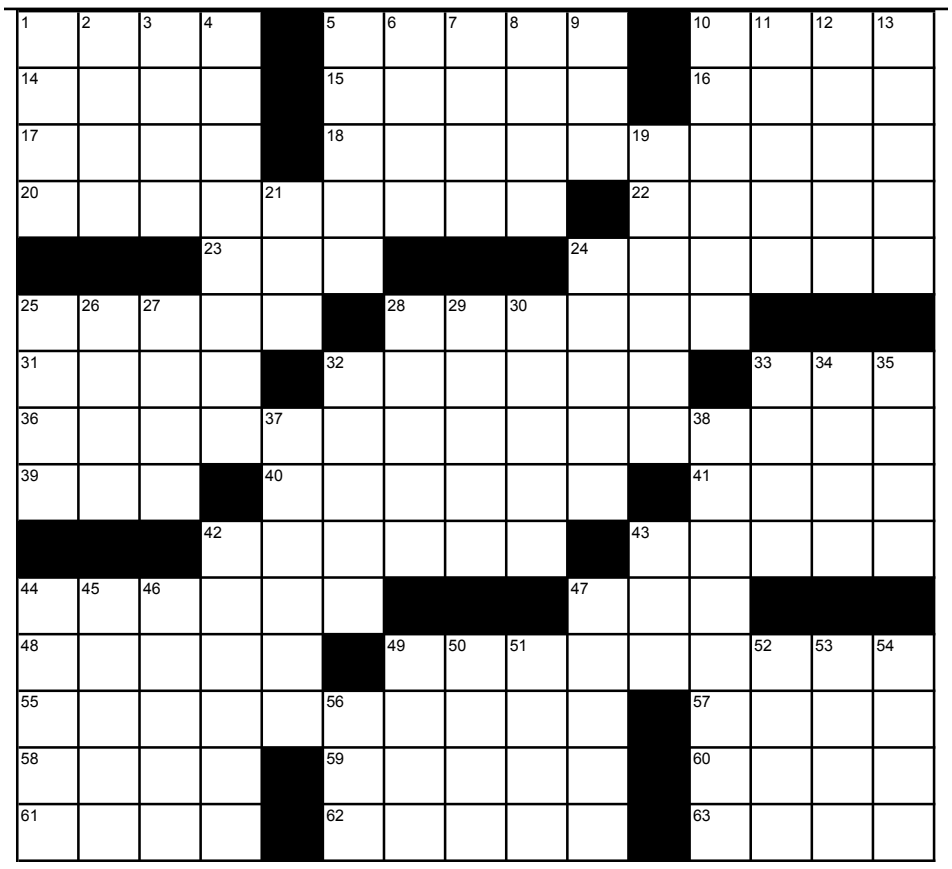
POETS MOVIE SCHEDULE

SHOWINGS BEGIN AT NOON

		Wednesday July 11 The Negotiator Hostage John Q	**Thursday July 12** Guess the Link Day! Three movies: one connection. Can *you* solve the puzzle?	**Friday July 13** TMNT (Teenage Mutant Ninja Turtles) TMNT II TMNT III
Monday July 16 The Recruit Confessions of a Dangerous Mind The Good Shepherd	**Tuesday July 17** Pan's Labrynth Fifth Element Final Fantasy VII: Advent Children	**Wednesday July 18** Blues Brothers Kung Fu Hustle Almost Famous	**Thursday July 19** Talladega Nights Stranger Than Fiction Old School	**Friday July 20** Smokin' Aces Crank The Punisher
Monday July 23 Collateral Miami Vice Phone Booth	**Tuesday July 24** X-Men X2 X-Men: The Last Stand	**Wednesday July 25** Robin Williams live on Broadway Enter the Dragon Wedding Crashers	**Thursday July 26** Guess the Link Day! Three movies: one connection. Can *you* solve the puzzle?	**Friday July 27** Resident Evil Hell Boy Underworld

