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the IRON WARRIOR

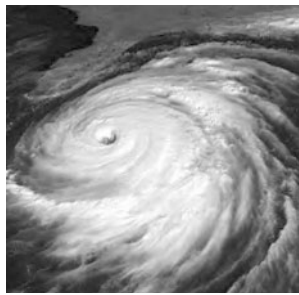
THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY

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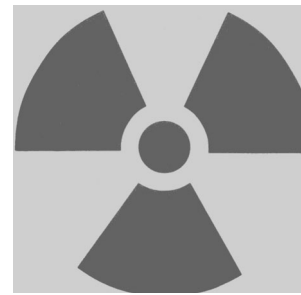
Our photographer
profile heats up

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Wondering about
the weather?

Page 3



Nuclear energy
reaching critical
mass!

Page 5

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

ENGWEEK, SCUNT, WILD SUCCESSES!



"Red Green would be laughing" - Another student is duct taped in the wall during the events of Engweek



"Frosh Submit" - Frosh during SCUNT submit to being doused with coke by the SCUNT gods. The gods were pleased.



"Extreme Volleyball" - Extreme Volleyball was one of the challenges during SCUNT. This event was widely appreciated by all teams

SE(x,y) Able to Sexify the Scavenger Hunt

Michael Buczkowski
2B Chemical

The Most Extreme Scavenger Hunt began on Friday October 1 at 12:00 noon with an action packed opening ceremony. All the teams came and gave an appeasing presentation to the 15 assembled gods. We laughed, we cried, and we booed team TA who gave us no respect. So the insanity began with great events running throughout the engineering buildings. The 9 teams who came out did an amazingly awesome job making this term's Scavenger Hunt so amazingly fun

for the gods and for themselves.

The day progressed and the water bottles in POETS began to fill up as the SE(x,y) [2A Softies], The FROSH Conglomerate, and The Nights of Ni-08 (2A Chem) began to run away with things. One of the Highlights of the night for the gods had to be when The Nights of Ni came and told us they had traded a pencil for three boxes of No-Name Macaroni and Cheese, then followed that up with trading the Mac and Cheese for a Couch. You can presently find this green and white couch located in POETS. Second on the highlight list had to be the Off-Campus headquarter visit to the FROSH Conglomerate. They were amaz-

ing with many games, food, and drinks to keep us entertained at 2:30 in the morning.

The Road Trip was a huge success with all the teams figuring out how to get to Newmarket given only the GPS coordinates. As the night wore on the gods began discussing who was in the lead of the event and I don't think any of the teams will ever know how close they each were to winning, as we had a 1 hour discussion in POETS.

The closing ceremonies were a huge success with memorable performances by the Math team, SE(x,y) with their outstanding rap, and all the other teams. After 24 hours of sheer insanity and much

deliberation, the decision was handed down from the lofty heights of the POETS balcony.

The Most Extreme Scavenger Hunt Victors were the 2A Software class, second place going to the FROSH Conglomerate, and an honorable third place going to the Nights of Ni-08 and the Mechalomaniacs. Thanks to everyone for making such an amazing Scavenger Hunt. As gods we had an amazing time, and without all of you it never could have happened.

Additional pictures of SCUNT on page 4

"My zipper is not open. . . even if it were, the cage may be open, but the beast is asleep. . ." Prof. Renksizbulut - ME 353

Letter from the Editor

Andre Beltempo

3B Mechanical

Editor-in-Chief



Well, with the U.S. election looming on the horizon, we've all got to wonder why we care so much about who the leader of a foreign country is. Let's face it, Canadians are obsessed with Americans. These days, it has become fashionable to be anti-American, but regardless of present feelings, Canadians have always been keenly aware of the goings on to our South. Why is this?

Simply put, the Canada-U.S. relationship is entirely unique in the history of the nation state. Historically, there has never been the case of two countries who have been so geographically connected, yet so unevenly balanced. In the days of Raison d'Etat, when the entire foreign policy of countries was dictated purely by the Darwinian desire to gain advantage, if a country with the resources and population of Canada were located along a common border with a country with the resources and population of the U.S., conquest would inevitably result.

But, we live in a more civilized world, where foreign policy is ostensibly done with a higher moral conscience, as policed by the U.N. The school of thought with respect to countries today is that bigger countries shouldn't invade smaller ones because it's not nice, and tends to result in death and destruction. And so we Canadians find ourselves in the peculiar circumstance of being located next to a country so powerful, in terms of military, economy, culture and global influence, that we are absolutely and literally at their mercy. If they decided to invade us, we'd lose. If they decided to embargo us, we'd lose. They already culturally dominate our ways of life, as any European would maintain. Their only reason for NOT invading us is that the U.S. people have the firm belief that they only attack countries who do them harm, and Canadians haven't really done the U.S. any harm.

Canadians need to accept that we will never be directly 'better' than the U.S., that our fortunes are inextricably linked, and that we should use our own Canadian strengths in a Canadian way to assert ourselves, rather than selling ourselves as "Not American".

Canada is the second largest country in the world by area. It also contains a heck of a whole lot of resources. Basically, we've got a bit of everything, and a lot of some things, such as wood, oil, coal, natural gas,

zinc, nickel, aluminum, etc. Despite all these wonderful resources, the vast majority of our landmass is frozen tundra. The reality is that 90% of our population lives within 100 miles of the U.S. border. We're not the "True North Strong and Free", we're the "43rd to 49th parallel Strong and Free". Canada, at least the Canada that you and I and 95% of Canadians are familiar with, is more like a 200km strip of land closely following the U.S. border. The reason for this is that it gets frickin' cold here in Winter, and the closer we are to the equator, the less brutal the winter will be. Unfortunately, it also means that the vast majority of our bountiful land is 'wasted', since no one in their right mind will live there. What does this mean?

Canada will never be as 'big' as the U.S. Ever.

Unless the Union dissolves, our population will never exceed theirs, as people are going to prefer living in a temperate climate than a tundra, so our land will never be as well utilized as theirs and we will never supercede them. Accept it. Therefore, Canadians have no business competing directly with the U.S. There's no chance, they'll always win. Whenever we see a Canadian actor or Canada is mentioned on TV we go absolutely nuts, because it validates our existence in the eyes of the U.S. This makes us feel that they acknowledge us. The fact is that they don't, and this isn't really a bad thing. The key here is not to beat them at their own game, since we can't. Canada is good in specific areas that the U.S. isn't, like medicare, for example, or gun control. We've got to capitulate on our strengths, rather than compete with the U.S.

The largest cross border relationship in the world exists between Canada and the U.S., with over 1 billion dollars of value crossing the border a day. Canada has a trade surplus with the U.S., and our industrial systems are linked on a fundamental level. Globally, we are located close to one another, and our demographics are fairly similar. This means that on the whole, Canada's economic fortunes are tied to the U.S. If they go to pieces, so will we. Wishing for the fall of the U.S. would be wishing for our own destruction. Therefore, instead of mindlessly undermining them on the global stage, we need to encourage them to see things in a different perspective, without immediately shooting down what they say as imperialistic, self-serving or destructive.

That brings me to my final point, that Canadians need to stop worrying about being noticed by the U.S., and start acting like a real country of our own. After World War II, it looked like we were a real country of our own, a full partner in NATO, with a large military presence in Germany, a

founding member of the U.N, and distinctly separate from the U.K, our founding country.

