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# the IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY

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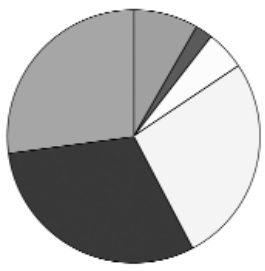

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Creative Spirit Unleashed

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*Dean Sedra collects over $130 donations walking through engineering on March 17th to support "Team UW Engineering" in the Super Cities Walk for Multiple Sclerosis.*

## Supporting the Fight Against Multiple Sclerosis

*Christine McCullough*
Captain, Team UW Engineering

After the two week long food drive for the Food Bank of Waterloo Region, the food collection bin with Dean Sedra's name on it clearly had the most items of non-perishable food items. What did this mean to Dean Sedra? Well, that he had the honour of promoting the next charitable event that the Engineering Society is participating in, the Super Cities Walk for Multiple Sclerosis. So, on Wednesday March 17th, St. Patrick's Day, our Dean held true to his word and helped raise awareness and some money for the walk. Wearing a green tie for the occasion, Dean Sedra carried the rather large sign to a number of engineering classes asking for donations to Team UW Engineering. It's hard to say whether it was the beautiful sign masterfully made by one of the walk directors, or the fact that the Dean was carrying it that made the message so clear. Either way, within one hour Dean Sedra and his escort had collected over $130 for the MS Society. Added to the funds raised through the Bus Push and money collected through the C&D, Team UW Engineering has raised over $1550 for the Super Cities Walk for MS. Fantastic!

However excited we may be about our progress so far, we still have a ways to go. So, we need your help. Next time you go to the C&D, put your spare change in the donation bin by the cash register. Pledge a team member if they ask, any amount helps however small it seems to you. If Dr. Steve Lambert is one of your professor's, I know he is looking for support; if you are in systems design, head over to the graduate office and pledge your support to Vicky Lawrence. If you don't know of anyone on the team, walk yourself over to the Engineering Society Office (CPH 1327) and make a pledge to the team. Remember, it all adds up, so if everyone does what they can, we can make a real difference.

## Jack Layton Visits

*Christopher Porter*
3A Software

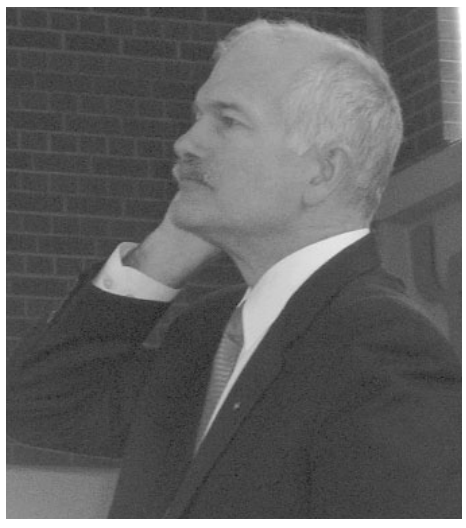
On Wednesday morning, the SLC played host to a strange mix of people. As St. Patrick's Day festivities were starting, Irish revellers arriving for the "Beat the Line Breakfast" at Ground Zero were quickly overwhelmed by a mass of students and community members coming to hear Jack Layton, leader of Canada's New Democratic Party (NDP), outline his vision for Canada.

If you happened to wander through on your way to classes, you might have marvelled that so many of your peers were getting into the St. Patrick's Day spirit. Taking a closer look, you would have noticed that surrounding the guy in green leggings with the sequined green hat (I loved the outfits by the way) were people sporting orange NDP buttons and "JACK!" stickers.

A standing room only crowd filled the Great Hall and greeted Jack's arrival with a raucous round of applause. The former Toronto city councillor and lifelong activist spent most of his time outlining the NDP's policies on the environment, transportation, education, and missile defence - issues he will be using to differentiate the NDP from the other parties in the next federal election. Jack, who asked to be referred to by his first name, also had time to answer a few questions after his speech.

Jack has taught university courses at Ryerson, York, and U of T, but admitted to being a secret fan of the University of Waterloo. Waterloo was one of the first universities to champion environmental causes, an area he feels very strongly about. With climate change creating problems that are "impossible to exaggerate," Jack said it is up to Canadians to act now. He stressed that the technology is available today but government policies were needed to encourage their use. The government subsidizes fossil fuels by 1 billion dollars per year, money he would rather see spent on renewable energy sources like wind and solar.

Jack encouraged young people to get involved in politics. People over the age of 80 are 5 times more likely to vote than those under the age of 25. Jack claimed that the youth often have the best ideas about the future and are the ones that have to live with the decisions made by politicians today. He pointed out that Canada is at a point now where we can make a change and we should be deciding what vision we want for the future.



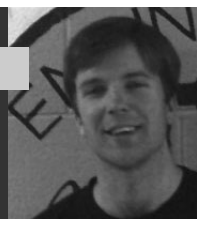
Jack tackled transportation issues and what he referred to as the "Walmartization" of cities, in which you cannot even buy a litre of milk without getting in your car and using a litre of gas. He would like to see a portion of the federal government's 10 cent-per-litre gas tax directed to public transit. In addition, he supports GST rebates on hybrid cars and the implementation of a green car industrial strategy.

As Jack's talk shifted toward education, he took aim at Prime Minister Paul Martin and called him a hypocrite for paying off Canada's debt by forcing students to shoulder increasing levels of debt to pay for their educations. Jack emphasized the NDP posi-

*Continued on page 11. See "Jack Layton in the SLC."*

***We make a living by what we get, we make a life by what we give. - Sir Winston Churchill***

# Letter from the Editor



*Jeff Henry*
*4B Computer*
**Editor-in-Chief**

As is typically the case, writing this letter is the last thing I am doing for this issue. However, this time it is different. While every editor of this newspaper has certainly faced the emotions surrounding this final part of the job, it is always that much more difficult when this letter is the last article they will write. Though I completely expect to contribute again over the coming year, the context of FEDS VP Education will be far removed from University of Waterloo engineering student.

At the same time I leave the Iron Warrior in the capable hands of Andre Beltempo, I also say goodbye to the Engineering Society. As Maria points out in her column on page three, there should be more to everyone's tenure here than just academics; after all, these four and two-thirds years, if not more, are part of your life. For me, these two organizations have been my life's blood for at least the last two years, and so it is not without sadness that I make my exit.

Over the last five years, I've met some of the most talented, most diverse group of people in these halls. Challenging any conception of student apathy and the traditional academic-centric image of UW computer engineers, these individuals have gone the distance for EngSoc, for the Iron Warrior, and for WEEF. More importantly to me, they've provided needed perspective and wisdom during the numerous long project nights, on co-op, and anywhere else when I've needed it. Some of them don't even know how much of an influence their leadership on all of these fronts have been.

I will never forget picking up the second issue of the Iron Warrior back in the winter of 2002 after the graduating Civil took home first place in GNCTR. The team's name, the "Doozers," formed the basis of editor's letter in that issue. Speaking about Jim Henson's TV show, Fraggle Rock, she said, "Now, here's the thing. What originally appears to be a child's television program is much more than that. It is a reflection of modern day society. There are two types of people who exist in this world: those who exist to work towards their life goals (Doozers), and those who attempt to achieve their goals, but get side-tracked by the more appealing facets of existence.

"After the last issue of the Iron Warrior was sent to the printers, a classmate asked me why I chose to be editor. She saw me, tired and overworked, and wondered why I made such a decision, even though I knew beforehand that I would be taxed. To me, the answer seemed simple: I enjoy what I do, and I firmly believe that my work makes a difference - if only to entertain, inform and amuse. It may take away from my homework, social and sleep cycles, but it is still rewarding and fulfulling. Ask any previous editor, and they will probably say pretty much the same thing.

"It wasn't until a couple of days later that I realized something - I was a Doozer. I then stopped to think a bit more, and again realization hit me: I wasn't really a minority in this place (UW Engineering). As Engineers, we often face the problem of not having enough time. We are known to "live in the lab", and to exist on a combination of coffee and power naps. Even so, I cannot count the number of people I know who still take more upon themselves.

"Recently, people have started to talk about the growing trend of student apathy. Now, I'm not sure I believe this. I look around me, and I see two types of people which I named earlier: the Fraggles and the Doozers. There are the fresh faced first years who readily jump into anything Engineering can offer them. Across from the WEEF lab, there is the extensive list of names of people who have signed-up to interview for Teaching Assistant positions. There is the Graduation Committee - I see them in CPH foyer everyday, selling tickets and pizza. There is the hardworking EngSoc Exec. There are the FEDS election candidates, each with his or her own long list of experiences. There are the exorbitant number of people who have contributed to this issue of the Iron Warrior (thanks guys!). The optimistic note: there ARE people out there who work diligently to achieve their goals. And now for the less optimistic note, there are still some Fraggles hanging around out there. Now, I know midterms are coming up, and then project, finals, etc.; however, I still want to suggest to everyone to do the following: take the time to do something for the betterment of society. A couple of suggestions that I have are: join the 30 hour famine (http://www.30hourfamine.org) or volunteer at the food bank.

"Thanks and acclamation should go out to all the people in this world who epitomize the spirit of the Doozer. Without your hard work and dedication, where would we be?"

Looking back, I never imagined I would be the FEDS election candidate with a "long list of experiences," nor did I think I would bother being a leader in another frosh week, let alone applying to run one.

But the concern many of those graduating now is what will happen in the fall, in the vaccuum left behind with the graduation of the class of 2004. The answer, of course, is not that it will be filled by apathy, for UW engineering is not full of Fraggles. It is, however, full of engineers who need to be convinced that anything is worth finding time to do.

I encourage the executive to pour effort into the classes early on in September, and not only into the first-year classes. They need to hear how rewarding involvement can be, how time management, leadership, and teamwork can be learned through living better than it can be learned through textbooks.

This past Tuesday, the university launched the public phase of "Campaign Waterloo: Building a Talent Trust" in order to raise needed money for scholarships, among numerous other needy projects. But more important than dollars are the students UW has been recruiting for decades. Having lived among the class of 2004 and walked the halls with classes before and, now, after, I can tell you that Waterloo is home to the *potential* leaders of tomorrow. The key, though, is to turn that energy into reality, to get involved, whether it be through newspapers, EngSoc, student teams, FEDS clubs, or athletics.

Academic do need to remain important, because that is a big reason why each of you are here. But, as former Dean Chaudhuri said last summer, "I have always felt that studying and extra-curricular activities go hand-in-hand. They actually feed off each other... Getting high marks is not the end of the story, it's just the beginning. What you do beyond your marks is what defines you as different from others."

Whether you have one year left or four, try something different, something new. Seek interests outside academics and you'll find better value in the education you're paying through the nose to receive.

