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# THE IRON WARRIOR

*Friday, March 17, 2000* | *The Newspaper of the University of Waterloo Engineering Society* | *Volume 24 Issue 5*


# FYI... C???


**DAN FOONG & KRISTINA HOTZ**
**1B Civil & 1B Computer Engineering**


Fun?...YEAH...Interesting?....Certainly!!!! That's not really what FYIC stands for, but it sums up the conference best. Started last year by McMaster Engineering students, the First Year Integration Conference introduces first years to the rigors of being an engineer.

Besides all of the fun and partying that went on over three days of excitement, it was a chance for first year engineering students from all parts of Ontario to learn about what the engineering profession does. Although Engineering Societies at each school do an adequate job in telling first years about programs, societies, and organizations that exist to help engineers, they really don't tell enough. FYIC was a chance for these organizations to get a message out to first year students.

*Delegates attending the FYIC conference at McMaster pose for group photo*
*Photo Courtesy Dan Foong*

Inspired by Braden Kurczak, of McMaster University, this is the conference's second run at teaching first years. After attending an ESSCO conference, he felt that there just wasn't enough information out there about the profession for first years. So after an exhausting year of preparation, McMaster University was the first site of FYIC. It did so well that the conference was run again this year. It has been so successful since its inception that other Universities are petitioning to host the next one.

As for what actually happened: after getting settled into their rooms at the Ramada Inn, about sixty or so somewhat happy engineers made their way to the Village Castle. Intended to be a social event so that all the delegates could get to know one another, it set the stage for the rest of the weekend. Here, they meet the Keguin, a marvel of engineering designed by Carleton students — a fully insulated beverage container in the shape of a penguin.

The next day was packed with events, discussion groups and special guest speakers. It was a chance for ESSCO (Engineering Student Societies Council Ontario) and CFES (Canadian Federation of Engineering Students) to let first year students know that their groups existed. In addition, the Professional Engineers of Ontario used the opportunity to promote the new student membership. Sign up online today!

Aside from the discussion and presentations, students were given free time, which they used to either "sticker-up" the McMaster Campus (If you look on the McMaster Nuclear Reactor, there should be a Waterloo EngSoc Crest right at the top), or to get to know each other better. Time was also taken out of the day to inform students about how to increase class participation. Many students found that their classes were apathetic to what their EngSocs do around campus.

To inspire class participation, a special guest speaker broke the group up into two. Each group was asked to write down as many ideas as they could about how to advertise for an unknown music group making an appearance. Ideas ranged from the plausible, ...to the utterly insane (there's nothing wrong with Monkey Knife Fights...).

After supper, another night of social activities and bonding began. The night started off when, the other schools were introduced to BATCH, courtesy of Waterloo A. Next, the organizers told the delegates that they would be heading to a real dive full of "[happy] old people." Being engineers and inexplicably drawn to places that promised cheep beverages, they willingly followed. A McMaster student put it best by saying, "There really isn't anything like [consuming liquids in mass quantities] and singing karaoke with [happy] 80 year old women."

After a morning of discussion periods, the energy level of the delegates was still incredibly high and infectious as could be seen by the participation in the "Frosh Olympics." Pushing people in shopping carts, building gummy bear towers, and singing the Plummer's Hymn with a mouthful of marshmallows made for an interesting afternoon.

The conference ended with sad faces and promises to keep in touch as the students realized that it was time to leave, heading back to studies. Although the weekend was fun and eventful, several delegates felt that icebreakers and more introductory games would have helped people to get to know one another.

One of the Ottawa delegates summed up the conference best by saying, "Amazing, very informative, and a must to keep the Canadian engineering culture alive and well."

# Why Engineering?


**SCOTT HAFEMAN**
**Frontrunners Director**


Do you remember the days when you didn't know what you wanted to pursue in life? Are you still not sure? How about sharing some of your experiences in engineering with high school students who are confused about what engineering is all about? What do engineers really do and what's different about certain disciplines?

Join the Frontrunners program and see those doubts vanish before your eyes. This program was set up by the Engineering Society as an outreach to Grade 11 and 12 high school students in addition to the Shadow Day and Explorations programs. Students who are thinking about their future become well informed about the tremendous possibilities in the engineering profession and Engineering at Waterloo.

See their amazement as you walk them through the short but eventful forty year history of our University. Highlight the exceptional co-op program that Waterloo offers, sending their students across the globe to leading companies of today and those charting the future of tomorrow. Show them how engineering provides an intense mix of theory and practice that keep students on the move (about every 4 months). Share your experiences with them and answer many questions they haven't even thought of yet!!

The First Year Office maintains tremendous interest in collaborating with this program. The key coordinator Kim Boucher, the Associate Director of Admissions, continues overseeing a team that is more active during the work term the program between terms. The combined efforts of Engineering students and the First Year Office has resulted in many successful presentations across Ontario. Since co-op students are placed out of province as well, the Frontrunners program has the potential outreach all over North America.

So what's the catch? The fact is that there is none!! All it takes is one or two hours of your time. An informative overhead presentation has already been prepared for you, with tips on how to enhance your presentation skill and answers to many questions outside of your specific faculty. For those with savvy, you can even give an online presentation and show them some exciting material from your new job this spring!!

In the past, letters were sent to inform you about when you were to present, along with a set of overheads. Soon, all you have to do is simply sign up online and the Frontrunners director will match you with an interested school in your area. We make all the arrangements for you, send you a reminder at the beginning your work term and keep you informed throughout the term. You will also receive a package and will be able to download your presentation if you prefer.

Be sure to sign up outside the Orifice or online for a chance to change the lives of many high school students. Give them a personal perspective that they could get nowhere else. Add anecdotes to the Frontrunners presentation that will captivate your audience.

Don't forget, there will information about a short meeting a week or two before exams where you will be informed about the presentation and any further questions can be answered.

If you would like more information please feel free to leave me a note in orifice or contact me at shafeman@engmail. I hope to see you representing the excellent opportunities that Engineering provides.

## *In This Issue...*



***"Never stop until your good becomes better, and your better becomes the best." - Frank Zappa***

# Make Computers Go Away

**Editor's Rant**

*by Ryan Bayne*

This week, I've actually decided to write about a single topic. I know, that's got to seem like a mistake, but I'll try to stay focused. I'm going to write about why I'm such a geek. I use the word geek in a positive sense. I mean, I don't have tape on my glasses (actually, I don't wear glasses, so that would be really weird,) I don't have a pocket protector, and I don't watch Star Trek. What makes me a geek is that I just really enjoy using computers and related geek toys.

I mean, I try to have a life outside of computers, otherwise I wouldn't be editor of this newspaper, although I am editor primarily due to my computer skills. But for the most part, I am an addict. I carry my PalmPilot with me just about everywhere, even out to concerts and nightclubs, I surf the web at the breakfast table, and I've been using computers since I was two. You can see why I might be in Computer Engineering at this point in the story.

I don't claim computers are the greatest thing since sliced bread. (Croutons are.) But I do use them a lot. However, I believe that computers are meant to be tools, just like a pen and paper, or a calculator. I want my computer to work for me, and I don't want to work for my computer. This of course is part of the reason I prefer Apple Macintosh computers over anything based on Intel, especially Microsoft Windows.

Back in high school, I had the opportunity to work at the same company as Bill Buxton. Right now, you're probably asking "Who's Bill Buxton?" and if you're not asking that because you already know who he is, then you're probably in Systems Design. Bill Buxton was employed as the Chief Scientist at Alias|Wavefront, which is a subsidiary of SGI. This was back when SGI was cool. Remember that girl in Jurassic Park? Anyways, to get back on topic, Mr. Buxton is a researcher in the field of human computer interface design, among other related fields.

His work focuses on making the computer invisible in your work. No one sits down and says "I'm going to write my lecture notes, WITH A PEN!" The pen is just there, as a tool. But if I want to draw something on the computer, I need to turn on my computer, open my paint program, and then translate the movements from the mouse into my drawing on screen. If anyone's ever tried to sign their name with a mouse, you probably have an idea of why this may not be the best interface. Sure, you can get drawing tablets, but nearly all of them require you to look at the monitor, while drawing on the desk. Once again, you don't write on one sheet of paper to see your work appear on the other side of your binder, it appears under the pen. While tablet manufacturers now make really expensive tablets with displays embedded into them, at Alias|Wavefront, there was something very cool, at least to me. It was a desk the size of a large drafting table, but instead of working with pen and paper, it held a large projection screen, and a graphics tablet. This meant that you could take your experience drawing on a drafting table, and translate it directly to drawing on the computer screen. The computer became much more of a background tool for work, instead of something you had to deal with directly.

Another cool innovation, and I have to wonder why I don't see this in other applications, unless there's patent issues, is marking menus. If you use a menu on a computer, you usually must read the menu, before knowing where to point the mouse. It's especially painful in Windows and X-Windows when you don't necessarily know where the menu will be located. (Sorry, more Mac bias showing through.) If you want to use the shortcut, you must give up the mouse, and use the keyboard. Bill Buxton helped to develop these marking menus, which were accessible anywhere on the screen. By holding down a button for a short length of time, a radial menu (think of a compass) would appear, and you would then move your mouse in the direction of the item you wanted. Some implementations had two levels, so you might be able to pick Edit by moving down, and Paste by moving right from the following menu. The benefit to this, is that after a period of time, you start to remember the movement, and when you want to paste text, you just click and move your mouse in an L-shaped pattern, and it's done. It's quick, it doesn't require shifting away from the mouse, and you've learned the shortcut just by using the menus.