Unfortunately, we then became so overshadowed by the strength of the U.S. that ultimately, we became obsessed with them, and our entire Canadian patriotism revolved around matching American patriotism and self-pride with the knee-jerk "we're not American" response. Few countries in the world understand this, and fewer respect it. The British do not base their existence on the fact that they are not French. The Germans don't say "We're not Italian." Of course they're not, everybody knows this already.

Canadians are exceedingly afraid that everyone thinks they are American, and struggle with making the distinction, because otherwise we are what we revile. The standard advice of "be yourself, and let others judge you as they will" can apply entirely to the Canadian situation. Right now, the first thing we say is who we're not. We shouldn't concern ourselves with our identity, we should merely be who we are, and let the chips fall where they may.

Canada has many great features that the U.S. does not. By far, it is the most successful example of a multicultural country in the world. 47% of people living in the GTA were not born in the country, and yet all live, work and play side by side, without resorting to violence to solve their problems. That's absolutely fantastic. The fact that people, who, were they in their home countries, would probably be exposed or resort to violence, can live together is proven. In fact, the only time serious conflict arises is when the home country situation is discussed. This highlights the fact that here in Canada, there is no issue between people with differences. We have great experience with holding together a country of varying backgrounds and various opinions, as the classic English-French debate has raged. The fact is, although there have been close calls, we are still here, and we've been holding ourselves together for 130 years. That is a great example to the world, especially for other large countries with significant minorities, Iraq, Turkey and Russia being prime examples. No country in the world has lasted this long with such a large minority, and countless smaller ones and yet not only survived, but thrived together. Canadians should export this vision to the world.

We should show them that there is hope, and that we are an example of diversity at it's best. If we continue to waste our time asserting our 'non-Americanism' we lose, and the world loses the benefit of our uniquely Canadian experience.

the IRON WARRIOR

The Newspaper of the University of Waterloo Engineering Society

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Contributors

Michael Buczkowski
Emily King

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Dear LowRider: UW_LowRider@hotmail.com LowRider is Low on Witty Titles!!

Dear LowRider,

I'm pretty scared about midterms. I barely made it through my last school term and I want to do well so that I'm not going to go crazy at finals. How do you study for MTs? What should I do?

You Rock!

-Squeakin' through second year

Dear Squeakin',

Most people will tell you the best thing that you can do is read all of your notes, your textbooks, old exams and your friends' notes just in case you missed something – but not this advice columnist! What you should be doing is getting plenty of sleep, partying down as much as humanly possible, and rely on your natural charisma and luck.

Let me give you an example: Let's say you're a Geo (no offense), and your prof asks you something like "What's the difference between a rock and a cobble?". Or, if you're an Elec (tough break,

nerdo) your prof asks you how many electrons make a byte. Well, what you want to do is put in an equation or 2, maybe your favourite trig identity, then start your paragraph with "As mentioned in the lectures..." followed by some crap.

Another good trick is to never use equal signs. Try to use the more ambiguous approximately equal sign with the dot on top so that you're not really wrong, exactly. As Larry Smith would say, I wish you great success!

-LR

Dear LowRider,

I grew up in Waterloo so I'm living at home while I'm going to school at UW. Living at home is such a drag. Last week, my Mom threw away my best porno mag. My parents say stuff like "I'll kick you outta this house if that's the clothes you're gonna wear" and "I'll kick you outta my home if you don't cut that hair" all the time. Worst of all, one time when I'm reading the IW, my Mom busted in and said "what's that paper?" So I says:

"Aw Mom, you're just jealous it's the Low-Ri-Der!" Please help!

-Anon.

Dear Anon,

This is a classic, textbook, old school-type problem. I'll give you the same advice that many other LowRiders have given since the mid 70's. You are obligated to skirmish for your entitlement to hang loose. In the 80's people used to say stuff like "you gotta fight for your right to party". But my way is much more eloquent, and that's what really matters, is it not?

-LR

Dear LowRider,

I know that you're really smart. Would you mind telling me what you're doing for your fourth year project? I'm running a few weeks behind schedule and I'm looking for some inspiration.

-4A Mech

Dear Mech,

I'll tell you, but only because you don't have a hope in hell of replicating my project and stealing my idea. What I'm doing, see, is using 2 (two) first order differential equations to model the chemical phenomena and coolness (one DE for each!) of a paper mache volcano that runs on vinegar and baking soda. I'll get bonus marks for sure because I stole some red food colouring from my mom at Thanksgiving to make the lava look realistic. I'm pretty sure that this is some cutting edge stuff because I can't find a single relevant journal article.

I know that this probably didn't help you much, and just made you feel stupid. However, you just need to find whoever it is in your class that has the highest smartness to coolness ratio and go with them. Or, failing that, go with the hottest chick in the class, then comfort her when you guys get a crappy mark (you know it'll happen) and you're in for sure!

-LR

Affairs with Alumni

Money, raises and corporations:

Anonymous

Presumably Graduated

Last week, I discussed the topic of outsourcing. A few days after publishing the article, it was reported that even the Lord himself approves of outsourcing. How else to rationalize the Roman Catholic Church's practice of outsourcing mass sermons to India. Apparently there are no holy cows in the business of outsourcing.

I need a raise

Private enterprise, as the theory goes, exists to generate wealth for its owners and, in the case of public companies, its shareholders by processing resources and selling outputs to consumers. As a consequence of this activity (note that it is indeed a consequence and not an intention), modern jobs are created and occupied by individuals. Although it is not necessarily a stated goal, it has always been the un-written rule that whenever the activities of the corporation are particularly fruitful, that the corporation would allow everyone to gain from the benefits.

When one remembers that employment of individuals is a consequence of corporate activity and not a direct goal (obviously there are exceptions where employment is itself the product of the firm or in particularly philanthropic corporations which strive to satisfy the needs of its employees above the corporate "bottom line"), it is strange to observe people as they become dissatisfied when corporations, reaping windfalls of cash, refuse to share equally – or in some cases not at all – with the corporations' employees. Even still, while it's often not the stated aim of the company to make its employees richer, "sharing the wealth" has always been viewed as good corporate citizenry.

Recently however, this culture of sharing has been coming to a grinding halt as evidenced by the constant barrage of stories all indicating the pay raises for upper

executives are beginning to outpace the bottom level workers at startling rates.

The BBC recently reported that directors and the likes saw their pay raise at over three times the average workers' pay raise. In addition, The Guardian recently surveyed for the worst "pay gap" companies – companies with the greatest difference between the upper and lower pay scales – and found examples such as Tesco which can only find 4.33 million pounds to pay its CEO. That's a gap of 355 times the bottom worker in the company.

So what, if any, is the moral of this story? Just another case of the rich and poor or is there something which can be taken from this?

Firstly, I suppose, is to remember that, for most companies, paying and "taking care" of its employees financially is not what the company was likely designed to do. If a company has to pay its employees money in order to make more money for its owners and shareholders, then so be it. Otherwise, don't be fooled into thinking that companies are generally in it for the "good of the people". Remember to watch for your interests in the business world since, in most situations, you'll be one of the few doing so.

Secondly, don't be fooled into believing that you, as an employee, are "worth more" or (although not many will admit to it) "worth less" than what you are being paid. The harsh truth of it all ends up being that you are worth whatever you can get paid and that a title or specific experience make you worth something. Ultimately, you get paid what you can convince someone to pay you.

I just wish I was as good as Robert Milton (CEO of Air Canada) is at negotiating my own pay. With Air Canada entering bankruptcy, Mr. Milton still managed to take in 1 million dollars in salary and a total of 5 million in total compensation. Not bad for a company that is basically going broke.