*Questions? Comments?*

*We welcome letters and feedback from all our readers. Please email us at:*

*iwarrior@engmail.uwaterloo.ca*


the IRON WARRIOR

*The Newspaper of the University of Waterloo Engineering Society*

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Letters

# Dear LowRider: UW_LowRider@hotmail.com

## No LowRider Till... [guitar riff] September!

*LowRider*

**3B Chemical**

Hey LowRider,

I read your interview with the FEDS presidents. I have to say, Wow! If you had run for FEDS president, I would have voted for you. So my question for you is, when you run for FEDS president next term, what will your platform be, and who will you get to interview you for the Iron Warrior?

-Curious George

Dear Curious George,

Thanks for your letter. The whole electoral process seems kind of boring (and it's been done to death, if you ask me), so I would much rather be appointed in a bloodless coup. My best guess is that at least 87% of all UW students are big LowRider fans, so we should easily be able to overpower the few hundred people who actually cared enough to vote in the FEDS election, and then noogie them into submission. Some of the key points to my platform will be: replacing Imprint with a weekly-all-LowRider-in-colour newspaper; reducing tuition by putting ads for cigarettes and Coke all over the place; making all Profs and TAs pass the ELPE; and I think it would be pretty cool if we had some kind of a team of students to design a solar-powered race car.

As for who would interview me for the IW… I would let whoever had the highest entrance average do it, just so that I could take them down a few pegs. Or whatever, maybe the deposed FEDS president at the time can do it.

-LR

Hello Sir,

Today i visted your link. I am sorry to bother you. I am single and looking to be a beautifull bride. I am Sharma, 24years, 5'-6", 115. I am working in Mumbai since 2000. I will be greatfull to you if refer me a suitable match from your known circle.

Thanks and regards,
Sharma Mahesh
190 Princess Street, 4th floor
Mumbai 400002
Mobile: 91+022+ 9819079344

***"To get to your question, I'm by far the coolest person that I know, so anybody in my known circle would just be a bitter disappointment to you."***

Dear Mahesh,

I'm never bothered by hearing from female LowRider fans, especially from as far away as Mumbai, which sounds really far away. To get to your question, I'm by far the coolest person that I know, so anybody in my known circle would just be a bitter disappointment to you. Unfortunately, I'm not really looking to start another long-distance relationship right now, and 5'-6" is a little tall for my liking. But if you're coming to Waterloo anytime soon, and you want to let loose before this wedding of yours, then look me up.

-LR

Dear LowRider,

You know how they say a masters is better than a bachelors? Well, about a year ago I made a bachelors diploma from The University of West Dakota on my snazzy printer, and then came to Waterloo to go here for graduate studies so that I could skip a step. I squandered my research money on beer, spent all my nights at Roxxanne's, marked assignments arbitrarily, and then plagiarized my thesis from an old copy of OWL magazine. I also put the moves on my supervisor's wife while he was at some conference. (No dice.) Should I quit while I'm ahead, or risk it all and try to get a doctorate too?

-Super Fraud

Dear Super Fraud,

Usually, I'm a big advocate of quitting anything, especially while you're ahead. Lots of people would say that you can't fake your way through life, but those are mostly people who are too stupid to even try faking stuff.

But, you've made it this far. And it would be cool to have a pH-D. And you get way more squandering money as a pH-D student. I say go for it. Some advice you might find helpful: Get a Prof with hot daughters to supervise your pH-D, because they'll be way more receptive to your advances; and "consult" a more high tech magazine for your thesis, like Scientific Geographic, or Toro.

Good luck!
-LR

PS: Can I work with you for my fourth year project?

Dear LowRider,

I don't know what I was thinking. Dude, your column kicks ass!

-Name Withheld

Dear Name Withheld,

Yeah, I know. There will be more of the same in September.

-LR

Dear LowRider,

We're so excited that you published our letter last week! All the fans here at the clubhouse think it was awesome. We have a very important question - if there was one thing you could make the President of the Engineering Society do, what would it be?

Your Fans,
-Virginia, Joy, Kristen, and Jennifer
(Cheerleader, So and So, What's Her Face, and Ugly One)

P.S. Will you do a centerfold in the Iron Warrior so we can hang it in
our apartment?

Dear LowRider Fan Club Girls,

Last issue was after a pretty slow week for letters, so I was kind of stuck printing yours. It's nothing personal, but I usually prefer to print real questions rather than just letters extolling my many virtues. There's not enough room for all of those.

This time, however, you have a question – and of course I have the answer. Well, if I could make the President of the Engineering Society do anything, it would either be to get me exempted from my exams or buy me 20 drinks at EOT. Those are kind of selfish, I know, but I would probably share the drinks with some fine ladies, which would in turn be good for the morale of engineering as a whole.

To tell you the truth, there was supposed to be a glossy, colour insert of me in the last issue but a suspicious squad of teen girls broke into the IW office and stole them all. (That's what they told me, at least.) Until this situation is cleared up, get a poster of Brad Pitt, draw in some stubble, a frown and a red bandana, and then square the coolness factor. It's not perfect, but what do you expect?

-LR

PS: Watch out for possums over the summer.

# Big Shoes, Bigger Footprints

*Maria Simoes*

**4B Computer**

Four and two-thirds years ago, I wrote my first article for the Iron Warrior. I remember it like it was yesterday. It was about my thoughts on being one of 350 Computer Engineering students accepted in '99, a large and somewhat impersonal number at that time. Since then, I have written countless other articles and have shared my opinions, feelings and passion for writing with the rest of the Engineering Student body. And so it is with sadness that I write this, my final article for this fine paper. But also, with hope for the future.

I would like to pass on some of the wisdom that I have gained while here. First and foremost, smile. Enjoy yourself, take pleasure in the things you do, and laugh at your misfortunes. Afterall, it is LIFE - live it, and not just in the library or lab room, since that's REALLY unhealthy. Secondly, never forget your friends, those people whom you look to in times of trouble, whom you can count on when the going gets rough, and most importantly, whom you can laugh with through the good times.

Thirdly, engineering the profession is not just about work. It is about giving fully of ourselves as individuals and as a group to society. Likewise, the study of Engineering should not be just about the academics. It should be about giving to the community and giving of ourselves. The story of Lady Godiva, brought to life in the Engineering Hymn, is more than just a collection of lyrics. It is a song about self-sacrifice, and the ideals to which we all as Engineers should hold. Give of yourselves, in what ever way pleases you - be it through partaking in a charity, involving yourselves with an on campus group, or mentoring someone younger than yourself, or heck, even writing for this paper.

***"...engineering the profession is not just about work. It is about giving fully of ourselves as individuals and as a group to society."***

This past term, I have noticed a great deal of indifference towards the non-academic aspects of engineering student life. Some of you might be reading this and wondering at my meaning. Well I tell you this: if all you do is study, you are not going to be a remarkle Engineer - a good Engineer maybe, but definitely not amazing. Those whom I look up to in this profession are those who partake in all aspects of the discipline. They put society and the well-being of others before themselves in almost everything they do.

Each and every one of us has the power to change the world. If everyone who reads this article were to take an hour of their time, or a few dollars from their wallet to help out in this community, imagine the difference that could be made. That is the true nature of Engineering. Take a moment or two to do something for someone else. If not for others, then for yourselves as engineering students.

As I leave these hallowed halls, I know that I leave them in good hands. I see all of you and all of your potential. My friends and I are leaving - and my friends leave some pretty big shoes. Step up, and fill them. I know you can.

# End of the Road

*Leanne Whiteley*

**4B Civil**

This past Saturday at Gradball, I was one of many recipients of a Paul and Paula Plummer Award for my 'outstanding contribution' to the Engineering Society during the course of my five years here. For those of you who stuck it out until the end on Saturday, you might have seen tears in my eyes. Many people looked at me and wondered what could possibly be wrong with me. Even my own fiancé could not understand why I was so upset. "You're coming back," he said, referring to the fact that I'm doing my grad studies here at UW. Unfortunately, what he and others don't realize is that this is the end of the road for me. To me, I'm not just graduating. I am finishing my

*Continued on page 4. See "Leave With No Regrets."*

**Columns**

# Leave With No Regrets

*...continued from Page 3.*

term as an undergraduate student, which means that I soon will no longer be a member of the Engineering Society. Over the years, the Engineering Society has become my home. It's where my friends are, it's where things are happening, it's the place where I, along with many others, have been trying to make a difference.

Sure, I've enjoyed the courses that I've taken and the work experience that I've gained. But, life here has been more to me than just textbooks, grades, and some work experience on a resume. It's where I've grown. It's where I've broken out of my once very shy shell and can now stand up in front of hundreds of people and present a speech. It's where I've found myself and where I've decided what I want to do and where I want to go. And so, I'm upset because in a few short weeks, I will be leaving these halls as a undergraduate student and forced to turn my back on something that has been such a huge part of my life and has made me who I am today.

The other day, I had a 2nd year student point out that most of the current directorships were filled by 4th year students. She was concerned about what would happen once we all left. I, too, am concerned about what will happen after we leave. I can't help it. I've devoted too much time and energy into EngSoc to just walk away and not look back. Who's going to build the Santa Claus Parade float? Who's going to make sure that charity events are run each term? Who's going to fill in for Betty during her lunches? Who's going to work for Mary in the C&D so that she can get some of her own work done? The answer is: the next generation of Paul and Paula Plummer Award recipients. What EngSoc needs right now are for younger students to step up and take our places. We're done and now it's time for others to shine and take over. I can tell you that at times it's not going to be easy, but nothing ever is. However, if you're like me, the only regret you'll have is that you ran out of time and weren't able to do more!

# The New Renaissance

## Engineers and Artists Collaborate through Technology

*Dallas Card*
4B Systems

Engineers and artists may have their differences, but at the University of Waterloo these two schools are bridging this divide and entering into a bold new relationship. Beginning with a new course in art and technology, some enthusiastic people on both sides are working hard to see that this venture flourishes, and the future looks promising.

This new course, Technology Art Studio, began with Jane Buyers and Tony Vanelli, the respective chairs of the Fine Arts and the Electrical and Computer Engineering (ECE) departments, and their desire for some form of collaboration. Although offered by the department of Fine Arts, the enrollment for this course was arranged to ensure that artists and engineers would be equally represented. This initial offering, held for the first time this winter, has been enormously successful.

Waterloo is certainly not the first university to expound the benefits of such collaboration or the first to act on these ideas. The best known example of such a partnership is the world famous Media Lab at MIT. Since it was founded in 1980, schools all across North America have been establishing centres for this bourgeoning field, such as the Human Communication Technologies Lab at UBC or the new program of Knowledge Media Design at the University of Toronto.