So these are a couple of ways that computers can become less intrusive in your work. Who knows if we'll see these, since what I've mentioned is five years old, but personally, I can't wait until the computer is as easy to use as my pen.

# Concrete Toboggan Rides Again!

**RANDALL DELONG**
**3A Civil**

The purpose of this article is to announce, unto the masses, the launch of the Great Northern Concrete Toboggan Team for 2002. Before I get too far along on my quest to promote (through widespread and well placed propaganda) this new phenomenon that will surely stir up a fever never before experienced at this university, I should probably take a moment to describe just what exactly the concrete toboggan is.

The concrete toboggan is one of the oldest of all inter-school competitions, which has grown to include such events such as the Midnight Sun and the Formula S.A.E. Celebrating its 25th anniversary in 1999 (an event hosted here at Waterloo), the showcase of ingenuity involves numerous schools competing in a variety of categories all centered around the construction and racing of a toboggan made out of (yes you guessed it) concrete.

As you are probably already aware, this competition is the brain-child of your faithful class of civil engineers. Each year the 4th year civil engineering class heads off to the arctic wilderness where the competition is being held and makes a valiant attempt at decimating the competition. It's the kind of thing that would not be unusual to see featured in a Nike extreme sports advertisement. Imagine the jingle as something along the lines of, "You think tobogganing is just for kids? Try it when your sled is made of three hundred pounds of concrete and steel". Pretty catchy I thought, and hopefully so will the people at Nike when I approach them for money. In the past we have had great success with a number of 1st place finishes and our team hopes to continue this proud tradition.

I would like to thank the Engineering Society, on behalf of our team, for their generous donation of $500 (we wanted $10000, but you can't have everything) to allow our team a start up fund. It was much appreciated and showed us that we can go back in the future and ask for more.

It is my humble hope that all of engineering will get behind our team by buying a Boggan Burger each Thursday and by supporting our other wild, crazy and as yet undetermined fundraising attempts. Competitions serve as a way to prove that the University of Waterloo produces the finest engineers in the world and we look forward to reminding everyone of that.



THE IRON WARRIOR

***The Newspaper of the University of Waterloo Engineering Society***

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# Mmm... Polystyrene

**WILL PATTERSON**
**3A Environmental Chemical**

On a blistery, cold winter morning, a group of 9 chemical & environmental engineering students crammed into two cars outside Gino's, and started off to DOW chemical plant. Two and a half hours later, and stopping at a Wendy's (Ingersol in one car, Sarnia in another), we arrived in Sarnia. We quickly found our way to reception where we waited for a while.

After DOW reception figured out what to do with a bunch of Waterloo Students, we found ourselves inside the polystyrene production building. We were escorted to the conference room under a watchful eye. An interesting presentation by DOW Canada, and the Sarnia plant site got under way. Amazingly, there are only 2000 employees at DOW Canada, with 1000 in Fort Saskatchewan. We went through basic organic chemistry of polymers. Then a special demonstration of the latest type of plastic, INDEX* interpolymers, which is a polymer made from a mixture of ethylene and styrene monomers. This demonstration included samples and toys. This plastic has a unique property that can make it bend easily at temperatures just slightly warmer than room temperature, and return to hardness at room temperature. It has a high gloss, high flexibility, can be easily dyed to various colours, and is compatible with many other plastics.

When the presentation concluded, we were given a short tour of the building where we saw the rubber used to harden the polymer, the control room, where two operators (and a bunch of computers) monitor the entire production of polystyrene. We then saw the quality test labs, which polymer solutions are mixed by robots. And finally, the cooling of molten product into rods to be cut into beads to be shipped. One of the operators was kind enough to make a polymer-rod "sculpture".

Polystyrene beads are then sold to other companies to make many products like CD Jewel cases, foam meat trays, Styrofoam™ Insulation, and with high impact resin, refrigerator linings, and bicycle safety helmets.

Interpolymers can be manufactured into flooring, paving, toys, labels, sheet, films, foams, automotive parts and footwear. While we didn't get the chance to visit the other parts of the plant, DOW Sarnia produces LDPE (Low Density Polyethylene) that gets used for flexible plastics and clear films (clear plastic bags, etc.), HDPE (High Density Polyethylene), Epoxy Resins for use in plastic coatings, and corrosion-resistant parts. They also make the materials for foam products, propylene oxide derivatives.

To find out more about DOW, visit their website at www.dow.com. As for us, we piled back into our cars, and reluctantly came back to Waterloo with our complimentary coffee mugs, rulers and DOW information.

# Yummy CFC!

**WILL PATTERSON**
**3A Environmental Chemical**

For a change of pace from a normal critique, I decided to go to Chester Fried Chicken. What can be said about it? There was no-one sitting in the place, but of course, I arrived at 1:45 in the afternoon. It is cafeteria style, and feels cold and drab: the walls are a white and the trim was a drab shade of grey. I ordered a combo #1: Chicken burger combo ($5.60). All combos come with potato wedges and a regular size fountain drink. The staff was very courteous and served me with pleasure. If you can get over the decor, the place isn't all that bad. The potato wedges could have been cooked for a bit longer, but the mixture of spices was excellent. The burger bun was fresh and moist, with sesame seeds sprinkled on top. There was a healthy piece of well cooked, moist chicken breast with just the right amount of lettuce and mayo spread on the bun. Later on, I enjoyed some tenderly cooked rice mixed with just the right amount of vegetables and spices. The portions were generous for the price. The manager and staff are nice, friendly people who are delighted to serve you, and will remember you on future visits. Overall, I give it 3 out of 5 stars.

# Buses Are Big and Heavy

**CHRIS BARDON**
**Bus Push Director**

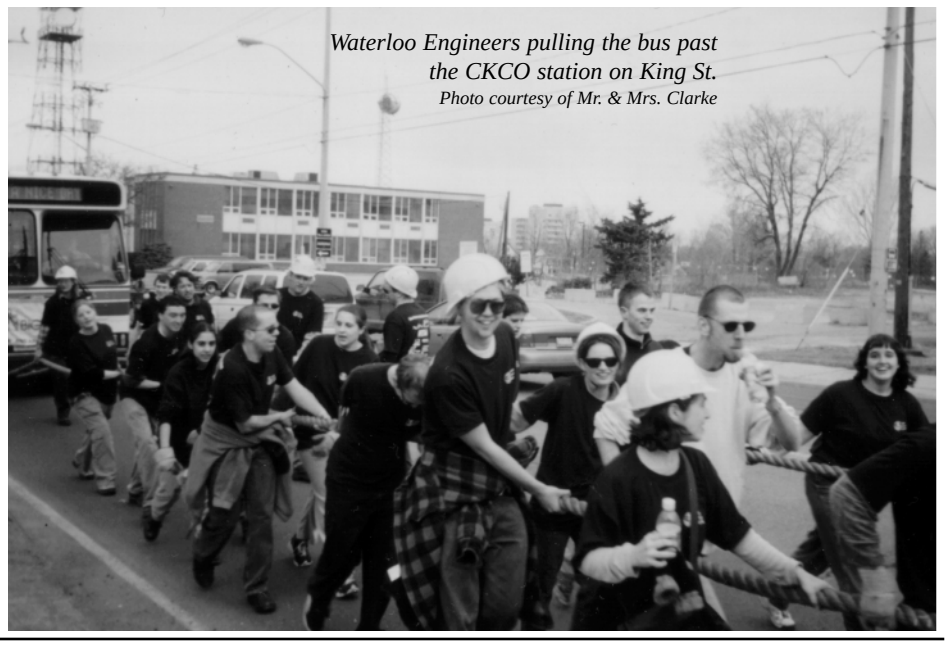
On March 4, about 50 Engineering students came out and pulled a bus for Big Sisters. That may not sound like much, but it was a lot of work for a Saturday morning. Some were ready to go an hour before, and some were dragged out of bed a mere fifteen minutes before we were scheduled to start, but nonetheless they were there.

Aside from a few problems with our police escort, the event went off almost exactly as planned. We pulled the big heavy bus down University to King, and all the way up King to Market Square. Lead by the TOOL in the Alternative Fuels truck, we were helped along by the encouragement and donations of drivers and pedestrians, and the free timbits courtesy of the friendly, and a little bewildered, people at Tim Horton's.

After reaching Market Square in record time, we rode the bus back to POETS for a free lunch courtesy of Subway and Gino's Pizza, and prize giveaways. Thanks to ATI, Labatt's, Microsoft, Gold Crown Brewery, Cyclepath, East Side Mario's, Ethel's Lounge, Olympic Gyros, The Fox and Pheasant, Mongolian Grill, First Choice Haircutters, HMV, Jose's Noodle Factory, Kick-Off Sports Bar, and Mel's Diner for their prize donations. Also, special thanks go out to RIM for helping to subsidize the T-Shirts, Grand River Transit for donating the bus and driver, and Tom Kempel for lending us the huge rope.