I need a pay raise.

Hurricane 2004

Why so many?



Hurricane Charley, hurricane Frances, Hurricane Gaston and hurricane Ivan are just some of the major hurricanes that have ravaged or come close to hitting North America. Almost bi-weekly, this past summer, it seemed like the poor State

of Florida was being hit

by yet another hurricane. Is it just me or did this year seem particularly bad in terms of hurricane strikes? Are the hurricanes this year more powerful? Or are there just more of them?

So what's going on?

First, we must know how a hurricane works and how it forms. When

converging winds and thunderstorms around the equatorial areas move out to warm waters, the energy released by the condensation of water vapour warms the air which rises and is replaced by the humid air from the ocean. When this humid air gets high enough it too will condense and the cycle continues. This, in conjunction with the Coriolis effects and ample supply of warm water (which acts as fuel for the soon-to-be hurricane) produces a huge cyclone of continuously condensing and evaporating water.

Because of the Earth's rotation these super tropical storms will tend to move in a north-westerly direction. As hurricanes move further north their fuel of warm water will be replaced cooler waters which will rob the hurricane of much needed thermal energy. Also, as the hurricane heads further inland the air will be more arid than over the ocean, so it will eventually dry up. Unfortunately, before it dies down over

land, much damage and loss of life may be caused.

So what is it about this year that the conditions seem most favourable for these cyclones of destruction? One factor is known as the *Atlantic multidecadal signal*. It is basically an atmospheric condition along with warmer ocean temperatures. They show up once in a few decades. The most recent ones cropped up around the mid-1920's and the mid-1960's. It is a long term pattern that, currently, favours more hurricanes with greater severity.

During these periods the formation of

hurricane can be affected by patterns such as those caused by El Niño. These patterns tend to suppress the formation of tropical storms. This year, though, the weak El Niño that is beginning to build in the eastern tropical Pacific had little effect.

The conditions are likely to continue into

next year's hurricane season. We can expect a few more biggies to thrash Florida and several other southern states at around August and September. Those from the Maritime Provinces might want to give their families fair warning when summer comes around again.

Until technology advances to the point where we can control the weather on a near-global scale, there's not much that can be done about hurricanes or the conditions that tend to spawn them. We can only keep our ears open and our eyes fixed on the satellite radar in hopes that people will be given enough time to head to safety.

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“Until technology advances to the point where we can control the weather. . . we can only keep our eyes and ears open. . .”

Events

SCUNT Photographs



Who Needs SCUNT, Cross Campus Capture the Flag is where it's at!

Carolyn Sutherland
1A Mechanical

On the Friday evening of October 1st at 7pm in RCH 101, students and alumni of all ages dropped by to prepare for 3 hours of fun FUN FUN! Perhaps you might have seen the coloured string duct-taped to the ground, or the people who were sporting pinnies or coloured yarn sneaking about that night. The event? Four Way Cross Campus Capture the Flag! (For those unfortunate souls who don't know what Capture the Flag is, I only have so much typing space so please visit the CTF website for the rules! The address is at the end.)

The entire campus area within Ring Road was divided into four pieces and colour-coded. The Yellow team controlled the Northeast corner (general services), while the Red team ran amok on the Northwest (SLC/PAC). The engineering section was Green territory while everything artsie was Blue turf.

The organizers of this spectacular event were The Guardians, team captains of the four teams from the previous year. The Guardian of the previous year's winning team (Yellow) provided all participants with an overhead presentation of the rules and a map of each team's turf. Unfortunately, none of the pinnies were ready for that night, so people had to be divided according to what colour they were wearing, and those with no colour and no pinnie resorted to tying coloured yarn around themselves. The Green team

even had to wear both green AND white pinnies, as there were more white pinnies than there were green!. Then each team held a meeting to decide the most strategic places to put their jails and their flags. Lastly, team names were chosen. Green, under the Saudi Arabian flag, were the Evil Leprechauns, while the Red team, under the old Soviet Union flag, chose the extremely original name The Soviets. Alas, I have forgotten the names of the Blue (United Nations flag) and Yellow (Scottish Standard banner) teams, but I assure you, they were no match for the mean, green, engineering team's name!

Each team then headed off to their respective flag locations and waited for their captain to return from a meeting with the Guardians in the grey Neutral Zone, a little triangle enclosing the mini-garden west of RCH and in the middle of all four sections. Carrying a flag and cellphones, as communication devices were allowed, the Green team (my team) assigned people with scouting duties and jail/flag-guarding duties. Then once our captain returned, along with the Guardian who was on the previous term's Green team and would be helping this term's Green team out, the game began! I set off with a married alumni couple for Yellow turf, our prime target because of their damn communication devices; AM-FM Radios! Note that for the rest of the game many people considered yelling "PARANOID!" at Yellows just to watch them frantically radio for backup!

But despite the paranoia, the Yellows were very well-defended and when my

scouting group unknowingly stumbled upon their jail while exiting DC, the Yellows gave chase and split us up. All three of us made it back to Green turf safely, only to find that our guardian was planning

an offence on Blue. About 10 Greens (including me) were assigned to operation 'Capture-Blue-Flag' while the Greens with cellphones stayed behind, because more Greens on scouting duties were text-messaging back any info they could get about the other teams flag and jail locations. The 10 Greens headed off to Blue territory via the underground tunnels, but unfortunately were ambushed while in Hagey. Me and the remaining Greens headed off to the PAS, where Blue's flag was, but we split up when some tiny, speed-crazy Blue (in sandals!) caught about half of us. This guy was ridiculously fast... Anyway, we were escorted to the Blue jail where we found the rest of the 'Capture-Blue-Flag' Green assault team text-messaging our Guardian to let him know his plan sucked. Fortunately, a brave Green snuck past the Blue guards and we all got a jail-



"Soviet Union" - The Red team, appropriately, called themselves 'The Soviets' after their banner, depicted above

break! Let me say that a jailbreak didn't mean a free walk back home. Nope, everyone in jail ran off in every which way in an attempt to escape. Utter pandemonium! Me and my team captain ran off in the direction of the Blue flag, but while trying to avoid those damn spotlights outside of the PAS, some Blues saw us and gave chase. We ran away at full speed but I soon noticed that my fellow Green was not following. Turns out she was trying to avoid the pine tree branches but ended up running into an actual tree. Sadly, I had to keep going because you have to leave your dead and wounded behind in these situations.

So after heading back to Green turf and being sent on another offensive mis-

Continued on page 10. See Cross Campus Capture the Flag

NFL 4 Week Update

Manning looking to bring the Colts to the Superbowl

Brent Carrara
3B Software

Well my deepest apologies to those of you I had misled and misinformed in my last article: World Cup Review. The checking line that I incorrectly identified as Joe Thornton, Shane Doan and Kirk Maltby was not in fact incorrect. The correct line was Joe Thornton, Shane Doan and Kris Draper, my deepest apologies to the fans and family of Kris Draper. Another mistake was made in the spelling of our youngest defenseman Jay Bouwmeester's last name, again my deepest apologies to his many fans and family.