There is, however, an important difference. All such existing programs are essentially screen based, and focus primarily on "new media", such as user friendly interfaces and interactive computer graphics. In effect, they are trying to apply the theories of art to the development of media technologies. At Waterloo, a conscious decision was made to invert this bias. The focus here is on the use of technology in art, and the resulting cultural implications.

This sort of collaboration between artists and engineers is not particularly new. Rob Gorbet from the ECE department is one of the two instructors for this course. As he points out, "artists traditionally have always been on the edge of technology." The classic example is, of course, Leonardo, known for his mastery of both painting and design. More recently, the explicit participation of engineers in the creation of art reached even greater proportions. Engineers such as Billy Kluver, who had the experience of collaborating with Andy Warhol, Robert Rauschenberg and other artists in the 1960's, paved the way for this involvement. Today, many artists don't even participate in the physical creation of their work. Artists such as Max Dean and Eduardo Kac, for example, typically have a creative vision, and contract engineers or scientists to produce something that meets their specifications.

As one of the few fortunate engineers that has been able to participate in this initial offering of Technology Art Studio, I am proud to say that my experience has been one of much more equal collaboration. All of the artists have shown remarkable aptitude for learning the technological side of things, and the engineers have answered with impressive creative vision and craftsmanship. The whole course has been an amazing education. Throughout the term there has been a balance between history, theory and practice, and I have developed a much better understanding of how artists actually work. The technical components have offered all the advantages of an engineering lab course, with much more freedom to design and create.

Bruce Talyor, a member of the Fine Arts department, is the course's other instructor. As he sees it, this sort of collaboration "is what universities should be about." He and Gorbet are both committed to strengthening this inter-faculty relationship. In order to bring artists and engineers together, they are proposing everything from a regular coffee house society, to a symposium on art and technology and perhaps a gallery in Kitchener. Furthermore, it is their hope that this course will develop into a full fledged option in art and technology, available to students of both fine arts and engineering.

The culmination of all our work in this course will be an exhibition titled T'art. It will be held for three days at the beginning of April and will feature some remarkable student work and excellent examples of the merging of art and technology. The opening should be an excellent opportunity to see the pieces, meet the artists and perhaps be inspired about what is possible.

T'art will run from April 7-9 in DC 1301 and ECH Front Gallery, from noon - 7:00 p.m.

There will be an opening reception on April 7, from 4:30-7:00 p.m., in DC 1301

For more information about courses, T'art, or to express interest in future involvement, please contact Rob Gorbet at rbgorbet@engmail.uwaterloo.ca

Columns

# Looking Back on the Avro Arrow

*Andre Beltempo*
3A Mechanical

On October 4th, 1957, Avro Canada unveiled Canada's first, last and only made-in-Canada supersonic interceptor, the CF-105, dubbed the "Arrow". Less than two years later, in February of 1959, the Arrow program was scrapped, and over 30,000 employees were suddenly left jobless. In the years that followed, myth, controversy, resentment and legend melded into the story of how Canadians dared to dream, and then shot themselves in their collective feet. Conspiracy theories abound as to how the U.S. torpedoed the Arrow, since it was superior to their own aircraft, and they couldn't allow that to occur. In this article, I'm just going to run down the facts of the airframe, engine and fire control system.

Firstly, in the 50's everyone was going higher, farther and much, much faster, with their aircraft. The turbojet engine revolutionized aircraft, and designers and engineers were having a wonderful time throwing new stuff into new airframes, finding lunatics (known as test pilots) to see if they'd work, and then trying again when they didn't. As an example, the top of the line aircraft in 1952, the F-86 Sabre, had a top speed of maybe 650 mph, no radar, and could fly at maybe 40-45,000ft. The F-100 only 5 years later could go supersonic at 50,000ft, and by 1962, the F-104 and F-4 both exceeded Mach 2 at 60,000 ft. The altitude and speed records were getting broken every other week, and the unspoken thought was that by the mid-60's, combat would be occurring at hypersonic (Mach 3+) speeds, and passengers would certainly be traveling supersonically by the 70's. In fact, the fabled 747 Jumbo Jet, the double-decked behemoth that even today symbolizes air travel, was only started by Boeing because they believed that the large design could be easily converted to cargo when passenger service went supersonic. So everybody thought planes would be moving fast in the future.

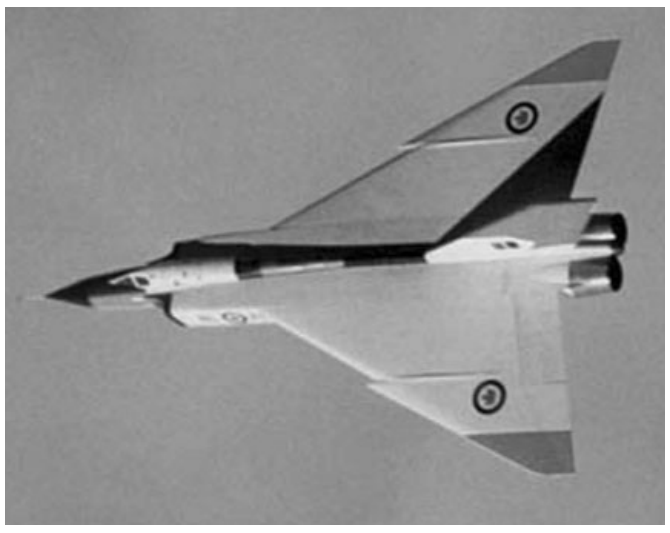
What does any of this have to do with the Arrow? Well the Arrow was designed right in the middle of this craze. Let's look at it from a standpoint of requirements. The Arrow was designed to operate without ground support and at supersonic speeds, to intercept potential supersonic bombers coming over the North Pole from the Soviet Union. This was a perceived requirement, and the Arrow was the perfect aircraft to do this. The high-wing delta design was and still is perfect for high-altitude high-speed flight, and, due to some excellent Canadian aerodynamicists, the Arrow airframe performed exceedingly well in this area of its flight envelope. As an example, the Arrow, equipped with American J-75 engines (19,500lbs afterburning thrust), traveled at Mach 1.98 at approximately 48,000 ft. These engines were heavier than the Canadian designed Orenda PS-13 Iroquois, which was an absolutely phenomenal design for the time, and provided approximately 26,500lbs of afterburning thrust. In fact, the Iroquois engine was powerful enough to get the Arrow supersonic without afterburner, a feat that the Americans have only duplicated in the F-22, which won't even be in service until 2005! The great 'what if' is how high and fast the Arrow could have flown with Iroquois engines, and the sad fact is we'll never know. Most people predicted Mach 2.5+ at 60,000 ft, which is about equal to the current U.S. interceptor, the F-15. The 'what if' people point to the fact that, with minor modifications, the Arrow could easily have flown to Mach 3 at 80,000ft, and all this is true. When compared to today's fighters, for example, Canada's current fighter, the CF-18, the Arrow has comparable if not better performance numbers. This has led many to believe that, therefore, the Arrow was outright 'better' than everything else since.

One of the enduring myths surrounding the Arrow cancellation is that the Arrow was cancelled due to the perceived fact that missiles and 'push-button' warfare would replace aircraft. This myth about the Arrow is made all the more bitter by the fact that less than two years after the cancellation, Canada bought 75 used F-101 Voodoos from the U.S, which could barely go supersonic, because we needed some type of fighter. The truth is that the development of missiles did 'kill' the Arrow design, just not in the way people think. Traditionally, everyone points to the fact that even today, men are 'in the loop' with aircraft, and missiles didn't replace aircraft, only complemented them. This is all true, but the original requirement for the Arrow was to intercept Soviet supersonic bombers coming over the North Pole. Everyone envisioned fleets of these things flying south to lay waste to North America, and the Arrow as the shield. The problem was, when the Soviets started building missiles, they realized that they were cheaper to operate and maintain than manned bomber fleets, and the doomsday fleet of Soviet aircraft never materialized. This means that even if development of the Arrow had proceeded, and the aircraft had reached service, its primary mission would have failed to present itself. Secondly, the development of missiles, particularly the surface to air (SAM) kind, abruptly changed the development of fighter aircraft, and the race to go higher and faster suddenly became one of survivability in a SAM environment. Since a missile could always go faster than planes, it didn't matter how high and fast they went, they could still be killed. This changed requirements and purpose-designed aircraft, such as the Arrow, gave way to 'multi-role' aircraft, with missiles and bombs being interchangeable on exterior hard points, and airframes optimized for a variety of profiles. The Arrow was a supersonic design through and through, with 'clean' lines to achieve high supersonic speeds and a large internal weapons bay, and although this would have allowed some multi-role capability, in a dogfight or at anything approaching low-level the Arrow airframe would've handled like a pig. It simply wasn't designed for that mission. The CF-18's we have today can deliver a variety of ordnance from all altitudes, as well as hold their own in a close-in dogfight.

You may ask why I would make the unfair comparison between aircraft designed 30 years apart, but this is precisely what people do when they compare the Arrow to contemporary aircraft, such as the F-22, and lament the fact that the Arrow can fly just as fast or as high. That's all well and good, but the F-22 can make a 9G turn in the dark at 50ft in between trees, as well as showing up on radar about as well as the average sparrow. Not to mention that it has much better fuel economy than the Arrow, and still delivers more power overall to the aircraft. Realistically, it makes sense that today's aircraft should outperform the Arrow; after all, it was designed literally 50 years ago.

***"...the technical skills and acumen for designing and high-performance airframes and engines was lost in Canada is the greatest lament."***

The greatest lament about the entire project in my mind is not the loss of the Arrow, for had it not been cancelled, it probably would've been as historically interesting to the general public as the CF-100 'Canuck' is today. That the technical skills and acumen for designing and high-performance airframes and engines was lost in Canada is the greatest lament. Canada retained the capability to build stuff under license, i.e. we can build anything with plans ready supplied, but a fully Canadian design base went away, and was never really recovered, until Bombardier, Canadair and deHaviland Canada started building smaller aircraft. Now the design base is slowly being built back, but does not even come close to Boeing or Airbus in terms of world-class airframes.



In the 50's Canada literally was at the top of the class for any airframe it chose to build. The Avro Canada C-102 Jetliner, which was built and designed before the Boeing 707, and was a better design than the BOAC Comet (the first passenger jet aircraft in the world), was the first jet passenger aircraft to fly in North America. However, due to bad timing, the big passenger companies ended up holding out for the 707. This was, again, a classic error on the part of Avro Canada, and another nail in the coffin for an independent Canadian aerospace sector.

In conclusion, although the Arrow was an incredible airframe, we should lament not so much about the loss of the particular aircraft, and more so about the loss of the best and brightest in Canada's aerospace sector, at a time when Canada had the fleeting potential to actually take the lead in a world-class field. We can only hope that the next time a choice such as this comes along the government is willing to spend the ridiculous sums of money required to keep things afloat.