Everyone always asks why it's called a Bus Push when we actually pull it. After delving into the depths of EngSoc lore, we found that originally we did push the bus. As more people joined in, we switched to the more standard "pull", but kept the original name as a constant reminder of those brave souls that once got behind the bus and pushed with all their might.

Finally, I want to thank Dan Clarke and Melanie Taylor for all the work they put into this event with me. Also, congratulations to Micah Potechin, Mike Olley, and Jenn Motuz, who each raised more than $300, and to the 3A Civil class, for raising more than any other class.



*Waterloo Engineers pulling the bus past the CKCO station on King St.*
*Photo courtesy of Mr. & Mrs. Clarke*

The Sandford Fleming Foundation
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Waterloo Campus Activities
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## The John Fisher Award for Leadership

The John Fisher Award for Leadership is made from time to time to a graduating student whose activities throughout his/her academic career have made significant contributions to Co-operative Engineering Education. Nominations for the Award can originate from student groups, faculty members and the Foundation. Nominations should document the nominee's contributions and include other support for the nomination. Contributions are to have a professional orientation and can involve student activities, the Sandford Fleming Foundation work or other appropriate functions. Letters from colleagues, faculty members, and others knowledgeable of the nominee's efforts will be given consideration.

The Award at Convocation, consists of a Citation and an Honorarium of $1,000. For more information, contact the Sandford Fleming Foundation. Nominations are to be addressed to Jeff Weller, Executive Secretary/Treasurer by **April 1, 2000.**

## Teaching Assistantship Awards

Please submit your nominations to the Engineering Undergraduate Office

## SANDFORD FLEMING FOUNDATION DEBATES

**Today**, March 17 at Noon in POETS. Everyone is welcome to attend.

# Triumph at OEC!

## *Waterloo Engineers Win 4 of 6 Categories*

**DAVID TUTT**
**3B Chemical**

What's that? We won again?

The annual Ontario Engineering Competition provided a battle ground for more than 200 engineering students last weekend at UofT. Waterloo sent 26 students to compete in 6 categories: Entrepreneurial Design, Corporate Design, Explanatory Communication, Editorial Communication, Team Design, and Parliamentary Debate. Yes guy! We won the majority of categories.

The winners of each category were announced at a banquet where several guests of honour and Engineering deans attended. UW Dean Chaudhuri was there and apparently happier than David Duchovny at the Grammy Awards. Professor Karray from Systems Design , the faculty advisor for the student teams , was also pleased with the results: "....(The UW teams) have shined brilliantly as in previous years...".

The first and second place entries were chosen to represent Ontario at the Canadian Engineering Competition happening this weekend at Western. As an outsider you have realize that the prestige of winning a category is not only good for the trophy case, but great for the bank balance: Cash prizes were awarded to the top 3 teams by the contributing sponsors ranging from $500-$3,500. Don't be surprised to see Keith Parker at a craps table near you.

Win or lose, each of the students representing Waterloo deserves more than a pat on the bottom. There is a significant time commitment put forth and we should all be proud of our peers. They're what keep our reputation as a strong force to reckon with. Again, congratulations!

**Entrepreneurial Design:**
1st prize: Erick Vandeweghe, Ryan Anderson and Steve Pontisso, Systems Design, UW
2nd prize: U. W. O. Team
3rd prize: McMaster Team

**Corporate Design:**
1st Prize: B. Olsen, A.Elkhazin, E.Tahir, J. Leng and M. Hemingway, Systems Design, UW
2nd prize: U. Toronto Team
3rd prize: Greg Cantlon and Joe Philbrook, Systems Design Eng, UW

**Explanatory Communication:**
1st Prize: Andrea Brown, Mechanical, UW
2nd Prize: Karen Wong, Systems Design, UW
3rd prize: U. Carlton Team

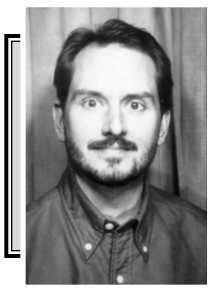
**Editorial Communication:**
1st prize: Keith Parker, Systems Design, UW
2nd prize: U Toronto Team
3rd prize: Steve Pontisso, Systems Design, UW

**Parliamentary Debate:**
1st prize: McMaster Team
2nd prize: Royal Military College Team

**Team Design:**
1st prize: McMaster Team
2nd prize: Toan Nguyen, Trevor Stephenson, John Cuddihy, Jason MacIntosh, Systems Design, UW
3rd prize: Royal Military College Team

MORE INFO: Inquiring minds can visit http://www.ecf.utoronto.ca/~oec/

# Simulations, Substitutions and The Matrix



**Technology Review**

*by Mark Morley*

When Joe Cosentino and I first brought Model ChemLab to market I envisioned that it would be used to assist students in preparing to perform actual chemistry experiments. I had taught high school chemistry classes and found it difficult to help students get ready to do a lab. I would ask them to read the procedure the night before. I would demonstrate the procedures in front of the class. But inevitably I would end up walking around from lab station to lab station explaining what to do. It seemed that the procedures wouldn't sink in until they got their hands on the test tubes. So I figured that a simulation of a lab would be a great way to become familiar with equipment and procedures before walking into the lab. My idea was that, instead of reading an abstract description of what to do, they could get their hands on their computers and run through a simulation. When they went in the lab they would know what an Erlenymeyer Flask looked like and they would have some understanding as to how it is used with a Buchner funnel. As an added benefit, well-prepared students would be less likely to waste chemicals. This would save money and protect the natural environmental from some of the impact of their results going down the drain.

A couple of months later I received an e-mail from a chemistry teacher at The Florida High School, a virtual school that holds all its classes on-line. She asked me if Model ChemLab could be used for distance education. I was taken aback. I thought for a moment. I couldn't see any technical reasons why it wouldn't work. We had designed the program so that students could save their labs, assuming that they might want to go back to it sometime to review it or finish it off at their convenience. The students would just need to e-mail their results to their instructor. Yet I had my reservations. I intended that Model ChemLab be used in conjunction with the regular chemistry curriculum. It never occurred to me that anyone would want to do simulations as substitutions for performing actual experiments. Sure I thought an instructor might want students to perform virtual labs that were dangerous or considered too time consuming. But I assumed that they would still have plenty of opportunity to do real labs and gain experience using actual equipment. This wasn't what I expected.

I voiced my reservations to the teacher and she explained that their school was for students who didn't attend a regular school, either because of distance, disabilities or just plain truancy. Although she appreciated the limitations of our software, she felt the simulations would provide a unique learning opportunity for her students. She challenged me to see that a virtual lab is better than no lab at all. It turns out that she was very pleased with the results. Sometime later she sent me an e-mail. She wrote, "Model ChemLab is a visually enticing program that the Florida High School uses to give our virtual students the opportunity to 'handle' objects and chemicals found in a chemistry lab. This saves us the large expense of sending out glassware and allows us to do lab activities with chemicals that are not able to be sent to the students. The students respond very well to the ease of use of the program, and they are very excited by the graphic interface." How could I argue with that?

Over time, more and more virtual schools have adopted Model ChemLab. I still feel uneasy about this, but I have to trust that teachers will use their own judgement when it comes to drawing the line between simulations and substitutions. The issue isn't whether or not to use simulations in education. I think they have a place in the curriculum. The challenge is to judge their appropriateness in specific cases. It seems to me that using simulations in distance education is appropriate when students really do need an alternative. I truly believe that they can learn more about labs doing simulations than they would from just reading about them. But we have to remember that they can in no way be considered a substitute for real-world experience. If a students is eventually going to major in chemistry, then he or she will have to work in a real lab at some point. On the other hand, we are currently working on a project for a nursing school in the States. Although nurses are required to take a basic chemistry course in their first year, they will not be pursuing their career in a lab nor are they particularly interested in beakers and Bunsen burners. They plan to work with people. In their case, I think chemistry lab simulations are most appropriate because it's understood that they are not substitutions for reality. At best, they are a more sophisticated and hopefully more interesting way to learn about how theory goes into practice.

As programmers of chemistry lab simulations, Joe and I have complete control over the virtual reality we create. We don't, however, have any control over how our simulations will be used in reality. Although I'm now convinced that Model ChemLab has a place in distance education and that it can enhance the studies of non-chemistry majors like nurses, I realize that there will be other unforeseen consequences in the long-term. I'm most concerned that teachers who adopt Model ChemLab to prepare students to perform actual labs will find down the road that administrators will see simulations as substitutions and will cut chemistry budgets to the point where schools can no longer afford the real thing. I hope this never happens. But I know that, in the wake of government cut backs in education, the temptation for some administrators will be too great. All I can do is trust that teachers who know the difference will protest. Yet I wonder what will happen if students who only use simulations go on to become chemistry teachers who only use simulations? Will they know the difference? If we are all living in the Matrix anyway, will it really matter?