That bring us to this issues' column, an update on the NFL. Well, another high tempo season is upon us, we are now 4 weeks into the season, and there are some big

surprises that have come out of the woodwork. Probably the biggest surprise is the disappointing play of the Kansas City Chiefs. What happened to the 9-0 start we saw a year ago? Although they did go on to lose 3 games and get blown out by my Indianapolis Colts in the first round of the playoffs, who could have expected a 3-0 start from Vermeil and his boys? Very disappointing. On the other hand, teams like the Jets and the Falcons have returned to the stature they have been promising for years. Michael Vick seems to be back to 100%, dazzling us with his bursts of speed and cannon arm over the first 4 weeks, leading the Falcons to a 4-0 start. After signing a huge contract in the off season, youngster Chad Pennington is back to the form he showed halfway through the 2002 campaign, leading the Jets to an early 3-0 start.

However, the biggest surprise in my mind shouldn't come as a surprise to anyone really, and that is that the play of Kurt Warner for the G-Men has been great. After not winning a football game for 2 seasons and being hampered by a thumb injury on his throwing hand he seems to be back to his near MVP status, throwing only 1 interception in his first 4 starts going 3-1. Lets take a look at the top and bottom 3 teams in the NFL after week 4:

#1 Indianapolis Colts (3-1): Peyton Manning has taken control of this team and in all likelihood the NFL. The Colts have been getting increasingly better over the years since Peyton took over the reigns of the Colts in 1998. They are aging however, Marvin Harrison, their go-to receiver and Edgerrin James, their number one back, as well as Manning are starting to get long in the tooth. Their time is now and they need to act

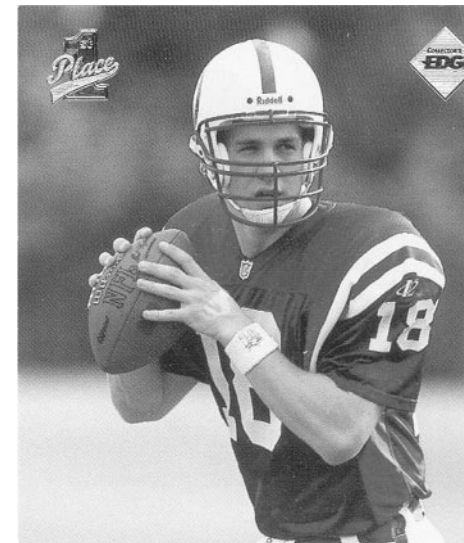
on it fast before they are too old to push for the Superbowl. After week 4 Peyton has to be considered a favorite for his 2nd consecutive MVP trophy, he is 88 or 131 for 1123, with 11 touchdowns to 2 interceptions, including a 5 touchdown performance against the lowly Packers. His rating as a passer is a ridiculous 115.4. Peyton and the Colts' time is now, the Superbowl is theirs for the taking.

#2 New England Patriots (3-0): After squeaking out a last minute win on Sunday vs. the loss-prone Bills with a final moment fumble recovery for a touchdown to seal the deal, the Patriots fall into 2nd in our top 3. Tom Brady is up to his old tricks with an impressive passing sheet, with 852 yards and 7 touchdowns, nowhere near Manning's numbers, but in New England there is no need for Peyton Manning type

numbers. Bill Belichick has installed the most all around team in the NFL. Not only can these guys pass the ball and stuff some of the best offenses in the NFL, including the Colts, beating them in week 1, but now they can run the ball with the off season acquisition of Corey Dillon. Dillon so far has run for a respectable 323 yards and a measly 1 touchdown, however, his role on the Pats is not to run the ball for Jamal Lewis type yards or Priest Holmes type touchdown numbers. The Pats are the defending champs, but if they face Peyton and the Colts come January they'll be watching the Superbowl spectacular from the comforts of their homes instead of participating in it on the field.

#3 Philadelphia Eagles (4-0): The Eagles are the 2004 version of the 2003 Chiefs, starting 4-0 and showing no signs of slowing down. The Eagles have been one of the most impressive offenses in the NFL after the first 4 weeks. High maintenance receiver Terrel Owens has proved to be a great off-season acquisition, leaving the 49ers after many great seasons as their #1 receiver, he has found a new home in Philadelphia. TO is already tied for the league lead in touchdowns with 6, and possesses 364 yards receiving to boot. But TO wouldn't be putting up the numbers like he has without our other candidate for early season MVP, Donovan McNabb. Donovan has been exceptional in throwing for a league leading 1168 yards on 98 completions with a sparking touchdown to interception ratio of 9 to 1. Those numbers rival that of Peyton, however McNabb's passing rating falls short at 110.5.

Honorable Mentions: Honorable mentions have to go out to the Falcons who are 4-0, however, their competition has been anything but impressive, keep an eye on their record over the next few weeks to see if they can stay up to snuff. The Seahawks at 3-0 also deserve honorable mention,



with Sean Alexander in mid-season form with a league-tying 6-touchdown record. However, the Seahawks play in a very weak division, so keep an eye on them as well.

#30 Green Bay Packers (1-3): Once the powerhouse of the NFC and the NFL, the Pack have fallen on extremely hard times. After being outgunned in Indianapolis 2 weeks ago it seems that all has gone wrong with the past Super bowl champs. The aging Brett Favre has been hit often and hard. After being knocked out of the game against the Colts, he was again knocked out of the game last week with concussion-like symptoms. He was allowed back into the game and threw a touchdown pass, even though after the game he told reporters he didn't remember throwing the pass. These are dark and dreary days in the land of the cheesehead. Mike McKenzie, their Pro Bowl defensive back has been traded to the New Orleans Saints for a prospect quarterback, after feuding with the Green Bay Packers since the off-season. Brett Favre is the league iron man,

Continued on page 12. See NFL season shaping up nicely, Packers still in trouble



Sanford Fleming Foundation
E2 3322, ext 4008, sff@engmail
www.eng.uwaterloo.ca/~sff

Debates Reminder

Please contact your department undergraduate office if you are interested in participating in the Sanford Fleming Debates. The winners of the faculty finals receive \$100 each and the runners-up receive \$50 each.

DATE November 1, 2, 3
TIME 11:30 – 1:00
PLACE E2 - 3324

Finals: Friday, November 5
Noon
Outside Poets in CPH

Refreshments will be served at the finals

Everyone is welcome

Student Travel Grants - Available to students participating in technical conferences. Please check our web site for further information and application forms.

Emergency Loan Funds - SFF has made available funds for short-term emergency loans, interest free for 90 days. These loans are available to engineering undergraduates, on either an academic or work term. Contact the Student Awards office for further information.

ENGINEERING SOCIETY EXECUTIVE REPORTS

“Every man dies...but not every man really Budgets”

Rajat Suri

**Vice President,
Finance**

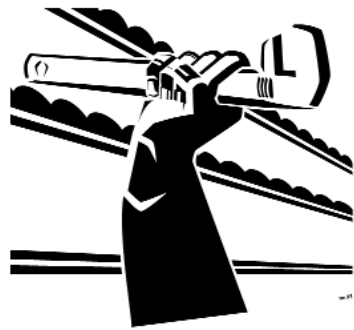


So the words from William Wallace, a famous dude who, because he didn't budget for the fall term in the Scottish Highlands one fine day, was captured by the English and summarily castrated, disemboweled and killed. This could easily have happened to me too, but I'm smarter than him. For me the quote goes "They may take my life....but they will never take. . .my BUDGET!. And now you know.

Fourscore and seven hours ago, the budget was presented in front of a packed audience at the EngSoc meeting. The atmosphere was tense, yet reflective. What kind of budget would he present today? They all wondered. Would it be fast-paced and packed with thrills, or would it be a softer, gentler type of budget? It turned out to be both. The budget was presented, and people asked their questions in awe. In the end, there was not much change to be made, but if you want a change, I ask that you email me. If you

want to add in a Budget, fill out a request form, you don't get preferential service.