# Using Your Webspace

*Taneem Talukdar*
1N Systems

The old saying goes that if you have an infinite number of monkeys on an infinite number of typewriters, one of them will eventually produce the entire works of Shakespeare. The Internet however, has now proven that this is probably not true.

Nonetheless it is more and more advantageous today to have a personal public website. It's not that hard and is nothing compared to what you have to go through even in 1A engineering. So even if you're someone who has never created a web page before, learning how to do so is a snap and will pay back the effort many times over in the future. There are many resources out there to help you get started. http://www.w3schools.org and http://www.webmonkey.com are two good places to look into. Incidentally the 1B Systems class will be running web tutorials in the summer. If you're interested in signing up, you can send me an email at taneem@dheo.com.

One of the best kept secrets here in engineering is the fact that it is really easy for students set up a personal public websites. Are you paying for web space on a commercial server? Tired of the pop-ups and the banners on free hosts? Your web account on the engineering web server comes with up to 50Mb of space, complete with PHP and CGI access. You can also get a mySQL account if you ask nicely.

It's simple to setup. On your Nexus account, if you browse the folders you'll see a °∞public_html°± folder. That is your web directory. Create an html file, and put it in the folder. Then start up your browser and navigate to http://www.eng.uwaterloo.ca/~yourusername/filename.html - note the public_html folder does not show up on the address. And that's it! Put all your html and image files there, and you should be able to access them from any browser around the world.

If you do not use Nexus to store anything else, then you can have up to 50MBs of space for your website. How do you access the folder without logging into Nexus? You have to use a protocol called SSH (conventional FTP access has been disabled). There are many SSH client programs out there – I use the non-commercial one at http://www.ssh.com. You have to connect to the server engage.uwaterloo.ca with your Nexus username and password.

For PHP scripting, there are no special changes necessary. They should run directly from your public_html folder. To run CGI scripts, create a folder called cgi-bin in your public_html folder, and keep them there. Access them through http://www.eng.uwaterloo.ca/cgi-bin/cgi-wrap/your_ID/your_script.

Given that domain names today can be bought for as little as $11.00 for one year, it's worth spending a little extra and getting a nice catchy domain name, and redirecting it to your long ugly engineering web address. I use http://www.mydomain.com. So far I've had good service, and my domain name was activated in less than 48 hours, which is acceptable.

More information on your engineering web account can be found at http://www.eng.uwaterloo.ca/twiki/bin/view/Engcomp/WebSpace.

EngSoc

# Engineering Society Executive Reports

## Paul and Paula Plummers

*Laura Mooney*

**President**

I can't believe another term has already come and gone. It's been a lot of fun, and I'm really looking forward to picking up in the fall with the new frosh on board!

As many of you are aware, the Paul and Paula Plummer awards were announced on Saturday night at Gradball. These awards are given to people who have made a significant contribution to EngSoc, and is normally given to students in their graduating year although it is also used as a way to recognize people from outside the Engineering Society.

This year, there were 14 winners altogether:

**A Soc:**
Chris Deck, Dan Foong, Mike Henheffer, Jeff Henry, James Kunz, Steph Ho, Maria Simoes, Leanne Whiteley

**B Soc:**
Niki Czerniak, Laura Jones, Steph Purnell, Jen Saunders, Garett Smith, Daren Toppin

Congratulations to all the nominees and winners - EngSoc would not have been the same without you, To everyone, good luck on exams, have a great work term, and see you in the fall!

## Floats, Shadows & AGMs

*Nick Lawler*

**Vice President, External**

Yes this is indeed my last exec report of the term, and what a term it has been. It all started with a week in Victoria for Congress, where they had the worst weather in 9 years. Now it ends with snow on the ground at the beginning of April. I've had a great first time being exec, and look forward to another great term this fall.

For those who are not terribly busy and are looking to have a great weekend this June, do I have a chance for you. The Engineering Student Societies' Council of Ontario (ESSCO) is having its Annual General Meeting the weekend of June 25 in Hamilton. At the AGM, ESSCO will be electing a new executive, setting a direction for the year, and deciding the locations of the other annual Ontario conferences. As well, discussions will be had regarding the future of engineering education in this province. If you want to see student government at its best, and have a great time hanging with lots of other engineering students from across Ontario, fill out an application on the EngSoc website. All conference expenses are paid thanks to the generous contributions of the Dean.

I've also got a lot of great directorships up for grabs, including the Santa Claus Parade float and Shadow Day. Come out to the directorship meeting at 4:30 in POETS on Wednesday, March 24, or email me at asoc_vpext@engmail if you are interested. All those going onto another (or first) work term, have a safe and happy summer. For all the grads I wish you good luck and best wishes for the future.

## Your Feedback Needed

*Jonathan Fishbein*

**Vice President, Education**

First on the list to talk about this report are the PDENG courses. The PDENG Information and Feedback Session happened on Wednesday, March 17th. A few people came out and gave good feedback to the PDENG development committee and the Dean, who attended. If you missed this session, don't fret because we plan to have such a session every term so the development committee can keep the students appraised of their progress. One thing that did come out of this session is that the development committee needs some input on how your first workterm went. They've posed the following question to students:

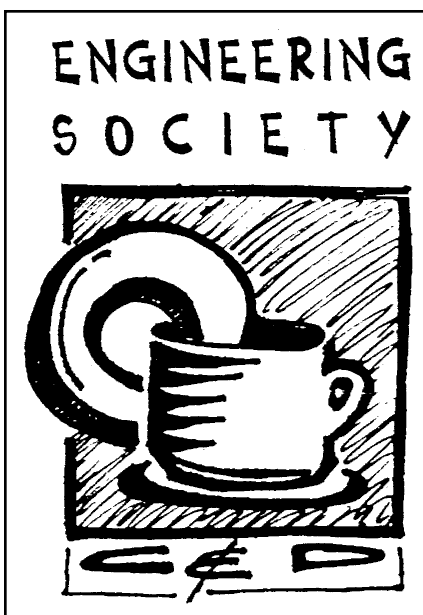
*1. What is the one thing you wish you had known early in your first workterm?*
*2. What is the most important thing you learned on your first workterm?*
*3. Can you provide us with a short description of an important experience on an early workterm?*

You can answer these questions by either emailing pdeng@engmail.uwaterloo.ca or by going to http://www.eng.uwaterloo.ca/~engpd and filling out a web form. The website also contains more information about the courses to keep you informed about what's going on.

The next thing I have to mention is debt load surveys. The results are in and can be seen in the adjacent page of this fine publication. I and the Dean would like to extend our appreciation to those of you who filled out the surveys and I'm sure the faculty will put this information to good use.

The last thing for this report is course critiques. Your Profs should have all handed out the course critique forms for you to fill out by now. If this is not the case, make sure you remind your professor that course critiques need to be completed, as they are part of his or her teaching responsibility.

Well, one exec term down, one exec term to go! Thanks to all of you who have helped me this term and here's to hoping next term will be just as stellar. Before I sign off, I should mention that there are still many open directorships for the fall term, so if you're reading this on Wednesday, March 24, come out to POETS at 4:30 p.m. See you on the flipside!




*Did you know you can earn free food and even money working at the C&D this fall? To find out more about how you can help out, email Mary Bland at mbland@engmail.uwaterloo.ca.*

## Your WEEF Donations at Work

*Michael Henheffer*

**WEEF Director**

On Tuesday, March 16th, the WEEF funding council met to decide where the $40 000 that had been allocated for funding should be spent this term. Yes, I did say $40 000. As it turns out, we had not updated the funding amount when our principle was updated. The amount we had to spend given the new principle is up to $40 000 from $35 000.

The funding breakdown for this term can be seen in the table. The breakdown has a little over 43 per cent of the money allocating to student teams, which is a little higher than normal. However, the funding council felt that many of the student teams really deserved the funding. The Board of Directors must still approve this funding decision on Wednesday, March 24 so those receiving funding should keep that in mind when looking at the table.

**WEEF Proposals – Winter 2004**

| | | Requested | Allocated |
|---|---|---|---|
| | **CHEMICAL AND ENVIRONMENTAL CHEMICAL** | | |
| 1 | Digital Electronic Burettes | $3,400.00 | $3,400.00 |
| | **CIVIL and ENVRIONMENTAL CIVIL** | | |
| 2 | Survey Equipment | $4,015.00 | $1,825.00 |
| | **ELECTRICAL & COMPUTER** | | |
| 2.5 | Oscilloscopes | $12,300.00 | $6,000.00 |
| | **MECHANICAL** | | |
| 3 | Instron Grips | $2,000.00 | $0.00 |
| 4 | Spectrometer Detector | $20,000.00 | $0.00 |
| 5 | Data Projector | $5,800.00 | $5,800.00 |
| | **SYSTEMS DESIGN** | | |
| 6 | Systems Teaching and Workshop Lab Upgrade | $6,479.00 | $3,200.00 |
| 7 | ECP Software Upgrade in Systems Teaching Lab | $1,200.00 | $1,200.00 |
| 8 | Monitors for Systems DASL Lab | $2,656.00 | $0.00 |
| | **MISC** | | |
| 9 | Tooling – Student Shop | $1,170.00 | $1,170.00 |
| | **Sub-Total Departmental** | $59,020.00 | $22,595.00 |
| | **STUDENT** | | |
| 10 | Formula Sae | $6,000.00 | $2,000.00 |
| 11 | Trailer (Formula Sae, Mini Baja,Clean Snowmobile) | $6,000.00 | $3,000.00 |
| 12 | Free Flight Glider Team | $670.00 | $370.00 |
| 13 | Concrete Toboggan 2006 | $200.00 | $200.00 |
| 14 | IEEE | $2,000.00 | $0.00 |
| 15 | Midnight Sun VII Solar Race Car Project | $2,800.00 | $2,255.00 |
| 16 | Mini Baja Team(Wombat) | $2,250.00 | $1,750.00 |
| 17 | University of Waterloo Alternative Fuels Team | $4,100.00 | $3,180.00 |
| 18 | Waterloo Aerial Robotics Group (WARG) | $3,000.00 | $1,500.00 |
| 19 | UW-ASIC | $4,255.00 | $1,500.00 |
| 20 | Clean Snowmobile | $3,025.00 | $1,350.00 |
| 21 | Skatebot | $300.00 | $300.00 |
| | **Sub-Total Student Groups** | $34,600.00 | $17,405.00 |
| | **TOTAL** | $93,620.00 | |
| | | | $40,000.00 |

EngSoc

# Faculty of Engineering Debt Load Survey Results

*Karen Dubois*
Dean of Engineering Office

**Term Total**

| | |
|---|---|
| Total Responses | 550 |
| Number of surveys sent | 2090 |
| Response % | 26% |