*Mark Morley, is an engineer, co-founder of Model Science Software, and a lecturer at the Centre for Society, Technology and Values*
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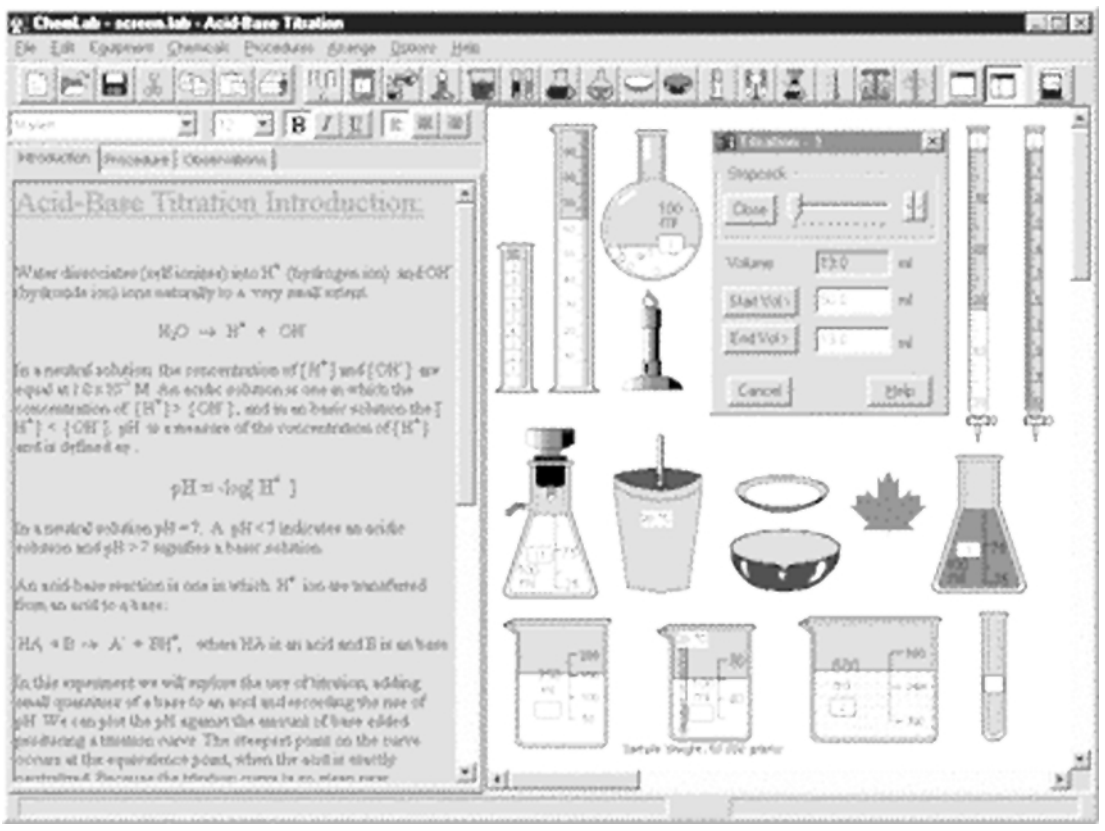


*Model ChemLab's Introduction to Acid-Base Titrations.*
*Illustration courtesy of Model Science Software*

# Skyrocketing Gas Prices Unjustified

**The Big Picture**

*Raymond ho*
*3A Mechanical*

Gas stations are doing business these days with their prices hovering around 75 cents per litre of gasoline. While there is justification for some price increases, the current prices are unnecessarily high. This relative nuttiness can be blamed on a few players in the oil industry, but the biggest culprits of them all, as always, are the gasoline companies. When closely examined, their pricing practices simply do not make sense. The prices at the pumps are not truly reflective of crude oil prices, and the enormous price increases of late cannot be accounted for by other factors.

When taken on a per litre basis, the increase in the price of crude oil does not justify the gasoline prices currently being charged. Crude oil currently costs about $32 (US) per barrel, up drastically from the low of $11 witnessed last year. Considering, however, that a barrel of crude oil yields approximately 159 litres of gasoline and converting to Canadian dollars, it is quickly calculated that a price increase of about 19 cents per litre is appropriate. Add this to last year's lows of around 50 cents per litre and the result falls about five cents short of the prices we see today.

In addition, it usually takes about one year for the price of crude oil to make its way to the pumps. The gasoline we buy today does not come from a $32 barrel; it came from a $15 barrel of crude oil. Hence the high prices at gas stations are not a direct result of the crude oil prices. Retailers set their prices not corresponding to how much they paid for the gasoline, but rather in response to current crude oil prices.

This would be an acceptable practice if done consistently. That is, it is okay to raise gas prices when crude oil prices rise, but gas prices should also fall when crude oil prices drop. We have seen however, that gasoline companies are not consistent in this practice. In February 1998, for instance, crude oil cost about $16 a barrel, which corresponded to gasoline prices of 51 cents a litre. In March 1999, however, the price of crude oil was even lower at $15, but the price for a litre of gasoline hit 58 cents.

Gasoline companies will argue that because crude prices have tripled since last year, gasoline really should cost $1.50 per litre. This reasoning, however, is fallacious because it neglects the fact that gasoline taxes, which are a major contributor to pump prices, have remained more or less constant. To herald a tripling of the cost per litre would also require a tripling of the gasoline taxes. This is clearly not the case.

In other attempts to divert public outrage, gasoline companies have been pointing fingers at others. It is true that 30 cents in taxes is collected by the government for every litre of gasoline sold. It is also true that OPEC (Organization of Petroleum Exporting Countries) decided to reduce crude oil production last year, thus raising oil prices while increasing their own revenues by 60% to $211.5 billion (US). Still, these effects are not great enough to warrant some of the abominable gas prices we have recently seen. The all too common "our hands are tied" attitude among gasoline retailers is quite infuriating because it is false to say that the they have no control over their prices.

Equally irksome are the claims of small profit margins at the pumps. At a time when gasoline companies are raking in large earnings, these claims are difficult to believe. Petro-Canada Ltd., for example, reported an earnings increase of over 240% for 1999.

What we see right now are gasoline companies trying to milk the price of crude oil for all it is worth. They are testing the limits of consumer trust and confidence. The gas companies want us to believe that they need to raise prices due to the price of crude oil. They want us to believe that the high gas prices are due to excessive taxes. While these claims do hold some validity, the fact remains that the numbers just don't add up.

We should accept that we must pay more for gasoline than in previous years. We should not accept, however, price increases that are unjustified and cannot be explained. Unfortunately, as long as the current structure of the oil industry and its treatment by the government remains intact, there is little that can be done.

# Chemical Engineering Student Conference

**CLEMENT LEE**
**3B Chemical Engineering**

Over a period of three days on the weekend of March 10th, the city of Thunder Bay was busy with chemical engineering action. The trip would cover the major chemical engineering industry in Thunder Bay, the pulp and paper industry. Two 3B students represented Waterloo at the interactive student conference hosted by Lakehead University.

The trip was an adventure from the start. From Hamilton, Benoit Joubert and I flew WestJet Airlines, a company that had it's first flight on February 29th, 1996. On Thursday, March 9th, WestJet had their first flight serving the East, travelling from Hamilton to Thunder Bay. We were on that flight. The morning started with free breakfast with the media at the airport. Then we were sent off on our flight by the president of WestJet, Steve Smith. On the flight, we shared champagne in celebration of the inaugural flight. There was also an in flight scavenger hike with prizes. People were given model airplanes, and WestJet shirts for having pictures of pets, 5 sticks of lipstick, knowing the inaugural flight date, and having holes in one's socks. On the way back from Thunder Bay, we had interesting stewardesses who were cracking jokes throughout the flight to ease any tension that one might have with flying.

***In celebration of the inaugural flight, we received champagne and participated in an in-flight scavenger hunt.***

After landing in Thunder Bay, we were greeted at the airport by Lakehead University students, who drove us to our hotel. After getting essential needs, we retired to recover from our flight. In the afternoon, we were woken by a phone call. The Lakehead students had made the effort to find our room and informed us that they were taking people to the on-campus bar. That night we explored the on-campus club with students from Ryerson and UNB. The Outpost is apparently one of the largest on-campus clubs in Canada, very similar to our own Fed Hall in layout.

Over the next few days, we were on a fairly intense schedule between tours and seminars. On the Friday, we started with a tour of the local Provincial Papers mill. By the time we finished the tour, we had met the rest of the universities that were represented at the conference: University of Alberta, University of Toronto, and University of Saskatchewan. There were several lectures lined up in the afternoon. The topics included financial planning done by certified financial planners (CFPs) from Investors Group; introduction to the chemical engineering mentoring program (which is being tested here at Waterloo) presented by coordinator of the mentoring program; the Lakehead curriculum that recognizes previous college experience and offers both a diploma and degree; and the keynote lecture on the future of chemical engineering presented by the president of the Canadian Society of Chemical Engineering.

The second day started with an intense study on sustainable development. The seminar was combined with a workshop, where students were debating with each other what could be done to help in preserving the environment. The results from the debating were presented the next day. The results from the workshop will be used in developing an overall plan within the society. The workshop will also continue at the next industrial conference in Montreal in October. It was a good feeling to know that our input is important and will be making a difference!