Meanwhile written donation proposals are due Oct 23rd, I will let you know of the format you need to send it in soon. We're giving out a lot of cash this year, about 3000\$ worth so make 'em good! The Budget will be read and hopefully passed next meeting so please be there to vote!! Lastly, if anyone wants a cheque signed, please just leave it on my desk. Don't go running after me, I know I'm a sexy guy but honestly it's a pain finding me. I check the orifice often for cheques. If you want a cheque written, I will do all cheques from 11:30 to 3:30 Wednesday afternoons so let me know before then or it won't be cut. Anyways, toodle-oo!



Online Course Critiques?! The enormity of it all!

Jonathan Fishbein

**Vice President,
Education**



Drum roll, roll please... and may I present, Exec Report Numero trois! (That's number three for those curious.) Before I begin, I've been getting some comments about the numbering of these reports. Some people have come up to me and said, "Hey Jon, how come you called your last exec report 'Exec Report number 2' when clearly it was the first Fall issue of the Iron Warrior?" To those of you baffled by this question I will answer that since I had to write an Exec report for the Frosh Issue, that counted as Exec Report number 1. I mean it wouldn't make sense if that was exec report zero, would it? A cat's a cat, a bat's a bat, but that's enough of that, let's get on with the story.

Probably the biggest thing on the education radar since my last report was the completion of the proposal for an online course critiques result system. Those of you who were at the last EngSoc council meeting would have seen the summary of the proposal that I accepted for council to adopt. You'll all be happy to know that council adopted the proposal unanimously (meaning nobody voted against it) so the proposal was bound and submitted to the faculty for approval. For those of you who missed the council meeting or have a really short memory and can't remember what I am talking about, the report should appear in its entirety somewhere in this issue. Once we hear

back from the faculty, our implementation plan will have us starting development of this system for the remainder of the term so it can be online by the beginning of the winter term. Stay tuned for late breaking course critique updates.

The second big thing happening on the education front is the launch of the Ontario Undergraduate Student Alliance's (OUSA) "A Bright Future Depends on Higher Education" campaign. For those of you unaware, OUSA is your provincial lobby organization which lobbies the Ontario government on behalf of undergraduate university students. I encourage all of you to check out their campaign website at <http://www.abrightfuture.ca/> to see what initiative OUSA has cooking for all of us. Also since we're in a website mood, go check out <http://www.raereview.on.ca> to see what former Ontario premier Bob Rae and his Ontario Government sponsored commission on higher education are up to.

In smaller but equally important news, PDENG is in full steam ahead mode so the committee can have all the materials ready for when you '09s start your first co-op term. EngSoc is also looking at implementing an anonymous, department and academic term specific online co-op salary survey. This project is being investigated by my educational assistant Tommy Wong and if anybody wants to help him out, feel free to e-mail him at wtwong@engmail.uwaterloo.ca.

Well this report is coming close to the end of the Word page, which means that it's time to bring this exec report in for a landing. I hope your experience reading this report was just as fun as my experience writing it!

News from the Ex Front

Nick Lawler

**Vice President,
External**



Can you believe that midterms are just around the corner? Neither can I. Well out on the external front, I only have a few things on the horizon. The 14th National Conference on Women in Engineering (CWIE) is happening November 19th to 20th at Queen University in Kingston. Waterloo will be sending a delegation as per usual, and I need delegates to attend. The conference encourages discussion between participants as gender-related matters are challenged. Throughout the two-day conference, keynote speakers will offer insight into the engineering world and provide a unique perspective on the challenges of being a woman in the engineering field. Both men and women

from all across Canada and the United States are welcome. Apply on the EngSoc website if you are interested, applications are due October 22, 2004. More on the WIE front, the local WIE Chapter is holding a social night ON October 26th.

The PEO is considering changing the way that experience is measured for undergrad and pre-professional engineers. They are interested in what undergrad engineers think. Please go to www.engineeringstudents.on.ca and fill out the short online survey. The more information that the PEO gathers the better you will be represented when they decided to make changes. Some things that have been suggested are reducing the experience time after graduation to two years, as well as merging the Student Membership Program (SMP) with the Engineer in Training (EIT) program. This would allow a smoother transition into the professional world (getting your P.Eng). For more information about how to obtain you're P.Eng, and what it means to your career visit, www.peo.on.ca.

VP Int - Stag & Doe

Kate Kelly

**Vice President,
Internal**



Before I begin my normal happyfuntime Exec report I'm just going to explain a few reasons why I have the most fantastic adventures :D.

Firstly, going to a stag and doe (as I understand it, it's a way for the bride and groom to raise money? It also seems to double as a ballooooooon hat party and is lots of fun. So what do you do at a Stag and Doe? Well, first you make really funny cool ballooooooon hats (see figure 1).

Figure 1. Balloooooon hat



The second thing to do at a stag and doe is win the 50/50 draw and use it all on BEVERages. (\$63!!! How did I use \$63!?!?)

The third thing you do at a stag and doe is stop the country music that is playing and throw on some good tunes! Well, until the people who requested the country music come back that is.

Finally, the last thing you do at a stag and doe is use that fantastic hat to pick up, or be picked up.

Also, something to remember, you never know what strange things you'll have brought home that night and leave for your roommates on their door knob.

Anywho, on to my exec report: I hope Turkey day was good J I know mine was! (mmmmmm organic turkey, I named it fluffy!) So, on Thursday October 14th it's a super busy day! Not only is there a fantastic

dark room workshop going on at 5PM in RCH 225 (go go go!) but there is also Oktoberfest Student night at Bingemans, tickets are 10\$ which gets you a bus ride on a double decker bus from campus to Bingemans and back! But wait! There's more! Not only does the 10\$ get you the bus ride! It also gets you IN TO Bingemans! (no! I'm not lying!) Hopefully a number of other schools are going to be there too! (Guelph, UofT, Western...you get the idea). We're also into midterms (booooo) so not too much is happening.

The third EngSoc meeting is happening Tuesday October 26th, same bat-time, not sure which bat-place.... And on Friday October 29th, a Halloween Themed MOT will be happening in POETS with live music! (ohmigawd!)

On October 30th (that's a Saturday) There will be Swing and Salsa lessons, and the first ever EngSoc Curling Bonspiel...sign up for both will be in the Orifice! Look out for more details! Semi-Formal and Shadow days are coming up after that! Let me just leave you with two thoughts, firstly Presidential Drin---debates are lots of fun if you bring along your friend jack and listen for key words like 'terror' .And regardless of what Rajat says I am obviously the most important and wayyyy cooler :D haha

**ENGINEERING
SOCIETY**



Did you know you can earn valuable P**5 points for volunteering time at the C&D? Email Mary Bland at mbland@engmail.uwaterloo.ca to schedule your shift.

Phone-booking: Interview with the phone-booker



As Phonebooking has expanded and spread its influence across the nation, it was only a matter of time before we, at the Iron Warrior, interviewed one of the creators of Phonebooking, Matt Strickland. For those who do not know, Phonebooking started off as the simple act of beating someone senseless with a phonebook. However, over time, this sport has evolved to something far more complex. More information can be found at the official Phonebooking site, www.phonebooking.com. And thus I start my interview with Matt Strickland.

"So, Matt, what exactly inspired you to start Phonebooking?"