**1) Does your family support you financially? (547 responses)**

| | |
|---|---|
| Yes | 53% |
| No | 47% |

**2) Average Cost of Living for a 4 month School Term (541 responses)**

$7,772

**3) Average Cost of Living for a 4 month Work Term (481 responses)**

$3,492

**4) Have you applied for local aid or other bursaries to pay for school? (545 responses)**

| | |
|---|---|
| Yes | 39% |
| No | 46% |
| Not Yet | 16% |

**5) Have you applied for OSAP? (545 responses)**

| | |
|---|---|
| Yes & Received | 27% |
| Yes & Denied | 25% |
| No | 49% |

**6) Do you have a loan for academic purposes? (541 responses)**

| | |
|---|---|
| Yes | 39% |
| No | 46% |
| Not Yet | 14% |

**7) How much is the student loan? (287 responses)**

| | |
|---|---|
| 1-499 | 8% |
| 500-999 | 2% |
| 1000-1999 | 5% |
| 2000-4999 | 26% |
| 5000-9999 | 31% |
| 10000+ | 27% |

**8) Has the differential tuition increases caused you hardship? (541 responses)**

| | |
|---|---|
| Yes | 58% |
| No | 16% |
| Not Yet | 26% |

**9) How much debt do you expect to be in by graduation? (528 responses)**

| | |
|---|---|
| No Debt | 24% |
| <999 | 3% |
| 1000-4999 | 17% |
| 5000-9999 | 17% |
| 10000-19999 | 23% |
| 20000+ | 16% |

**10 )Do you live at home while at school? (546 responses)**

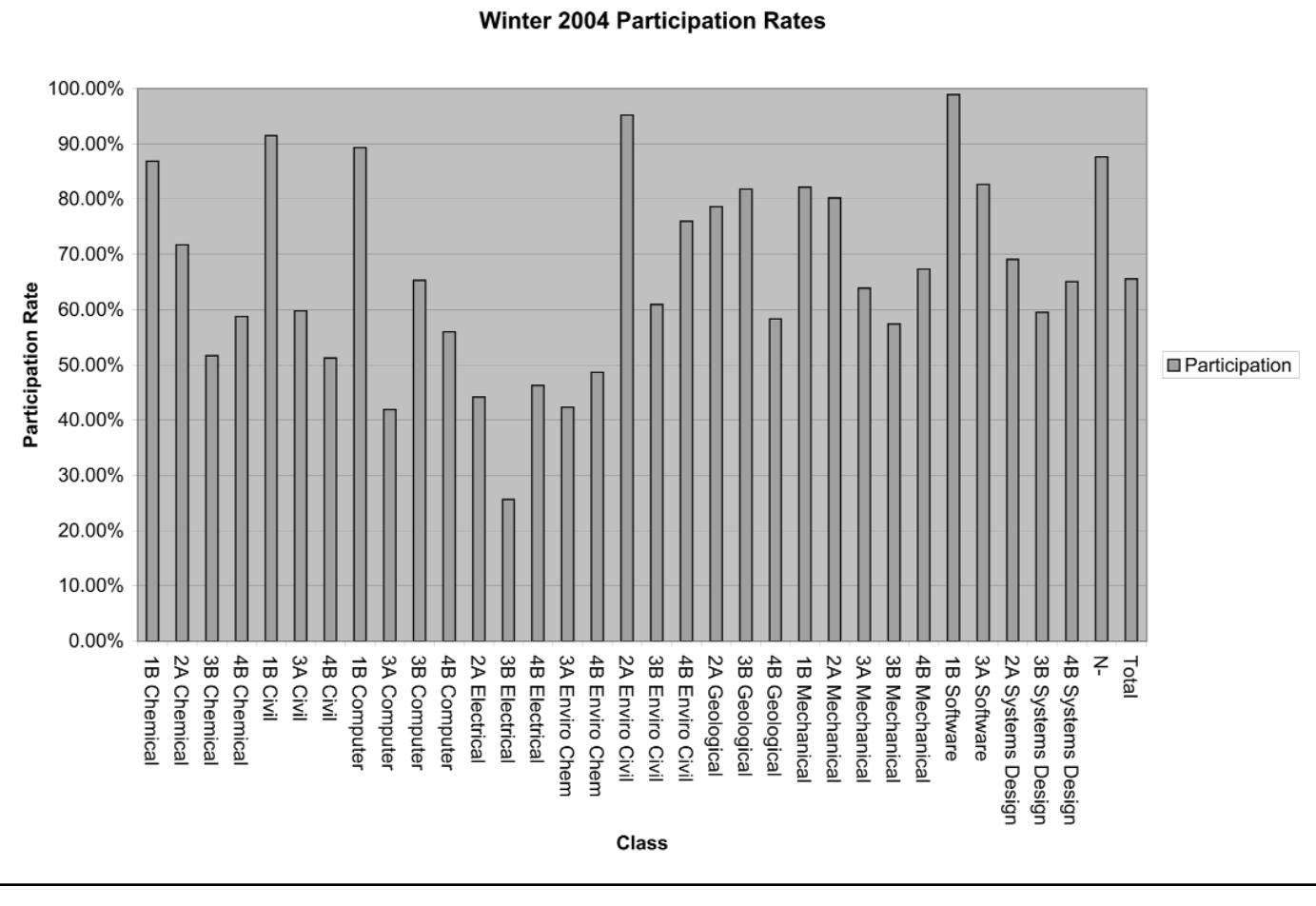
| | |
|---|---|
| Usually | 7% |
| Used to | 2% |
| No | 91% |

**11) Have you lived at home while on work terms? (519 responses)**

| | |
|---|---|
| Always | 22% |
| Sometimes | 48% |
| Never | 30% |

**12) Average of the weekly salary while on work term (443 responses)**

$585




# Final WEEF Reports are Good!


Well, here it finally is. This is my last WEEF report ever! I have to say it's been great being able to put my time and energy into something as great as WEEF for the last 5 years. I've really enjoyed my time as the WEEF director and hope that WEEF continues to be a success after I leave. It seems that I won't have to worry about that though as, pending approval from the board of directors, the WEEF director for next term will be Ryan Walker. I'm sure he will do a great job and I wish him the best of participation statistics in the fall.

***"In total, 65.5 per cent of engineering students donated to WEEF this term."***

On that note, we finally have participation statistics for this term. In total, 65.5 per cent of engineering students donated to WEEF this term. This number is about the same as the participation rate for the last winter term that 'A' soc was on stream. While the participation rate is not bad, it could still be better. I had hoped to see the participation rate rising a little bit each term as people begin to realize the benefits they are receiving from WEEF. That being said, I would like to thank all of you who did contribute to WEEF this term. With your support we will be able to continue towards our goal of making Waterloo the best engineering school in the world.

A breakdown of the participation statistics by class can be seen in the chart. I want to draw attention to the 1B Civil, 2A Environment Civil and 1B Software classes as each of them had participation rates greater than 90%. Each of these classes is setting an example that the rest of us should follow. It is great to see students in these classes giving WEEF this amount of support; it is and will continue to be appreciated now and into the future by the Waterloo engineers who follow.

| Winter 2004 | | | |
|---|---|---|---|
| Class | Refunds | Enrolled | Participation |
| 1B Chemical | 8 | 61 | 86.89% |
| 2A Chemical | 15 | 53 | 71.70% |
| 3B Chemical | 30 | 62 | 51.61% |
| 4B Chemical | 26 | 63 | 58.73% |
| 1B Civil | 8 | 94 | 91.49% |
| 3A Civil | 33 | 82 | 59.76% |
| 4B Civil | 41 | 84 | 51.19% |
| 1B Computer | 11 | 103 | 89.32% |
| 3A Computer | 79 | 136 | 41.91% |
| 3B Computer | 25 | 72 | 65.28% |
| 4B Computer | 107 | 243 | 55.97% |
| 2A Electrical | 57 | 102 | 44.12% |
| 3B Electrical | 64 | 86 | 25.58% |
| 4B Electrical | 50 | 93 | 46.24% |
| 3A Enviro Chem | 15 | 26 | 42.31% |
| 4B Enviro Chem | 18 | 35 | 48.57% |
| 2A Enviro Civil | 1 | 21 | 95.24% |
| 3B Enviro Civil | 9 | 23 | 60.87% |
| 4B Enviro Civil | 6 | 25 | 76.00% |
| 2A Geological | 3 | 14 | 78.57% |
| 3B Geological | 2 | 11 | 81.82% |
| 4B Geological | 5 | 12 | 58.33% |
| 1B Mechanical | 17 | 95 | 82.11% |
| 2A Mechanical | 17 | 86 | 80.23% |
| 3A Mechanical | 26 | 72 | 63.89% |
| 3B Mechanical | 26 | 61 | 57.38% |
| 4B Mechanical | 49 | 150 | 67.33% |
| 1B Software | 1 | 90 | 98.89% |
| 3A Software | 16 | 92 | 82.61% |
| 2A Systems Design | 26 | 84 | 69.05% |
| 3B Systems Design | 30 | 74 | 59.46% |
| 4B Systems Design | 29 | 83 | 65.06% |
| N-term/Exchange/Other | 15 | 121 | 87.60% |
| **Total** | **865** | **2509** | **65.5%** |

Columns

# 3 on 3 Basketball Action

*Dan Foong*
4B Civil

With the Athletics department running it's 3 on 3 basketball tournament at the Columbia Ice Fields, 5 intrepid Engineering teams made their way to the CIF to compete for the Engineering 3 on 3 basketball title. The tournament, which started and ended in one night, saw the five teams battle through 4 round robin games each, and a full style tournament.

The round robin consisted of each team playing each other, which would in turn determine the team's seeding. Although each team would make the playoffs, it didn't stop them from making a concerted effort through each game.

Aside from the title of Engineering 3 on 3 basketball champions, the teams were vying for top prize, 3 Spalding indoor/outdoor basketballs. Second place would be awarded Toronto Raptors NBA replica basketballs. Third place teams could slink with the knowledge that they were beaten by better teams.

During the round robin, teams played a first to seven-points style game, with the winning team requiring two baskets over their opponents to ensure a victory.

With only five teams entering the tournament, the seeding arrangement gave the fifth seeded team a huge advantage, as they only required to defeat the first seeded team for a guaranteed prize, and a shot at the title. Seeds two to four would have to battle through at least 2 games before they would see the end.

The first round saw the unlikely happen, as the fifth seeded team of Eric Stephens, Anil Dalvi and a substitute (they made their team as the tournament started) would upset the first seeded team. With that they were guaranteed a shot at the final.