***The PEO is currently being questioned on its necessity... we will have to prove that engineering has to be a profession.***

In the afternoon, we toured local industry. Half of the delegates attended a tour of Bowater (a pulp and paper mill), and Neste (a chemical manufacturer that supplies the pulp and paper industry). The other half toured Ontario Hydro and Sterling Chemical (another pulp and paper chemical provider).

The closing day was sad marking the end of a very well organized, and productive conference with two lectures. The first lecture was a presentation by Bowater on sustainable forest management. Bowater had taken several different measures to preserve the environment at their own expense. The second lecture was another important lecture on the current issues of the PEO. The lecture was very in-depth and talked about the problems that we will be facing when we graduate. The PEO is currently being questioned on its necessity, whether or not engineering will continue as a profession. The President of the PEO was trying to show us how we will have to make an effort to prove that engineering has to be a profession. Another issue that was touched upon was the arising new industries, and the need for the PEO in those matters. The new industries mentioned were the software and biochemical engineering industries.

In closing, I felt that I had input on several important issues which are greatly affecting our society in the near future. It will be interesting to see where it will lead when Waterloo delegates attend the general chemical engineering conference in October in Montreal.

# Second to Last Rant

**Bitter? Me?**

*by D.J. Swan*
*4B Bitter Glorified Construction Worker*

Well, I have been in this town for almost 5 years now. I have had half of my work terms here as well. This week, we have been lucky enough to see some outstanding weather and everyone seems to be even more eager then usual to get patio season under way. I am just trying not to get weepy eyed when I realize that tonight might have been the last Bomber Wednesday that I could have spent on the patio.

During my first 2 years here, I did not spend a lot of time in the engineering buildings. I was convinced once by some girl named 'Spot' to go to some bar called 'the Brunny'. Ever since then my life has gone down an ever decreasing slope.

I have seen a lot during my adventures here and one of my goals for my last term is not to display too much of what I have described as "bitter 4th year" syndrome. I remember as a youngster laughing at whoever the 4th year was that happened to be bringing sweeping legislation through EngSoc. They were always laughed at or they had their motion completely ignored as soon as they have graduated.

I hope that everyone gets the most out of their careers as students. You can only do this once and as cliche as it sounds, it seems like only yesterday that I was a Dum Frosh who was sprayed with purple die and being yelled at to hurry my way through a mud pit...

Anyways, I hope that you appreciate everything that goes on around you. If you don't know what I am talking about, think about the fact that it probably took a committee of at least 10 people to decide what colour to paint the walls.

Just remember that the best AND worst part about student government is that it is run by students.

# Gradball 2000

**MATT LONGLAND**
**4B Computer Engineering**

When the tables were finally cleared away, the lights were turned down low and the DJ started to turn out the songs, the dancing began. People flocked to the dance floor to cut loose to their favourite songs. Even in their formal wear, there were several people who seemed to be looking for a split seam with their extravagant dancing. The songs changed from fast to slow to fast, back to slow, sort of sideways to swing then completely into left field with some country. Everyone was having a great time, then the TOOL came out! At first, all dancing subsided for a change to engage the TOOL and get a photo taken with the mascot. Then the dancing resumed while the TOOL bearers looked on.

Then to everyone's surprise, the TOOL began to dance! Can we say limbo? Hundreds of grads began to engage in one long limbo line. How low could the TOOL go? This event carried on for a while, then the TOOL moved on for pictures outside. People gathered to have their picture taken with their iron rings and their mascot.

The dancing continued on late into the evening. Past last call, right up until the lights came on. Finally, the last song finished, and the grads were left with a night of memories that would come back to them each time they looked at their photos (and there were a lot taken!) Congratulations to the Graduating class of 2000!


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*1. Happy grads around the dinner table.*
*2. Gradcomm co-chair Craig Turner.*
*3. Yearbook 2000 Editors with the TOOL.*
*4. The undergraduate ushers who helped the evening run smoothly.*
*5. Gradcomm with the TOOL.*
*6. Chris Foster, Kim Whitear, and Mike Hermann were three of the ten recipients of this year's Paul and Paula Plummer Awards.*
*All photos courtesy of Jostens*



Congratulations
to the Recipients
of this year s
Paul and Paula
Plummer Awards:

Ajay Badhwar
Alan Cannistraro
Vanessa Choy
Christopher Foster
Michael Hermann
Andrew Johnson
Michael Olley
D.J. Swan
Mitch Valentik
Kim Whitear

# Two Nights Left

**UW DRAMA DEPARTMENT**

Spring Awakening, written in 1890-1 is based, according to its author, on his own experiences at school and was written spontaneously and independently of any theatrical model. 'I started to write,' Wedekind tells us, 'without any sort of plan, merely aiming to set down whatever appealed to me. The plan emerged after the third scene and was compiled from my own personal experience or the experiences of my class-mates.' The story of the play features the suicide of a pupil who fails to cope with the exacting academic standards of his school, and the death of an innocent schoolgirl at the hands of a back-street abortionist, the victim of her own ignorance and her mother's prudery. Spring Awakening shocked the contemporary public, and it may well still startle audiences today with its scenes of pubescent angst, sexual outspokeness and its frank representation of adolescent love-both hetero and homosexual. The play was banned in Berlin in 1912, but its supporters found an unexpected ally in an enlightened judge of the Administrative Court who lifted the ban, and whose assessment of the play's merit is still valid, although the social circumstances which gave rise to it may have altered radically. 'The play,' he wrote, 'shows how the forces of real life affect innocent young people at the age of puberty, with particular reference to their own incipient sexuality and the demands made on them by life, and especially by their schooling. They perish in the ensuing conflict, because their appointed mentors, their parents and teachers, fail to guide them with proper understanding, because they are prudish and lacking in worldy wisdom...'

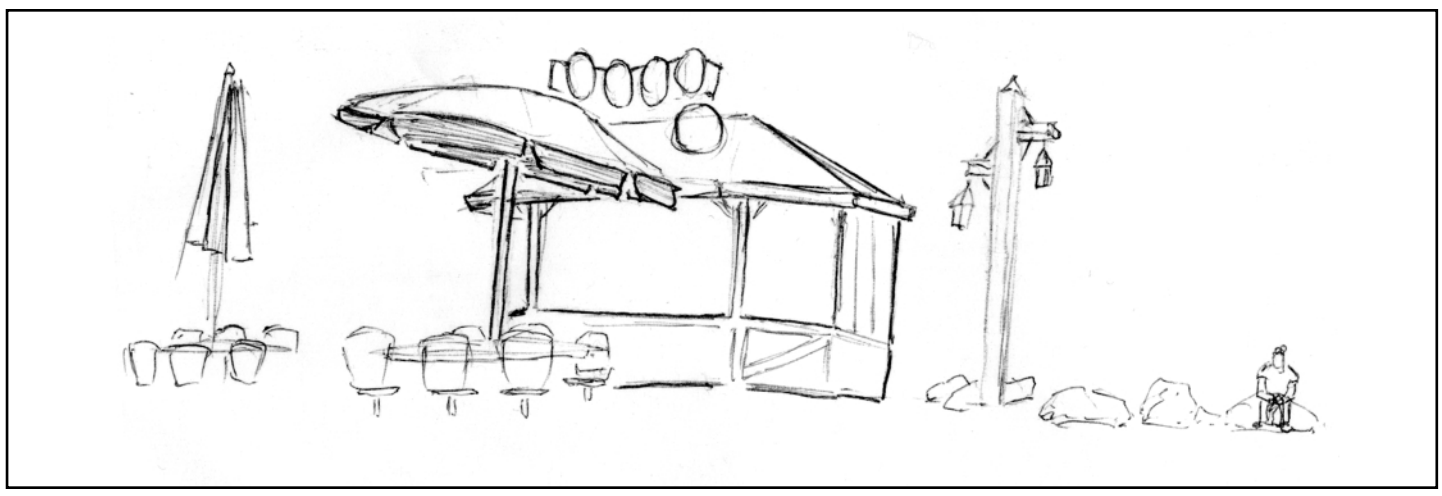
***SPRING AWAKENING***
***by Frank Wedekind***

***March 15-18, 2000***

***8 pm***
***Theatre of the Arts***
***Modern Languages Building***

The play is directed by visiting artist Darlene Spencer, set and lights designed by Robin Paterson, costumes designed by Jocelyne Sobeski and features a cast of UW students.

Tickets available at the Theatre Centre Box Office, Hagey Hall or by calling 888-4908. Ticket prices are $10 for general public and $8 for students and seniors

**Above: Angry Fishman, Jessica Gross, 3B Chemical Engineering**

**Left: Waiting at Wonderland, Ian Tien, 3A Computer Engineering**

# Museums to Cure the Winter Blahs

**JESSICA GROSS**
**3B Chemical Engineering**

As engineering students, we spend the majority of our time frantically doing assignments, labs, and reports, which doesn't leave a lot of time for us to get in touch with our creative sides.