"Well, Ed, it started off when me and Chris were arguing about how every noun can also be made into a verb, such as egg can be made into egging. So I asked, what about phonebook? In which Chris responded with Phonebooking. I asked him what phonebooking was and..."

And thus out of the dark and damp dungeon that is Strickland's house was born the sport of Phonebooking. I mean if you think about it, basketball started off as someone trying to toss a ball into an apple basket. Who knows, maybe a hundred years from now Phonebooking will be in the Olympics. Anyways, back to the interview. My next question was why use a phonebook? I mean, why not use something like a text book or any other form of literature for that matter? We can have Econing or Shakespearing. The answer was that phonebooks are cheap, plentiful and can be found everywhere. I immediately thought about using a stack of Imprint, but then Strickland mentioned quality as well. So we went on with the interview.

"Do you have any Phonebooking advice for beginners?"

"You first have to start a routine of

Continued on page 13. See Phone-booking creator.

Online Course Critique Proposal

1.0 Introduction

The Faculty of Engineering and the Engineering Society have enjoyed an exceptional partnership regarding the Faculty of Engineering's Course Critique system. The system generated through the teamwork of both the Faculty and the Engineering Society served as an innovative model, later copied by other faculties on this campus. The original course critique system has stood without a major update since its inception. The purpose of this proposal is to modernize the system, effectively bringing it in to the twenty-first century.

This proposal will outline a new course critique result delivery system. Currently, one hard copy of the course critique results is given to the Engineering Society for view by the engineering students at the university. Although this result delivery system may have been adequate in the past, students have recently requested better access to these results. Considering the advances in technology since the original system was implemented, these requests can be easily serviced.

This proposal will outline the Engineering Society's desire to implement an online course critique result delivery system.

2.0 Proposed System

The Engineering Society is proposing an internet based system for course critique result delivery. This system will nearly mimic the current paper based solution, with a few minor discrepancies. All the development work will be undertaken by the Engineering Society and the system will be hosted off the Engineering Society's web page. The system data will be provided by the faculty. The details of the system will be described in the following sections.

2.1 Access Control

The current paper based system is set up so that only Engineering students are able to view the course critique results. This will not change in the new internet based system. Students who wish to view the course critique results online will first have to provide the system with their UWDIR username and password so the system can verify that they are an engineering student. The Engineering Society has implemented many online authentication schemes of this nature, mainly for our online exam bank and work report repository, and will have no problem implementing this authentication scheme for the online course critique system.

The system will only allow access to students who are members of the Engineering Society. Student's who have opted out of the Engineering Society fee on their fee statement and received a fee refund will not be able to access the online system, but will continue to have

access to the paper based results. The rationale for this decision is that the online system has been proposed and will be developed by the Engineering Society for its members. Resources of the Engineering Society will be put towards the development and maintenance of the system; therefore, it is only fair that the Engineering Society members who provide these resources benefit from their efforts.

2.2 Critique Selection

Once the user has been verified as an engineering student by the system, the system will present the main course critique selection screen. This screen will have two mechanisms for selecting a critique to view in the system: selecting from an alphabetical list of professors in the system and selecting from an alphabetical list of courses in the system. Once the first selection choice is made, the system will then display a list of all the courses in the system for the selected primary search parameter. If the primary search parameter was a professor, the system will present a list of all the courses that professor has taught as well as the term the course was taught for critiques in the system. If the primary search parameter was a course name, the system will present a list of professors who have taught that course as well as the term the course was taught for critiques in the system. The user will then select one of these secondary search parameters to view a critique from a particular course taught by the specified professor.

No search functions other than the functions described above will be included in the system. The Engineering Society feels that the above browsing scheme is adequate for locating a critique from a particular course offering.

2.3 Critique Data Presentation

Once a particular course critique is selected, the system will display to the user only the information that would have been displayed in the paper copy result of the critique. This includes and is limited to the name of the professor, the course name, the term the course was offered, the questions located on the front side of the engineering course critique survey, the number of respondents to a particular question, the percentage of students who selected each answer option for a particular question, and the total number of critiques received out of the number of students enrolled in the class as well as a percentage. Comments that would have been written on the back side of the course critique will not be displayed as students understand that this information is confidential.

Individual course critique results will remain in the system for three years from the date that the course was completed.

This will ensure that the system is not used to record permanent records for professors but rather provide students with a glimpse of the professor's teaching characteristics and the course's content characteristics. Once a critique has been in the system for more than three years, it will be considered to be expired and will be removed from the critique directory and deleted. This process will occur after the end of each academic term.

The Engineering Society will require that the faculty submit an electronic copy of the course critique results when they become available. With an electronic copy of the data, the Engineering Society can use automated data engineering techniques to place the information in the system. The faculty should provide the electronic course critique data to the on stream Engineering Society Vice President, Education by either e-mail or CD-ROM delivered through inter-department university mail.

3.0 Implementation Plan

Assuming that this proposal is adopted by the faculty, the system will be phased in over the remainder of this fall term so it can be ready by the time the course critique results are published for this term. The Engineering Society hopes to have all negotiations regarding this proposal completed and the proposal accepted by the faculty by the end of October. During the months from November through December, the Engineering Society will commence the development and testing of the system. The Engineering Society hopes that the proposed system will come online for student use at the start of the Winter 2005 term in January.

The critique data will be phased into the system as terms finish, starting with the Fall 2004 term. Once the system has been operational for three years, the expired critique purge will be run at the end of each term.

4.0 Conclusion

The Engineering Society feels that the online course critique system described in this proposal, if adopted by the faculty, represents a bold new step in faculty-student relations within the university. The Engineering Faculty at the University of Waterloo has always been a pioneer of course critique systems. With the approval of this system, the faculty will be the first faculty on campus, if not in Canada, to allow course critique results to appear online. The reputation of the Faculty of Engineering at the University of Waterloo has always been one of innovation. Implementing the online course critique system proposed in this report will demonstrate that the faculty continues to stand on the forefront of innovating engineering education.

Upcoming Events from EngSoc

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
17	18	19	20	21	22	23	If you'd like to advertise your event in the Iron Warrior, please send your information to iwarrior@engmail
					MOT P**5 Submission Deadline	Fall Convocation Proposals Due	
24	25	26	27	28	29	30	
		Engsoc Meeting #3		WIE Social	IW Submission Deadline	U@Waterloo Day Engineering Bonspiel	

Columns

Get Ready for Buck Rogers

Scaled Composites makes history with X-Prize Win

Jason Verheyden
3B Mechanical

They did it.

In the small dusty desert town of Mojave California in the early hours of the morning, hundreds flocked into the local airport. The population of the town must have spiked in a 24 hour period. At about 10:00 am EST a small rocket ship that could fit into a double car garage was released from about 50,000 feet. The pilot flipped two switches and the crafts' hybrid rubber/laughing gas engine was ignited. He pulled the craft into a steep climb at speeds exceeding Mach 3. Spectators below had been waiting for an hour just to see the next minutes of this small flight. It took nearly an hour for the mothership carrying the craft to get the desired altitude. There had been one flight previous where the pilot fell into an unexpected roll at the apex of the flight. It was rumored that he ignored a directiv from Mojave mission control to abort and flew to the edge of space anyway.

In the crowd space enthusiasts and rocket barnstormers that had been working towards this moment must have been crapping their pants. Ten years of work came down to just this single flight,

when they may either be proven right or wrong. Either space can be conquered by a private

small company, or it would be the avenue of government forever.