When the dust settled, and all the games were played, the fourth seeded team of Shah Husain, Herman Chan and Martin Arciszowski, would claim top prize and walk away as champions for the night.

# Snowmobile Challenge

*Eero Teene*
4B Mechanical

The University of Waterloo Clean Snowmobile Team has recently returned from competing at the Society of Automotive Engineers Clean Snowmobile Challenge. The competition was held in Houghton, Michigan from March 15-20, which is located near the center of Lake Superior. The challenge consists of university teams through out the United States and Canada modifying a stock snowmobile to reduce the emissions and noise generated while trying to maintain the high performance that snowmobiles are known for. Engineering students Dan Cluff, Simon Dine, Brian LeMoine, Chris Mendes, and Eero Teene represented the University of Waterloo at this year's competition. The UW Clean Snowmobile Team entered a modified 2000 Ski-Doo MXZ 2-stroke powered engine with custom emissions, silencing, and cooling systems in the competition.

After a gruelling 16 hour drive through snowy conditions, the team arrived at the Keweenaw Research Center in Houghton and rode around a bit on the snowmobile before setting up for the public display on Monday the 15th. The next day was the 90 mile endurance run where the team ran into some problems. Seizing the engine 5 miles into the event made the UW team the 3rd team to fall out of the event. Of the 15 teams competing, only 5 survived the entire endurance run.

The rest of Tuesday and the majority of the following day the engine was dismantled, a new piston was purchased, and the engine was re-assembled. The problem was determined to be from excessive exhaust temperature and back pressure causing the piston to melt near the exhaust port. A presentation and design paper review were the only events on Wednesday, so the Clean Snowmobile Team was able to devote their resources to repairing the engine without missing any events.

On Thursday morning, at 7AM a cold start event was held, in which the teams had 20 seconds to get their engines up and running to score points. Waterloo was first team to start up, and only 6 teams were able to start at all. The snowmobiles were then tested for their noise reductions at 40 MPH. The UW Sled ran at 109.5 decibels compared to the control sled running at 111.5 decibels.

An alternator breakdown on Friday morning prevented the UW Clean Snowmobile Team from getting their snowmobile on to the dyno for emission testing. However, the team was able to get the snowmobile fixed for the Saturday acceleration and handling events. The snowmobile ran a 500 foot distance in 7.990 seconds making it the 7th fastest sled.

The UW team ended up placing 10th place overall, but found out at the awards banquet that they had won the Most Sportsmanlike Award, which is voted on by all of the attending student teams. The effort and strength of our team in the competition was noticed, from staying at the shop until they were kicked out almost every night at midnight, to their constant refusal to give up in the face of multiple major breakdowns.

# Best Explorations Ever

*David Yip*
2A Mechanical

Explorations this year was a great success! Parents and children from local elementary schools came to UW Engineering to have a look at our showy student and research projects. While my personal exposure to tour groups was limited in my position, from what I did see, smiles were everywhere in engineering from both parents and children alike. Just the sight of our engineering showpieces such as the Formula car and Concrete Toboggan seemed enough to enthrall children, while parents asked more penetrating questions about the nature of the projects.

As usual liquid nitrogen ice cream was a huge hit, as a small crowd of Explorations volunteers clustered around in addition to the parents and children. Also serving food was a Charities table for Multiple Sclerosis, and of course the ever-present Boggan Burgers table. Also a huge hit was Pounce de Lion, whose big friendly waves also drew smiles from the crowds. A bonus tour was also offered of the new Environmental Information Technology building with its dinosaurs and sparkly minerals.

I personally got a chance to take a look at a few exhibits myself, which thankfully re-affirmed my reasons to be in engineering. Hopefully all the volunteers got a chance to have a look at the variety of exciting projects that are going in the faculty. Speaking of volunteers, special thanks to all those who came out!

At the end of the night, presenters were released from their duties, signs were taken down, and over the radio came director James: "Best Explorations ever!"

*(below) An explorations tour guide kicks off one of many tours for members of the community (top right) A UW Alternate Fuels Team member explains the project to onlookers (right) Children and parents look on at the Formula SAE exhibit (bottom right) Organizers and some of the many of the volunteers pose with UW mascot Pounce de Lion.*

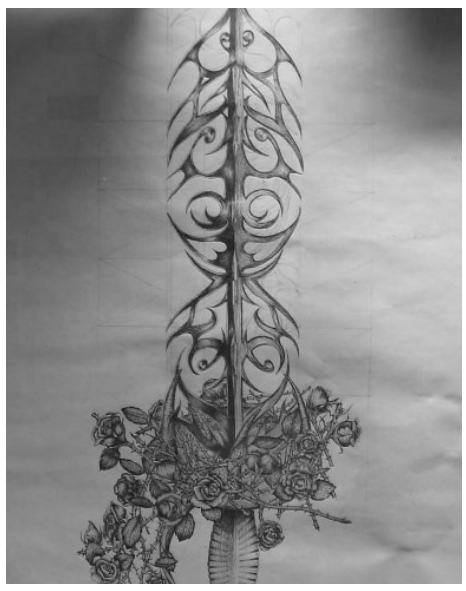
# EngSoc Arts Contest

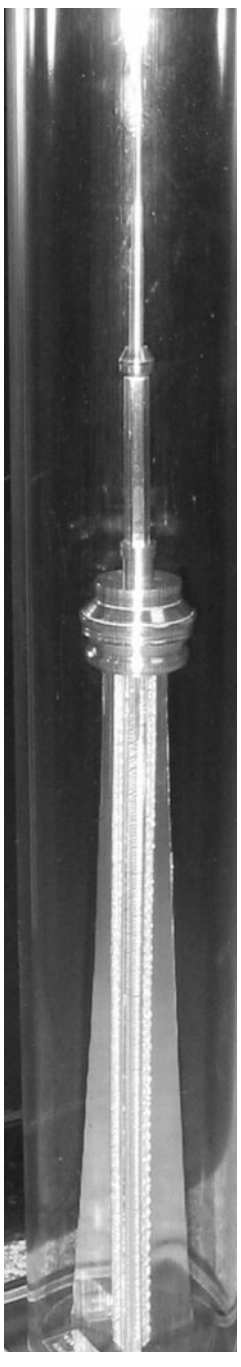
*IW News Bureau*
Arts Desk

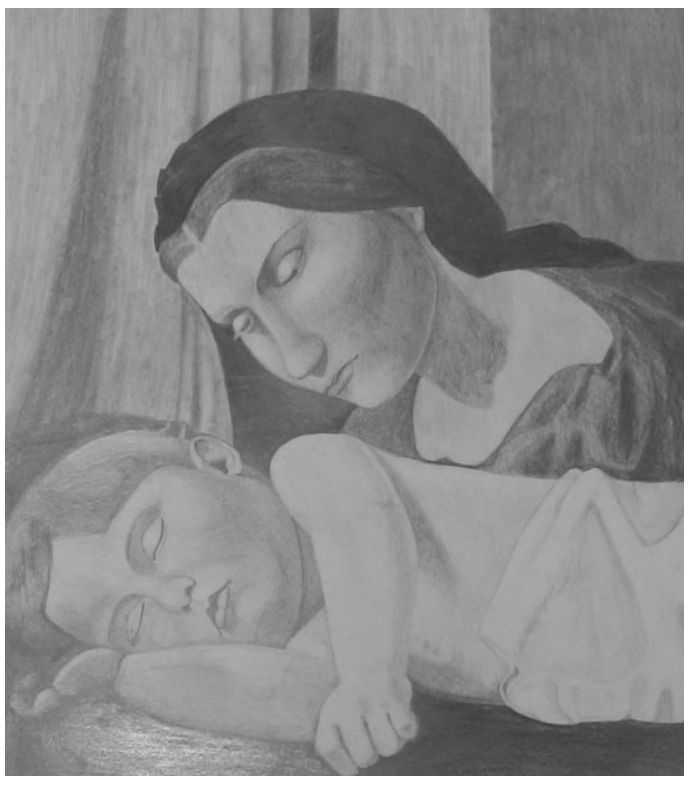
Despite short notice, this winter term's arts contest turned out to be a great success with over a dozen entries.

Dallas Card, the Engineering Society Arts Director, announced the winning entries to the IW Arts Desk via email on Monday. Without further ado, and in no particular order, the winners are: Michelle Yu (top right), Steph Purnell (below), and Paul Chien (bottom left).

Artists are advised that their work will be available this Friday, March 26, along with prizes for the winners. Before then, many of the works are on display in CPH.





**Columns**

## Point vs. Counterpoint

# Did Bertuzzi receive the appropriate punishment for his actions?

*Michael Henheffer*
**4B Computer**

On March 8th, Todd Bertuzzi delivered a punch to the head of Steve Moore from behind and then proceeded to jump him. As a result of these actions, Moore suffered a broken neck and is still in the hospital. Bertuzzi has since been suspended by the NHL for the remainder of this season and the playoffs. Bertuzzi must also apply for reinstatement to the NHL prior to next season. If Bertuzzi were to be reinstated prior to next season, his current suspension would be between 17 and 41 games depending on how far the Canucks go in the playoffs. Bertuzzi deserves more punishment than this and should not be reinstated next season.

A similar situation occurred four years ago when Marty McSorley hit Donald Brashear in the head with his stick. For this action, McSorley received a one year suspension from the league. Under this precedent, Bertuzzi should receive a suspension of at least the same length. However, the fact that an attack of this nature has occurred once again on a rink in the NHL makes it clear that the players did not get the message after the McSorley incident. The NHL has to do something to make the players understand that this sort of behavior absolutely cannot happen again. At this point, it seems that the only thing that they can do is to be more strict than they have been in the past and increase fines and suspensions for violent actions.

Colin Campbell, an NHL vice-president and director of hockey operations, doesn't believe that these kind of incidents can be prevented. He recently was quoted as saying "A wrong decision was made here, and I hate to say this, but wrong decisions will be made in the future, not only in our sport, but in other sports and you hope to avoid them, but it happens." If this is true, why don't we hear about these violent acts happening in the other major sports? The fact of the matter is that the other sports don't have players attacking others from behind. Why is this? Well, the other major leagues do not tolerate fighting of any kind. The NBA gives automatic suspensions if a player so much as throws a punch. Major League Baseball has the occasional bench clearing brawl, but they always result in suspensions being issued. Some may say this is because these are sports that don't have the physical contact that is involved in hockey. Let's examine football, since this has just as much (if not more) physical contact than hockey. The NFL does not tolerate fighting on the field either. In fact, it results in an automatic suspension. Now I'm not saying that the NHL should ban fighting altogether, as I realize that they are not ready to phase fighting out of the game. Since they cannot ban fighting, they must start issuing stiffer penalties for cheap shots such as Bertuzzi's in order to ensure players will control their emotions.