One thing that we can easily do to get those juices flowing is to expose ourselves to situations that we don't see on a regular basis. Even though we've just been hit with another blast of winter, there are still attractions in the K-W area that students can attend to break the monotony of school life. And since we all know what a student's budget is like, I've tried to keep any possible costs involved with these ideas to a minimum.

There are 3 different museums currently open to visitors on our campus alone. The Museum and Archive of Games is located in B. C. Matthews Hall, and offers a variety of games on exhibit, ranging from ancient times to the electronic handheld games available today. While some exhibits have specific viewing times, the museum is open to the general public each weekday from noon until five.

The Museum of Visual Science and Optometry is located somewhat off the beaten path in the Optometry building, which is next to the Columbia Ice Fields. This museum houses various instruments used in the optometry field over the last 100 years, as well as a wide exhibit of eyeglasses from the 1700's to the present. The museum is open for viewing each weekday from 8:30 a.m. to 4:30 p.m.

Located on the second floor of the Biology building, the Earth Sciences Museum has displays on a variety of topics, ranging from dinosaurs, gems and minerals, to exhibits on local groundwater resources. It is also open during the week from 8:30 a.m. to 4:30 p.m.

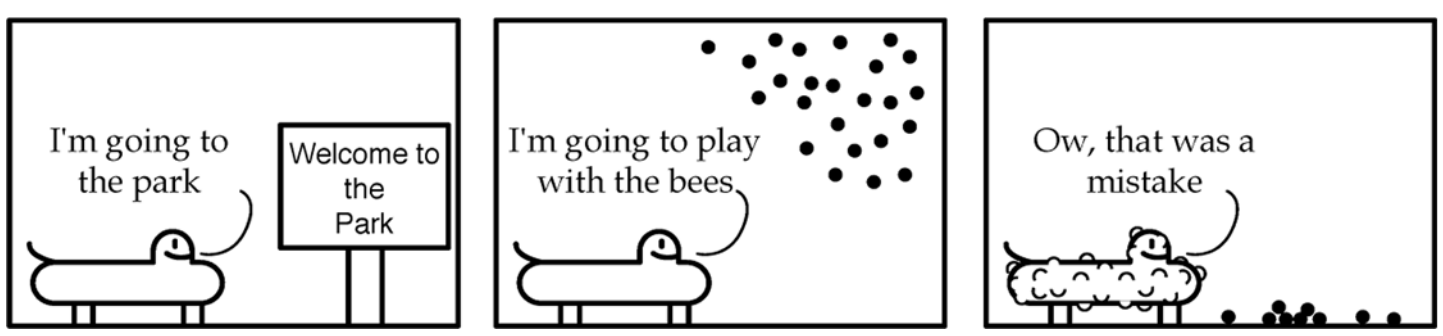
If these museums don't strike you as "art-orientated", there are other places you can go. For instance, the University of Waterloo Art Gallery is located in the Theatre of the Arts and has a number of exhibitions each year. In addition to its weekday hours of 11 a.m. to 4 p.m., it's open on Sundays from 2 until 5, so you won't have to worry about missing class to get some culture.

Last, but not least, the Artspace Gallery is located in East Campus Hall, and it displays the work of fine art students. It keeps regular business hours during the week, and is open from noon until 4 on Saturdays and Sundays.

Next Iron Warrior: culture outside the campus walls.

# Mutant Dog

***Story by Ryan Bayne***
***3A Computer Engineering***
***Art by Nick Wolfe***
***(c) 2000***

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# Capture the Hype!

**MATTHEW CHEUNG & CHRIS DECK**
**1B Computer Engineering**

1B Computer Engineering, THE HYPE, hosted the second cross campus Capture The Flag game on March 10th. Despite the rough weather, enough students braved the snow and ice that night and got the game rolling. It was an absolute blast.

In case you don't know, capture the flag is a game in which each team has a predetermined territory and have to try to steal the opponent's flag. The trick is that you can be captured in enemy territory and be held prisoner there if you are caught, that is, until someone comes to break you out. The unique thing about the game that night is that it was a four way game instead of the regular one on one. This, combined with the fact that it took place within the entire campus, lead to some interesting scenarios.

To get the place hyped up, HYPE members chalked up the entire campus with lines and logos that afternoon. Yes, I know it was snowing, but we never said we are really sane after all.

There were two teams formed from HYPE members, one from upper year engineers (team BACON that is), and one more from the mixed batch of mechanical, arts, and math students.

The game proceeded rapidly, and within 15 minutes, the combination team lost to one of the HYPE team and was forced to join forces with them. Shortly after that, team BACON conquered the other HYPE team. A furious contest between these two superpowers unfolded, with team BACON declared as the final victor after an hour of struggle.

With everyone all hyped up after the game, the closing ceremonies were conducted at Weavers.

This was a great event with lots of exciting moments, be sure to stay alert for the next HYPE Capture The Flag game, rumored to occur in Fall 2000!

# Views on CUTC

**RYAN BAYNE, AARON EGIER & SCOTT HAFEMAN**
**3a Computer Engineering**

The first ever Canadian Undergraduate Technology Conference took place on our campus March 8-11, 2000. The number of events, and classes prevented any one of us from attending the entire conference, the following is a short summary of some of the various talks and workshops that were presented.

While not an official conference event, CUTC kicked off on the Wednesday evening with a talk from Firoz Rasul, President and CEO of Ballard Power Systems. Presented by the 2020: Building the Future group, Rasul spoke about Ballard's efforts in replacing the existing combustion engine with a hydrogen based fuel cell. The fuel cell is significantly better than a gasoline engine, for both the environment, and power. Rasul also spoke about the benefits of working with, rather than against the automotive and fuel industry.

The next day, CUTC kicked off with a keynote by Susan M. Puglia of IBM Canada. Puglia spoke about the role that IBM is playing in e-business today. She talked about the possible uses of IBM technology inside a supermarket. For instance, tracking buying habits, and making recommendations and offering personalized deals on further visits.

The first set of small workshop sessions followed. Ka-Ping Yee, a Comp '97 grad from UW spoke about the possibilities of future developments in technology including nanotech, and human augmentation. While some people attended this due to Yee's job at Industrial Light and Magic, he chose not to speak about it and talked about what truly interests him.

Mike Lazaridis, President and Co-CEO of Research In Motion, gave the lunchtime keynote on Thursday. Arriving late for this keynote, we only caught the question and answer period. Many of the questions were focused on why students should consider staying in Canada, instead of leaving for the United States after graduation, in search of wealth. Lazaridis pushed the social benefits of living in Canada, and believed that the cost of living offset the pay differences between the two countries.

An afternoon workshop by Prabhakar Radge, Associate Chair for Curricula at UW examined the social impact of computing. He stressed the importance of evaluating the societal impact of technology before adopting it, and considering what is and what isn't a reasonable use of technology.

On Friday, the Technology Expo took place in Federation Hall. This allowed delegates to speak to a number of technology companies, in a less pressured situation than a job fair. The major sponsors attended, along with a number of local technology companies. It was a good opportunity to learn about new developments in industry, and possibly make contacts for future co-op jobs.

Bill Hawe, CTO of Nortel Networks spoke about the future of the Internet. Bill Hawe was one of the original developers of Ethernet technology and is now overseeing the development of optical networking at Nortel Networks. His talk focused on the growth of the Internet, and its structure in the future.

Brian Vink of Sybase presented the evening keynote address, talking about Sybase's technology, and how it is an important backbone of many other technologies. Their database technologies often serve as the hidden foundation of many e-business and data mining applications.

Finally, after a relaxed Saturday, the evening banquet was keynoted by Ian Goldberg, a UW graduate and Chief Cypherpunk of Zero-Knowledge Systems spoke about the role of anonymity in technology. Focusing on the concern of companies building up large profiles of individuals, he explained that it's easy to identify yourself on a system designed with anonymity in mind, but the reverse is much more difficult.

Overall, CUTC seemed to be well organized. Meals were quite good, although workshop registration was quite late. However, not all delegates attended every keynote, which at times gave the impression of poor attendance. However, CUTC was quite enjoyable, and hopefully will continue next year.

(Editor's note : Ryan works for Nortel Networks, Aaron works for RIM)

# Taking Better Steps

**KAREN HAWTHORNE**

Like many of us, Alan Morris, P.Eng., watched the heart-wrenching journey of Terry Fox on television, as he attempted to run across Canada to raise money for cancer research. For Morris, though, it sparked an interest in developing a better artificial limb to help kids with disabilities become more agile.

That's why he decided to become a biomechanical engineer. Recently, he developed the prototype for a lightweight, flexible, compact prosthetic limb, which he's tested on kids at Toronto's Bloorview MacMillan Centre, a research and rehabilitation centre that specializes in assistive technologies for people with disabilities.

"I'm sure I'm like any engineer with their first device, having someone try it out," says Morris, a Thornhill resident and new dad. "It's interesting working with a prosthetic limb because it's a body part. We tested it on one child, who was quite interested in it. It was lighter than what she had, allowed her to do a bit more, but it wasn't quite good enough to be a final product, so there's a lot of trial and error."