This flight was no regular flight. This flight was to win the \$10 million dollar X-prize. The X-prize is an award to the first team that can get 3 people in space, twice in two weeks. This flight was the final flight. The last one by the team Scaled Composites was a success but barely broke the 100km altitude barrier for space.

"The pilot experienced 4 minutes of weightlessness and became only the third private astronaut in human history."

This past Monday, the Scaled team was out again to attempt the final flight. They exceeded the 100km barrier by 30,000 feet. The pilot experienced 4 minutes of weightlessness and became only the third private astronaut in human history. All of this happened probably while you were in class sleeping, staring at a

wall, looking out the window, or if you were actually paying attention in class, slap yourself.

The next couple months gets better. The DaVinci project plans to launch in any event even though the prize is already won. There's even a documentary on the Discovery channel being run on the Scaled team.

However not all is well in the so-called "alt-space community" that created the X-prize. This group of people has always maintained that NASA after



Apollo has screwed up. Space Shuttle flights costs twice what the Apollo flights used to cost. The X-prize was their attempt to prove that you don't need a big government program, or a huge publicly subsidized corporation to get into space. Things still are a little shaky for alt-spacers ever since Monday.

The issue is regulation. The problem is that many public officials would like to make sure that these people that engage in these sub-orbital flights don't end up experiencing any real risk at all or at least very minimal risk. So many want to increase the regulations on these new space flights to make sure that there is no funny business going on. But there's a problem.

The world we live in today is a risk adverse society. No one wants to take, or let anyone else take risks, even if it

reasonable risks. This is the basic problem with the space shuttle. Before the Space Shuttle, 30 years ago, the basic means of transportation NASA had to space was through the use of expendable rockets and ships you would throw away after you used them once. The Apollo and Mercury capsules were all expendable. So every mission required that a new ship and new rocket be created. The great thing about the Space Shuttle was that it was supposed to be re-usable and so would therefore drastically reduce the costs of going into space. That didn't happen. Instead the costs doubled.

The reason why is simple: risk. The US government doesn't like to see Space

Continued on page 12. See Risk Averse Aerospace Community

Physics: Still for the Brainy

Perimeter Institute for Theoretical Physics opens to huge fanfare

Andrew Dodds

1A Mechanical



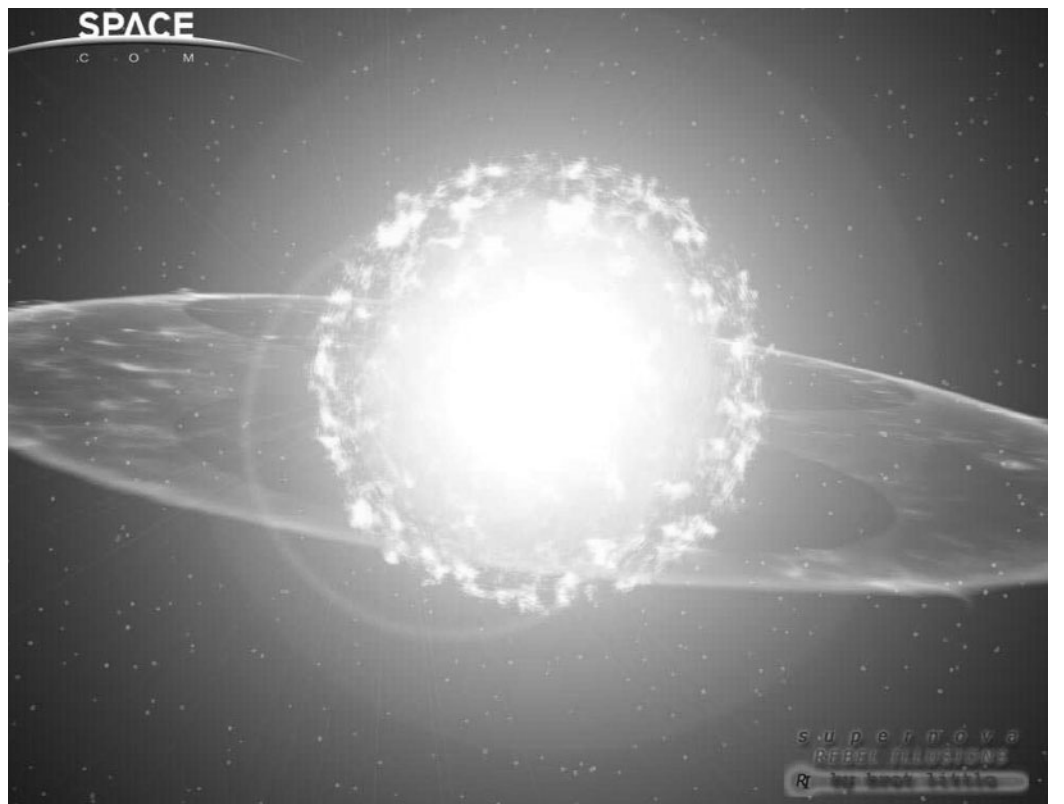
October 2nd, what importance did that day carry for us? For me, it meant that I could look forward to next weekend, when I'll be waking up at home, for it will be thanksgiving. I'll be complaining to my mother about the lack of ready food and I'll probably melt my WAT-CARD in the toaster.

For the local and international science community though, it marked the opening of the long-awaited Perimeter Institute for Theoretical Physics, right here in Waterloo. Five years after its inaugural founding, and less than a year after the Institute's public launch, the physical residence of some of the world's leading physics research is now open at 31 Caroline St. North. It was founded by Mike Lazaridis, President and Co-CEO of UW's own RIM, and funded by his personal donations along with those of RIM executives Doug Fregin and Jim Balsillie. Additional funds have been granted over the years from the federal and provincial governments, as well as provincial and national groups interested in cutting-edge research.

From the beginning a very active role was taken. Playing both sides of the field, the Perimeter Institute began offer-

ing seminars, lectures and hosting international scientists, while also working to better itself through connections to nearby institutions. Ten dual-positions have been arranged for joint UW and Institute staff. Now the real question is: "why should I care?" I can't answer that. I will tell you why I was interested in the matter though. First off, at the opening they bestowed honorary degrees on James Hartle, Anthony Leggett and Sir Roger Penrose. They are all noted physicists, which makes sense, and they got something for free, which is cool.

In my grade 12 physics class we were visited by a man from the Institute. He explained that they were studying the nature of space, matter, and time, and he had some interesting lessons for us. Did you know that gravity not only affects objects, but time as well? The Earth's gravity creates a distortion for satellites in orbit. Within 2 minutes, their clocks are out of phase with those on the planet, and they need recalibration. Every minute GPS satellites undergo this procedure so we can be blessed with the degrees, hours, minutes and seconds of our position (The same can't be said for our understanding of this information though). I'm sure we've all heard about Einstein and his theory of



relativity, so here is an extension on it. If you were to place people shoulder to shoulder looking out the windows of the CN Tower and spin the tower with a rotation speed near that of light, an interesting effect occurs. To an observer in a helicopter outside, the space between the people would expand until you could fit many more people in between the shoulders of the spinning sightseers. There might be some application there in fitting big things into small things, or some-

thing like that.