Crossword

MICHAEL SUE-KAM-LING AND HILARY LOCKIE
3A CHEMICAL



Across
1. Analogous
5. Got some shuteye
10. Taiwanese computer company
14. Ringtone format
15. Aussie "bear"
16. Mrs. Dithers in Blondie
17. Liquefy
18. Energy retention process
20. Miss your alarm
22. Indian language
23. Antiquated
24. Has a hunch
25. Mournful poem
28. Flipping through a book
31. Prehistoric discovery
32. With confidence
33. Electroluminescent bulb
36. High velocity explosive
39. Design competition team: Formula ___
40. Greek philosophical reasoning
41. Sign gas
42. Public thoroughfare
43. ECE has a shortage of them
44. High regard
47. DOS file system
48. Discover
49. Sparkle vividly
55. Took off a blouse
57. 1992 Barenaked Ladies single
58. Early first-person shooter
59. Grasped closely
60. Yearn
61. Greek cupid
62. Step after cut
63. Overdue

Down
1. Rounds
2. Ukrainian capital
3. Like some threats
4. Abundant atmospheric gas
5. Scandinavian poet
6. Earring site
7. Alleviate
8. Raindrop sound
9. Pit contents
10. Temporary
11. Nickels and dimes
12. Wear away
13. Indian queens
19. Aromatic functional group
21. Cunning
24. Grain storage units
25. Baby newts
26. Turkish currency
27. Smallest Great Lake
28. Blender setting
29. Emerged
30. Understand (2 words)
32. Female mutant
33. Malicious glance
34. Alcoholic alkene
35. Rec rooms
37. Purpose
38. Building block of crystal structures (2 words)
42. Vaccines
43. High energy phase
44. Dodge
45. Mister in Madrid
46. Forbidden
47. Sweet snack
49. RC, e.g.
50. Duty
51. Landlord's due
52. Small forest buffalo
53. Hue
54. New mobile communication network
56. Networking protocol

Send your submissions for the photo seen above to IWcapcon@gmail.com! The winner will receive another super random prize. Please be sure to include your name and program.

Winner:
"Instructions:
Place 'E5' in desired location.
Water with $50 million.
Wait 3 years.
Enjoy!"

Elliot Powidajko
Mechanical Graduate Student

Last Issue's Crossword Solution

U	G	L	I	■	A	G	L	O	W	■	B	O	A	T
S	E	E	M	■	P	R	I	D	E	■	I	N	C	H
S	N	A	P	■	P	A	N	E	L	■	S	U	R	E
R	E	P	R	I	E	V	E	■	L	O	O	S	E	N
■	■	■	O	K	A	Y	S	■	K	I	N	■	■	■
C	O	M	P	E	L	■	■	D	E	L	■	P	T	A
O	N	C	E	■	■	S	L	O	P	E	■	E	R	R
M	I	C	R	O	E	L	E	C	T	R	O	N	I	C
M	O	O	■	R	I	O	T	S	■	■	M	A	C	E
A	N	Y	■	A	N	T	■	■	F	O	I	L	E	D
■	■	■	I	T	S	■	T	R	A	P	S	■	■	■
P	L	A	N	E	T	■	R	E	S	T	S	T	O	P
O	U	R	S	■	E	D	I	C	T	■	I	O	T	A
L	A	M	E	■	I	R	A	T	E	■	O	D	I	N
L	U	S	T	■	N	Y	L	O	N	■	N	O	S	E

THE IRON INQUISITION

Mike Seliske, 1B Computer

"What would you do if you were Dean of Engineering?"

Evan Murphy
4A Computer

"Improve Parking Services."

Jeffrey Lipnicky
3A Mechanical

"Vote Jeff Lipnicky for EngSoc VP Education!"

Dave Forrest
1B Geological

"I would say 'lower my salary', but I probably wouldn't if I was Dean because I'd realize how much work it involves."

Adam Melnik
3A Geological

"Build up instead of out."

Danilo Malanczyj
3A Mechatronics

"Wear satin robes and smoke cigars all day."