As a research engineer in the centre's Gait Laboratory and a doctoral student with the University of Toronto Institute for Aerospace Studies (UTIAS), Morris continues to redesign the prosthetic limb with the help of graduate students on placements at the centre. His latest project is a collaborative effort with UTIAS, the university's faculty of medicine and the Bloorview MacMillan Centre: robotics research to determine the best surgical techniques for kids with cerebral palsy.

Children with cerebral palsy have been deprived of oxygen for a short period at birth, resulting in impairment of their motor control system, Morris explains. Signals from the brain to the muscles don't function properly, so movements like walking are difficult, resulting in stiffer joints, limited range-of-limb movement and less stability. A common procedure to help correct these problems is to surgically alter muscle and tendon lengths. Enter Morris, who convenes with surgeons on the be orthopaedic technique to use. To help make these decisions, he's customized a computer software/hardware system to analyze quantitative data on the "robotics" of walking.

"What we're trying to do is develop a computer model of the body in terms of muscle and bones," he says, hooking up cerebral palsy client David Heller, 7, to a host of coloured wires. David takes small steps along a taped floor line, as software processes information on his body movements.

The idea is to use the software to recreate a child's movements, Morris explains, encouraging David to repeat the exercise. The computer model can then be used to rotate bones or move muscles into different positions, to see how these changes would affect a child's walking - indicating what type of surgery would be the most beneficial.

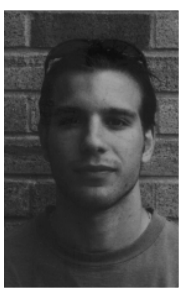
A child like David may have at least five surgeries to lengthen or replace muscles. So far, Morris has collected the data - before and after surgery - on several children, so the project is in the home-stretch.

"It's challenging putting engineering into physiology," he says. "I'm hoping we can use biomechanics and movement analysis to help predict what surgeries and therapies will benefit kids. That would be great," he adds with obvious enthusiasm.

He says that, if all goes according to plan, the computer modelling system will provide parents and kids with the peace of mind of knowing with certainty the results of surgery.

Reprinted from *Engineering Dimensions*, 2000, Volume 21, No. 1, page 29, by permission of the publisher.

# WEEF Still Exists!



**VP Finance**

*Sunny Sodhi*
*3A Systems Design*

Hi everybody. Sorry there hasn't been a lot to say about WEEF recently. However, two presentation meetings were held this week, and the Funding Council Meeting is on the 23rd of March. Look for the break down of how your WEEF money is being spent this term in the next issue of the Iron Warrior!

# Political Monkey Crap

**President**

*Ian Tien*
*3A Computer*

There was an article in the National Post <http://www.nationalpost.com/news.asp?f=000311/230221&s2=world&s3=observer> recently about how some professors at the University of Waterloo disapprove of the increasing level of bureaucracy at our university.

Waterloo used to be a place where anything could happen, a place where you could innovate, where you could say what was on your mind without worrying about the opinions of bureaucrats and "committees".

It's true and it's sad. You talk with some of your professors who've been at Waterloo for a while, and they'll tell you the same thing. We used to be fast and flexible, now we're bogged down with a politics.

After reading the article, I was curious as to how tightly confined we were to the shackles of political conformity. In the interest of science, I'm thinking of conducting an experiment.

Maybe in every issue of the Iron Warrior, I'll incrementally increase the level of questionable content in my articles. Then we could document the complaints I receive from various people at the university and we'd all gain some insight as to how things really work around here.

The benefits of this experiment would be threefold. 1. We would quantify the level of tolerance for free speech at Waterloo. 2. Iron Warrior readership would increase. 3. We could bring the university's bureaucratic structure into the public light and get rid of some of that political monkey crap everyone keeps complaining about.

In general, university-wide policies suck. Yes, it's important that we have checks and balances to make sure people aren't mistreated, but is a telephone book of legislation the best solution we can come up with? It's like you're treating people like criminals as soon as they arrive. "Welcome to Waterloo, here's a list of things you're not allowed to talk about and here are the consequences you will face if you say anything we don't approve of."

Whatever happened to basic human decency? The idea that people are innately good when you leave them be? Moreover, if someone does something wrong, doesn't it make sense that they be judged by their peers in their faculty, rather than by some arbitrary panel of "I'm too cool" committee members.

Waterloo has come a long way in 43 years. If we're going to keep growing, we have to be flexible and we have to be tolerant of different ideas.

People who make policies have to be held accountable for their decisions. If not through the democratic process, then at least their actions should be visible to the public. There are people at this university who get away with murder when it comes to getting their policies approved.

And you know what? That's monkey crap.

# Everything's Great!

**VP External**

*Micah Potechin*
*3B Systems Design*

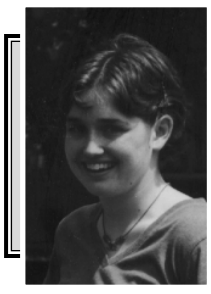
There are three difficult things that go along with writing an Iron Warrior article every issue. The first one, as I noticed in the column I wrote last term, was coming up with a topic. This term, my topic is covered: it's the VPX report. Easy. The second thing is coming up with an opening paragraph each issue. As you notice by today's ramble, I've managed to come up with one for this report. The third, specific to this term's IW articles, is keeping track of which events have already happened, and which ones have yet to go on. Since I write the article the week before it actually gets seen by anyone, sometimes it's tough to remember what is happening when.

Two conferences: happened. FYIC was on March 3rd-5th, and was a great time for the frosh who accompanied me and for myself (see the article on page [1]). CUTC was another conference that happened since the last report, and was well attended by many people at this school and others. Large events: happened. Bus Push raised over $2000 for Big Sisters of Kitchener-Waterloo, and attracted 50 dedicated engineers to pull a bus down to Kitchener city hall. Here's the trouble: see, as I'm writing this, Explorations and Campus day have yet to happen, but I have to write about them as if they did happen. Anyway, Explorations and Campus day were both grand successes, as they always are. Thanks to everyone who participated in all three of these events, and congratulations to the coordinators.

Things to look forward to over the next few weeks: May 5th is a FREE day at Canada's Wonderland, where engineering students help high school students by helping teach them about the physics of rides, and judge some grade school design competitions. Send me an e-mail if you would like to join up, or if you would like more information. On campus, Women In Engineering is hosting a wine-and-cheese on March 22, so keep your eyes peeled for more information on that.

Until next time, feel free to write me at <mipotech@engmail> with any questions or comments, and remember how tough it is to write these reports issue after issue.

# Forum Results



**VP Education**

*Jenn Motuz*
*3B Mechanical*

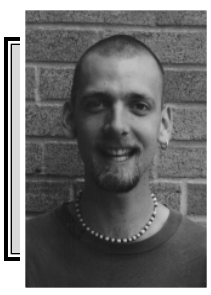
First off, thank you for your participation in the debt-load surveys. I got 500 in by the deadline, which is awesome, and am still compiling results. Dean Chaudhuri is pleased with the number of responses and thinks that the results will really help him in the tuition meetings. The results will be released in the next IW issue.

The tuition forum was a success, with people from nearly every discipline present. The students asked some very pointed questions and there was a really good discussion about reasonable debt-loads, access to funding, and alumni contributions to engineering. In response to a question on the availability of funding, I am putting together a bursary FAQ for the upcoming term to give people information on how to apply. Since 30% of our tuition goes into this fund, it is in our best interest to apply for this money, so keep your eyes out in September.

Another thing that came up was the question of differential tuition for correspondence courses. This was discussed at the forum and the response to our complaint, while unpopular with a lot of people, makes sense. The difference in this tuition is $40 for a course, which is not an enormous sum of money. The way the system is set up, we (as engineering students) will always be charged the differential fee for correspondence or non-degree courses regardless of the department, and this is unlikely to change. There is a flipside: many students take extra courses on their school terms, and these courses are free because of our tuition structure. As a result, if the ratio of people taking extra courses at school to those taking non-engineering courses by distance education is 1:10, students still come out ahead overall. Dean Chaudhuri pointed out at the forum that while this is an unpopular decision with the students, there are more important things to focus on, like making sure the differential tuition we pay comes back to engineering. Dean Chaudhuri is really working for us in this respect.

On a happier note, there are a lot of scholarships with deadlines due at the end of March. Check the student awards page (http://www.adm.uwaterloo.ca/infoucal/AWARDS/)to see if you are eligible for any of them.

# Mmm... Patio Season



**VP Internal**

*Ian Pollock*
*3B Mechanical*

Well, it's nearing the end of the term, and as has been the case so far, there's quite a few things going on. First of all, a reminder to all frosh leaders of the session on March 18th, and the festivities to follow are for everyone, brought to you by GradCom 2001.

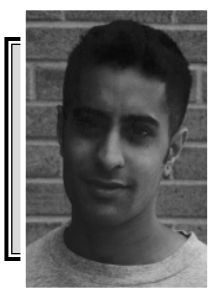
As well, there's the upcoming rugby tournament and paintball on the 25th. The 26th of March marks the second wheelchair basketball tourney. There's a minimum fee of $40 per team, with all proceeds going to Participation House. Come challenge Team Bacon for the highest pledge total, and a bunch of 3B Mech rowdies for the title. Get your teams in for both tournaments, they're both a lot of fun. At the end of March is the EOT. Come out to POETS and give a farewell salute to those annoying 4th years with their shiny new rings. Geez, I'm getting all emotional here.....