How stiff should these penalties be? I wouldn't even rule out banning Bertuzzi for life for his actions. Would it be that unreasonable to ban him? No, it wouldn't be. He most likely has taken away the livelihood of Moore with his actions, so why not take away his livelihood in return by banning him? I doubt another hockey player would be willing to take a cheap shot at another player from behind if they knew it would end their own career. Pete Rose was banned from professional baseball for life for gambling on the team he managed and he wasn't even betting that his team would lose. Few would argue that his actions were worse than those of Bertuzzi, so why not ban him for life? The problem the NHL faces is that players don't always think about the consequences of their decisions before making them. With a penalty as stiff as a lifetime ban, players will consider the repercussions of their decisions before acting on them. Is this too strict an action to take?

> ***"Would it be that unreasonable to ban him for life? No, it wouldn't be..."***

The current suspension of Bertuzzi has done nothing thus far to prevent similar actions from occurring. This is evident by the fact that Wade Belak hit Ossi Vaananen in the head with a stick in a game on March 20. Luckily, this action did not lead to an injury as serious as that suffered by Moore. The lack of serious injury should not excuse the actions of Belak. The NHL has received a lot of bad publicity recently as a result of these two incidents. As pointed out by Damien Cox in a recent article in the Toronto Star, the Australian Rugby League faced similar problems in the late 1970's. The league began issuing much tougher penalties for fighting, tackling from behind and other violent acts. This made the game much safer for the players and had no negative impacts on thåe popularity of the sport. The NHL needs to learn from the experiences of the Australian Rugby League and take similar actions. A good first step in this direction would be to increase the penalty that Bertuzzi receives.

*Joseph Fung*
**3B Computer**

Todd Bertuzzi's hit on Steve Moore has raised debate in all circles; some are calling for stricter penalties to Bertuzzi, others are calling for Bertuzzi's return to the ice. As the two camps circle around each other, it's easy to see the blinders worn by those looking for an end to Bertuzzi's career. This is especially highlighted when looking at how excessively severe his punishment was. Rather than treating him fairly, the league has made him a fall-guy for this entire fiasco when the Canucks are not entirely free from blame and the NHL itself has shades of red on its hands as well.

The Canadian sports scene is home to a vast spectrum of sports, from the epitome of non-combative play such as curling, to the more dangerous such as boxing. It's important to realize that all sports fall somewhere on this spectrum, and that although one may abhor violence, it is a component of some sports.

Fighting in the game of hockey has been there since the inception of the game. And maybe, at some point in time, it will be banned, said Colin Campbell the NHL's chief disciplinarian. But right now, it is a part of the game and accepted to the point where it's penalized.

Those calling for a stricter punishment fail to realize this simple and unavoidable fact. Violence is part of the game. Although I agree that the level of violence displayed was distasteful, the fact is that this is the norm for the game. Punishing a single player is not going to remedy the problem.

Naysayers often ask the rhetorical question: Is it going to take a death before you realize how wrong this is? To this I answer no. In this situation, Bertuzzi stepped past the line of acceptable violence, and he was punished for it. The NHL has systems in place to punish offenders and that is exactly what happened here.

What the true issue is, though, is how much of a punishment is appropriate? Some would have us believe that the punishment handed down was minimal. This is not the case, rather Bertuzzi was handed a penalty that was unjustly large.

The disciplinary board assigned him a penalty that lasted the duration of the season, then in order to appease members of the public, they added a statement to the end of the punishment indicating that the complete duration of the sentence was yet to be determined. They implied that the punishment could be extended into the next season of play. This is not justice.

To hand Bertuzzi an open-ended sentence is not only unfair to him, but also to the other players and to the general public. This leaves him in a state of limbo and now no-one involved is able to determine how severe the NHL perceives Bertuzzi's actions to be.

Additionally, there's the possibility of legal action still looming over Bertuzzi. Moore and his family have not threatened legal action, nor did Naslund after he received the original concussion from Moore. If the victims themselves aren't interested in pressing charges, why should the general public? Hockey is dangerous - more so then it seems to have ever been - but the players seem to accept the conditions in the manner of occupational hazard.

Earlier I stated that the Canucks as a team also shared in the guilt. The reason is that the Canucks did not fine their players for issuing a threat, but rather their coach fanned the flames after the original hit by stating they were looking for justice. I also stated the league was guilty - the NHL did not fine the team from letting the threats become public - and thus a recorded document. In the past the NHL used to fine teams for threats made prior to games, for some reason this has stopped and that is what allowed the inmates to run the asylum in this case.

Bertuzzi doesn't deserve the punishment he received because of the fact that the NHL has brought themselves to a state where such violence is condoned. If this was the season a few years ago, then yes, the NHL should have thrown the book at him without a second thought. But in today's game their punishment was inappropriate.

Several years ago when goalies were run in the crease and behind the net, the team would maul the player who ran their goalie. The NHL altered the rules so that goalies could not be hit, and the problem became a non-issue. Why did that happen? The code was re-written and now no players make contact with goalies outside the crease.

The league needs to make similar changes here. Rather than lambasting Bertuzzi, the league should be exercising some judgement and should effect a change to the rules around head-shots. Once they've made those changes they can punish the players accordingly, but they cannot claim to be a fair arbiter when they are punishing someone for an action that has become an accepted standard.

***Editor's Note:*** *Point vs. Counterpoint is intended as a forum for objective and thought provoking debate on various issues. The views and opinions expressed here do not necessarily reflect those of the author(s), the Iron Warrior, or the Engineering Society.*

# Plummer's Pledge, WEEF, Campaign Waterloo and You

*Mike Henheffer*
4B Computer

After the initial returns of the Plummer's Pledge cards, things are looking quite good. We already have many cards in with a total of $30 910 in pledges. Fifteen people have already committed to the dean's challenge. I'd like to take this opportunity to thank all of you who have already committed to a donation, especially to the fifteen who took the dean's challenge.

For those of you who have not yet submitted a pledge card, I hope you will decide to make a pledge when you are contacted by alumni affairs. There are many reasons why you should decide to make a pledge. A couple of those reasons are:

- To beat Math! Last year, the pledge total for math was higher than that for engineering for the first time ever and was the faculty with the highest pledge total. Let's beat math this year and take back our title as the grads who make the biggest donation.

- Campsite Theory. The campsite theory states that you should always leave your campsite cleaner than you found it. This applies to the pledge as well. It's important that we make every effort to leave the faculty of engineering in a better state than it was when we arrived. This can be done through pledges made as part of the Plummer's Pledge.

I hope all of you take this into consideration when you receive a call from the people at Alumni Affairs and decide to make a pledge.

Staff Appreciation

# Presenting Winter 2004 Iron Warrior Editors and Staff

***Jeff Henry***

*4B Computer*

**Editor-in-Chief**

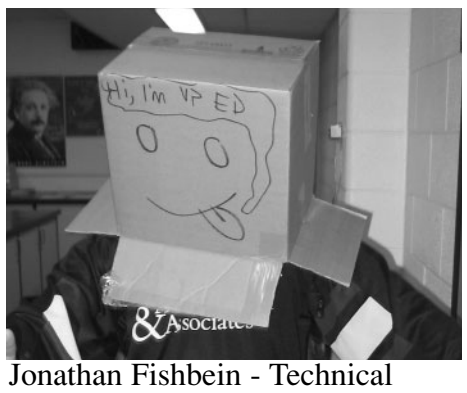
As another term of the Iron Warrior comes to an end, it is time again to reflect on the people without whom none of the five issues would have been printed. From supplying and editing content, through photo and layout editing, to bringing in much needed humour to the office, the staff was always there. After the deadlines or not, there certainly was never any difficulty filling the sixty-four pages of Iron Warrior.

From fitness reviews and WEEF propaganda to a mutant dog and a caffeinated view of the world, the Iron Warrior bids fairwell to long-time staff members. And while we will still be LowRiding our way through Fall 2004, I am sure that Andre will be encouraging all of the closet writers out there to step up to the plate and join the ranks of Iron Warrior staff.

For those of you on campus or visiting the Iron Warrior on the web this summer, look for John Olaveson and his staff to pick up the ball. If you want to get a head start so your writing skills will be in top form come September, I know John would welcome submissions on almost anything at iwarrior@engmail.

André Beltempo - Assistant Editor, Senior Political Correspondent, Incoming Editor-in-Chief

Afsheen Khan - Assistant Editor




Jonathan Fishbein - Technical Editor

Leanne Whiteley - Photo Editor

John Olaveson - Off-stream Editor-in-Chief, Senior Pearson Airport Correspondent

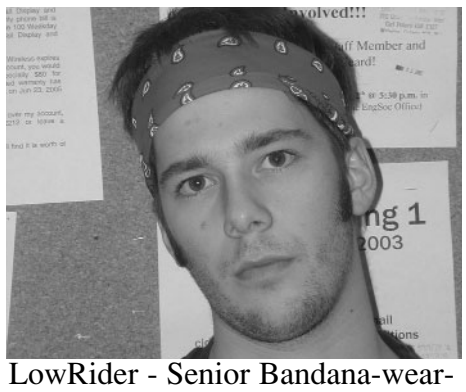
Katherine Chiang - Layout Editor

Matthew Ho - Distribution Manager

Kevin Quan - *Webmaster*

Michael Henheffer - Senior WEEF Propagandist

Maria Simoes - Senior Caffeinated Layout Instructor

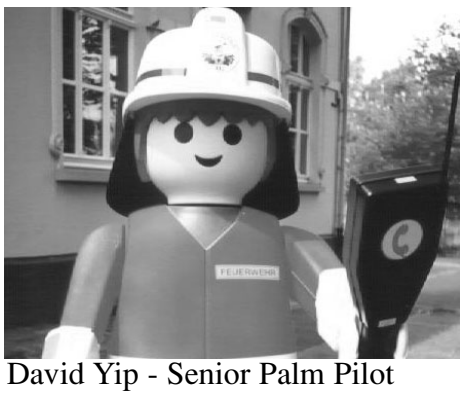


LowRider - Senior Bandana-wearing Advice-giver

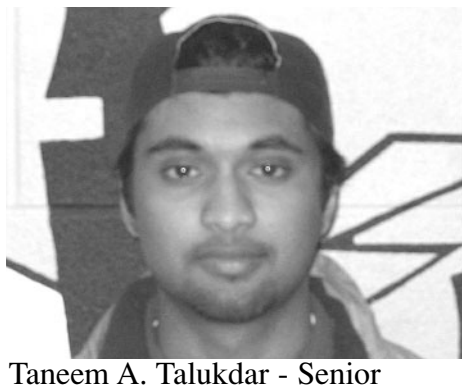
Ryan Bayne - Senior Mutant Dog Editor

Dan Foong - Senior Fitness Comparison Correspondent

Tsu Chiang Chuang - Senior Inquisitioner



David Yip - Senior Palm Pilot Editor



Taneem A. Talukdar - Senior Downloading Evangelist

Bryan Bell-Smith - Senior Copy Editor

## Jack Layton in the SLC

*...continued from Page 1.*

tion that "Education is not a market economy; it's a right." He pointed to countries like Sweden where the cost of educating and housing students is taken on by society and tuition is quite literally a foreign concept. Although he admitted free tuition in Canada could not be quickly realized, he emphasized that we should be increasing support for students not withdrawing it. Jack called for a National Education Act that would lock-in federal funding and ensure provinces spend the money on education.

Jack also took time to criticize the American missile defence program and Canada's potential involvement in it. Although the federal government denies it will lead to the weaponization of space, Jack pointed to Pentagon budget documents that call for billions of dollars in funding for research into space-based interceptors. He claimed Canadians would rather see money invested in space exploration instead of space militarization.

After Jack's speech people were invited to ask questions. Unfortunately, two people decided to give speeches instead of asking their questions and there was no moderator to stop them. A few people were still able to ask questions on topics like racial profiling, education, and the Kyoto accord - all major policies in the NDP platform. The campus Tories were supposed to have a few hard questions lined up but they never got asked. It would have been interesting to see Jack field them had he gotten the chance.

The speech was sponsored by the University of Waterloo Activist New Democrats (uwand@hotmail.com).

**Columns**

# UW Engineering Drama Presents: Romeo, You Idiot

*Patrick Brown*
3A Mechanical

But don't take my word for it. Go see the play and decide for yourself.

This weekend, the Engineering Society is putting on yet another great drama production. The play being performed is called Romeo, You Idiot, a parody on Shakespeare's Romeo and Juliet. It stars Christos Sarakinos as Romeo, and Melissa Cesana as Juliet.

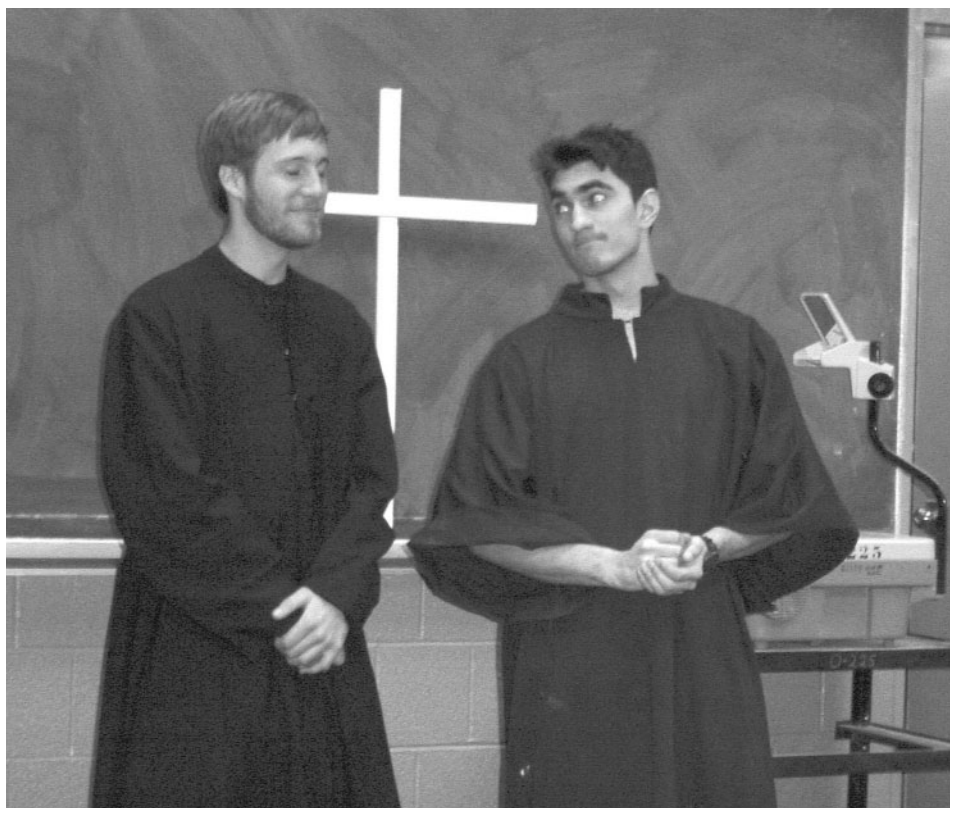
It is a play written by Tim Kochenderfer, the same man who wrote Canned Hamlet, another play performed by Engsoc Drama. There are a lot of laughs, as well as some cool action. Of course, the romance is a must.

If you don't know what to do on Friday the 26th of March, or Saturday the 27th (and if you do have plans, you'll want to change them), then why not have a night of theatre. The play runs on Friday at 7:00 pm, which means there is plenty of time for everyone to hop back over to POETS right after it's done for a little End of Term Pub. The Saturday performances are on at 2:00 pm and 8:00 pm. It's a great relaxer for the end of the term before the exam crunch starts, so come on out and have some fun.

It takes place in the Environmental Studies Green Room, ES2 286. Tickets will be on sale from 11:30 to 1:30 every day this week. Tickets are five dollars each, no matter who you are.

As producer, I would like to give special thanks to a few people. To Ryan Consell and Joseph Fung, the former director and producer, thanks for getting it going, and sorry you couldn't see it through (damn co-op). To John Leperre and Greg Linforth, thanks so much from all of us for taking on the director's hat so well on short notice. And special thanks go out to Yvonne Yip for putting up with the rest of us and all the problems.

And of course, we couldn't have a production at all without a cast, who are all listed below. Thanks definitely goes out to them for all the work this term to make this play the success I know it will be.



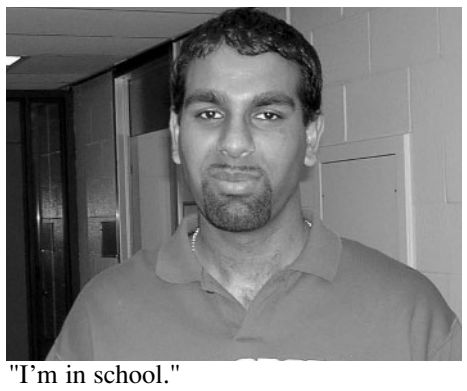
| | |
|---|---|
| Chorus 1 | Josh Hocy |
| Chorus 2 | Maria Simoes |
| Police Chief | Drew Morris |
| Mercutio | John Leperre |
| Benvolio | Matt Kaciak |
| Gregory | Patrick Brown |
| Samson | Harpreet Aujla |
| Abraham | Mat Ho |
| Montague | Greg Linforth |
| Lady Montague | Jiamei Bai |
| Romeo | Christos Sarakinos |
| Capulet | Dave Held |
| Lady Capulet | Lisa Rehak |
| Juliet | Melissa Cesana |
| Tybalt | Quoc Huy Le |
| Nurse | Kristina Hotz |
| Paris | Adam Schubert |
| Friar Lawrence | Dallas Card |
| Friar John | Adrian Bose |
| Servingman | Erica Dion |
| Page | Joske VanLeeuwen |
| Messenger | Joske VanLeeuwen |
| Police Officer | Sehzad Moiz |
| Drug Dealer | Karima Darssi |
| Servant | Sehzad Moiz |


# the Iron Inquisition

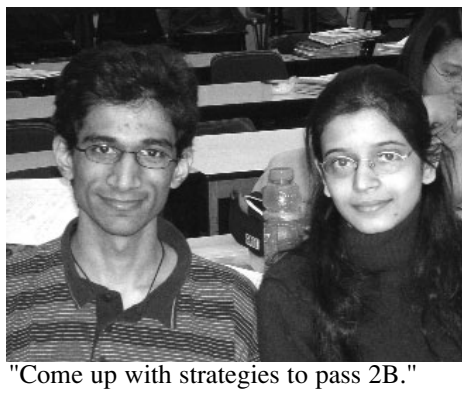
*Tsu Chiang Chuang,* 3B Computer

**What are you going to be doing in the summer?**

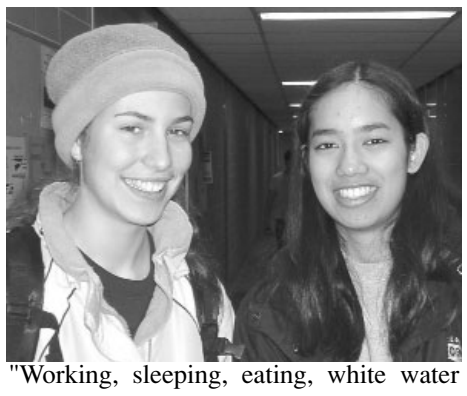
"Working at McDonald's. Want fries with that?"
Jessica Rocca - 4B Chemical



"I'm in school."
Rishi Anand - 3B Electrical



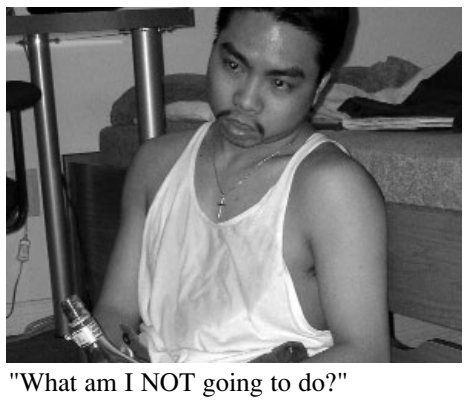
"Come up with strategies to pass 2B."
Monish Gandhi & Jasmine Shihn - 2A Systems



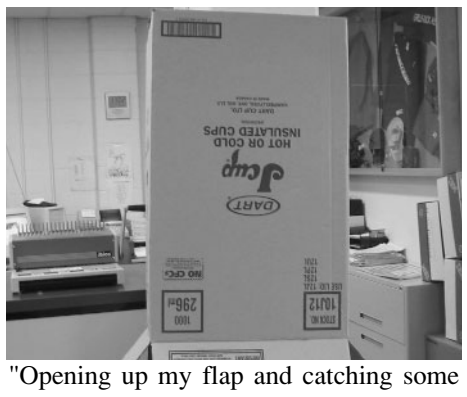
"Working, sleeping, eating, white water rafting!"
Tammy Low Foon & Laura Hough - 1B Mechanical

"Swatting flies…"
Keith Mo - 3B Electrical

"Celebrating 14 years of engineering studies."
Mark Vidler - 4B Civil



"What am I NOT going to do?"
Quoc Huy T. Le - 3B Electrical




"Opening up my flap and catching some summer rays."
Boxman - 4N Applied Box Studies