As for your new GradCom 2001, we've had our first meeting, and filled almost all of the positions. If you want to get involved, talk to the co-chairs for our society, Mike Muffels and Laura Edwards.

Any questions, just look for me, Harry. I'm the guy with the snake on his face.

Adios.

# Cheques Ready



**VP Finance**

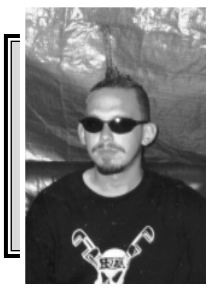
*Sunny Sodhi*
*3A Systems Design*

Hello, I hope your term is going well. I also hope that mid terms treated you all well. Over the past week I had a lot of time to spare and so I got caught up in all of the finances. So now the cheques that all of you have been harassing me about are ready in the EngSoc Office. All of the directors have been good about keeping within their budgets so far. Keep up the good work!!!

My office hours are Thursday @ 1:30 to 2:30 and Friday @ 1:30 to 2:30. (If I am not in the Engsoc Office during those hours, check in POETS) My email is gsodhi@engmail.

Good luck with this term and have fun.

# Ich Bin Wiener



**No Fixed Address**

*by Jasen Higgins RINGed*

While enjoying a weiss wurst and really big beer at the Hoffbrau Haus in Munich, one of those strange coincidences happened that make traveling a wonderful thing. Remember the great bunch of Aussies that we met in Prague? Well, we were enjoying the aforementioned beer when, who should show up? The very same Justin and Dave, we had met days ago in Prague. We had no idea that they would be there, it just so happened that we were in the same place at the same time. This sort of thing happened more than you could imagine... which leads me to believe that Europe is smaller than Canada (Oh, wait...)

TWO WHEELS AND WOBBLY Before you leave Munich, be sure to go on a "Mike's Bike Tour". Mike is a great guy and the guides are pretty cool. The best part, however, is after you stop at the bier garten for the second time, the Americans start falling off their bikes. It's really funny. And, for all you science and engineering types, the Deutsches Museum is a DO NOT MISS. Yeah, I know you'll be sick of museums, but this one is worth a visit. They have some really cool demos, particularly in the high voltage area. No kidding, plan to spend the day.

*A chance encounter with the Aussies at the Hoffbrau House in Munich.*
*Photo courtesy of Jasen Higgins*

TRAIN RIDE FROM HELL The journey to Budapest started off innocently enough. We had just come from the Hoffbrau house when I ran into an old high school friend on the platform of the Munich Hauptbahnhoff (main train station). Our rendezvous was cut short when creaking and groaning began emanating from the train and I assumed (ASS-U-ME) that it wanted to leave. So, we parted company and I hurried off so that I could spend the next eight hours sitting in the bloody train station.

That evening, in other parts of Europe, there had been a windstorm. Trees and branches had been knocked over the tracks, putting them temporarily out of service. But all we knew, from the conductor's broken English that there had been a hurricane and that we'd be a while. Our troubled sleep in the train station was punctuated by unintelligible announcements that we strained to hear in case something was said about the fate of our trip. To our surprise and amazement, the train started to move about 7a.m. and we were finally on our way. This was only the beginning, however, as we were now an unscheduled train on a track filled with other on-schedule trains.

Now, this was meant to be an overnight trip so there was no dining car. And although the train did make stops, you never knew when it would get clearance and take off again. As a result, we were too afraid to leave the train and eat, bathe or get money. At about hour 19 of this supposed 8-hour trek, I broke down and spent about $5 Cdn for a Mars bar and a Fanta that was to be my breakfast, lunch and dinner. Finally, after approximately 23 hours on the rails, we arrived at our destination of Budapest.

WHEN TURKEY GOT HUNGARY From the years 997 to 1038, King Stephen of the Árpád dynasty ruled the country we now know as Hungary. He converted to Christianity in the year 1000 and encouraged his subjects, by force if necessary, to do the same. This, in the end, proved to be a great asset to the burgeoning country as its heathen neighbours disappeared during the crusades and were never heard from again. Home to the largest Parliament buildings in continental Europe (Westminster is bigger, but not technically continental) Budapest has a wonderfully rich history, architecture and style. The city of Budapest is formed by the combination of the cities of Buda and Pest, which are separated down the middle by the Danube River. The city of Pest still has traces of its Turkish heritage as the Turks occupied it for 150 years beginning in 1541. So now you know that it's not to Turkey where hungry Hungarians go, but the other way around.

*The beer carrying excellence of the Hoffbrau house waiters.*
*Photo courtesy of Jasen Higgins*

BACKPACKER'S BUDAPEST Our weary bodies and spirits were immediately refreshed in Budapest and this was in no small part due to our accommodations. We stayed at the fashionable Backpacker's Hostel, another out-of-the-way place that is worth the bus ride and WELL worth the $5 a night. Just like the Boathouse in Prague, people tend to go out together and enjoy each other's company when staying in. They have a kitchen but you must be careful to label you stuff carefully or some American nogoodnik will steal your frosted flakes.

Like Prague, Budapest is also very inexpensive. The staff at the hostel can suggest some great places for a typical Hungarian meal... and make sure you're Hungary (pun intended). There is also a fantastic nightlife and after an evening of lechery and ribaldry, there's nothing better than discussing Quebec politics with Pascal from Montreal until 5:30 in the morning. And following that, there's nothing better than spending two and a half hours crawling beneath tons of limestone.

Beneath Buda, there lies literally kilometers of natural limestone caverns that truly must be seen. The hostel runs caving excursions every few days and unless you're a certified claustrophobic, you MUST SEE the caves of Buda. In our group of twenty, nobody got stuck (Mike came close), nobody freaked out and everybody had a totally amazing time. Again, do not leave Budapest without going caving and likewise, do not leave without seeing the Hungarian baths.

*The Chain Bridge and Imperial Palace of Budapest.*
*Photo courtesy of Jasen Higgins*

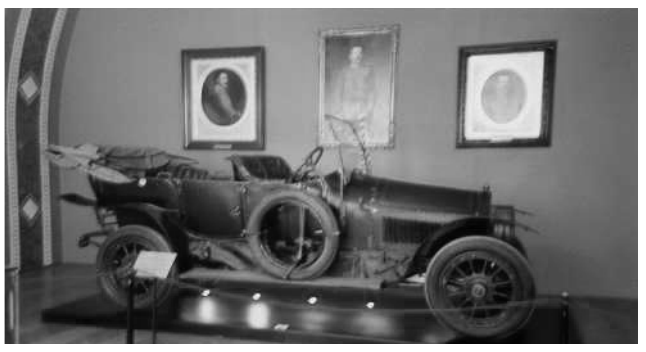
*Any trip to Budapest must also be accompanied by a trip to the Hungarian baths. Yes, there are far too many naked men but hey, it's no worse than any locker room. Besides, it's a great thing to do after caving... skip the massage, however, if caving has left you particularly bruised. The massage feels like a good once over with a bag of doorknobs. Oh and be sure to bear in mind that the slapping of your ass is the signal that the massage is over. It's not because Vlaclav has taken a shine to you.*

And so it was, spent from our vigorous caving and bathing, that we left for Vienna and its world-renowned opera. Now, the Vienna experience worked out particularly well as the parents of a friend of mine work for the UN in that very city. Our accommodations were beyond compare as we were allocated an ample spare bedroom with all the amenities. But don't let me bore you with my newfound enthusiasm for a clean, private shower.

*Vienna itself was very cool... lots of great sights. Today we saw the car and uniform belonging to Franco Ferdinand... of course, he's the guy that got assassinated to trigger WW1. Anyhow, that was very cool, as was the opera we saw the night before. Naturally, the opera was all in Italian but we read the synopsis before had so we kinda had the gist of what was going on... well, mostly. Note for next time, however... shorts, though they be nice shorts with a button up shirt does not constitute opera attire... even for the 30 shilling (3$ approx) standing room area. Jeans and a T-shirt work better here... and if you are unwise, like myself, you will have to run home and get some proper clothes.*

The Vienna opera is really something else. Making it even more incredible is the fact that there's a different show on just about every night. All the magnificent sets are moved in and out every day with the ever-present big grey cube vans seen moving through the city core.

Austria has seen many generations of political and social turmoil dating back to Turkish invasions in the middle of this millennium. Even today, nationalist and separatist sentiments shake the foundations of this multi-ethnic state. On the whole, however, Vienna is a very cosmopolitan city and in places like Schönbrunn Palace you can still detect traces of the once mighty Hapsburg Empire. That concludes our history lesson for today.



*Archduke Franco Ferdinand's car.*
*Photo courtesy of Jasen Higgins*

Oh yes, "Ich Bin Wiener" means I am Viennese. Contrary to popular opinion, I am not a wiener.

*PSchönbrunn palace, the summer palace of the Hapsburgs.*
*> Archduke Franco Ferdinand's car.*