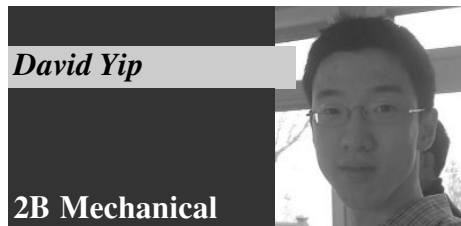
The point here is that the Perimeter Institute is working towards a new future, and it is a very exciting prospect. Decades ago you would hang around the patent office and kill to get your hands on Smith's theory of relativity. Nowadays if you want to get your hands on the next evolution of your physics textbooks, you head down to the architecturally beautiful Perimeter Institute. Or you just stick to reading the news; that usually works too.

Nuclear Renaissance

Stalled since 70's, Chinese economic emergence may push rebirth



"Cooling Towers" - These babies may be making a comeback. Maybe we'll be lucky enough to have talented nuclear safety engineers working in Sector 7G



David Yip

2B Mechanical

Ah, China. Hard to ignore, especially around here. It's giant economy and population make headlines everywhere, in all fields and industries. However, this economy and this population needs energy. Currently the majority of China's power needs are supplied by coal, and dirty coal at that. The giant Three Gorges Dam will serve to alleviate that, but supersize dams are not something that can be constructed as easily as power plants.

The Chinese government has announced plans for 30 nuclear reactors by 2020, with enough generating capacity to double that of the Three Gorges Dam. By 2050, China could require the equivalent of 200 full-scale nuclear plants, as indicated by a 2003 study entitled The Future of Nuclear Power. To fulfill these plans, the Chinese government is pursuing a two-pronged approach. The first is to work with established reactor companies such as Canada's own AECL, Westinghouse, Mitsubishi, and Framatome.

The second, more interesting prong being pursued by the top minds at Tsinghua University, is to build a new type of reactor, a reactor that almost sounds too good to be true. Far cheaper and simpler to build, intrinsically safe, what does it generate? Hydrogen.

"Whoa" you're thinking. If this technology is so hot how come no-one else has it? Well first, let's give this technology a name. This reactor is called a pebble bed reactor. It does not rely on fuel rods, instead, bits of uranium are contained in thousands of graphite balls the size of billiard balls. The balls are the pebbles that give the pebble bed reactor its namesake. Instead of water to cool the core and carry heat for power generation, the pebble bed reactor uses helium. Without the threat of pressurized steam, the reactor can do away with costly pressure containment domes.

Perhaps the most impressive point: this reactor is walkaway safe. As in, you can walk away from it. Anytime. If the coolant leaks, the reactor will just shut itself off. How? Conventional reactors have extremely high fuel density. Control rods control the rate of reaction, but at such high densities the potential for an uncontrolled runaway reaction is always there. Pebble bed reactors have

"Far cheaper and simpler to build, intrinsically safe, what does it generate? Hydrogen."

low fuel density. In the event of a coolant failure, the core will heat up, but not beyond the melting point of the fuel balls. If the core is heated too much, uranium atoms and their nuclei will spread too far apart for neutrons to strike easily. In a dense conventional core this effect is negligible, but pebble bed reactors combine this effect with carefully designed sizing and geometry to make them safe. Finally, the pebbles, with fuel encased graphite and silicon carbide, can be stored in lead lined barrels once spent.

So back to the question: if this design is so wonderful, why isn't it in use? Similar questions have been asked about the Apple Computer and Betamax tapes, both technologically superior concepts overtaken by competitors. In the case of the pebble bed, it was money.

In the 1940s a chemist named

Farrington Daniels proposed a reactor containing enriched uranium pebbles, and using helium gas to transfer the energy to a reactor. In 1945 Oak Ridge National Laboratory commissioned a design to build a working version, but a competing design – the water cooled fuel rod reactor, backed by money from the US Navy (who were interested in nuclear subs) won out.

By the 1950s interest in atomic energy grew. Edward Teller, a leading nuclear scientist, argued that nuclear power must be "inherently safe" to be acceptable to the public. However in the 50s, the race was on with the Soviets in every field, especially nukes. Rather than spend time in search of Teller's inherent safety, it was faster to continue with the fuel rod design. Even in Germany and South Africa, where the pebble bed reactor design had taken root, politics and activism has deterred their further development though the South African designs are furthest ahead. This is one of China's advantages. Their history is not marred by the nightmares of Three Mile Island and Chernobyl. Additionally, activism and dis-sension has never fully held the Chinese government back from anything.

The kicker: pebble bed reactors are also potential hydrogen generators, perhaps bringing the hydrogen economy closer. So maybe one day, to paraphrase Armageddon: "American reactor, French reactor, all made in China!"

Adapted from "Let a Thousand Reactors Bloom" by Spencer Reiss in Wired September 2004.

The original article: <http://www.wired.com/wired/archive/12.09/china.html>

Also: <http://www.wired.com/news/technology/0,1282,61088,00.html>

Distance Ed

Emily King
3B Mechanical

Whether as a way of making up a CSE to make room for an extra course during a school term, or simply for interest, the idea of taking a distance education course over a work term appeals to many engineering students. Until they see this:

<http://www.dce.uwaterloo.ca/de/PDFs/calendar_fees.pdf>

In summary, we pay \$720.00 per course, where most other people would pay \$470.00 for EXACTLY THE SAME SERVICE. Now I know we pay more tuition when we're on campus taking a full term of engineering, and I can accept that because we are receiving a decidedly different service than people in other programs while we are on campus. I have more difficulties with this one.

Here are the problems I see:

Firstly, I think that people receiving the same service should pay the same amount. I see a distance ed course taken on a workterm as separate from the rest

Continued on page 12. See Arts courses expensive, faulty pricing structure...

A Canticle For Liebowitz, the post-nuclear classic

Adam Philip
3B Mechanical

Recently while looking for used textbooks in the used bookstore I came across an old favourite of mine; A Canticle for Liebowitz by Walter M. Miller. Realizing that my current copy was held together with scotch tape and prayer and decided to purchase a new copy and for \$15, you can't really argue. I'd forgotten what a fun read it was. The central idea behind A Canticle for Liebowitz is that a nuclear holocaust has occurred and that an angry mob had decided such a thing should never occur again and killed all the nuclear scientists. This quickly escalated into an all-out war against knowledge and thus the great simplification began. The book starts some 500 years after the simplification at an abbey of the monks of the Albertan order who preserve the memory of the blessed Liebowitz. Liebowitz was a nuclear technician turned monk who started the process of 'book-legging' to preserve literacy when a mob of simpletons found and burned him. The monks honour his memory by preserv-

Book Review:

ing and copying all literacy including the 'holy?shopping list and the 'blessed?circuit diagram of a squirrel cage induction motor. The structure of the book parallels closely the history of the church during the middle ages through to the modern day; starting in the first section (Fiat Homo) with a primitive church copying manuscripts, to the second section (Fiat Lux) where technology is rediscovered, and finally to a near future society (Fiat Voluntas Tua). Along the way Miller makes numerous social commentaries on the follies of nuclear war and technology without conscience. These commentaries take the form of overt (mutants are common place) to subtle (Miller purposefully creates ambiguity to which side is at fault for the holocaust). To prevent these commentaries from becoming preachy Miller provides a continual supply of fresh humour created by taking the perspective of someone who has access to information from the past but understands none of it because all context has been removed. This humour is helped along by Miller's addition of throwaway jokes such as corrupted Latin. This combination of a serious and humour strikes the right balance and allows Miller to get his points across nicely. As mentioned above A



"Remain Calm" - We're too young to remember these, but the threat remains.

Canticle for Liebowitz is a fun read. While the issues that it deals with (nuclear armistice) are not as pressing as they were 20 years ago, they are still highly relevant. Canticle provides a good exploration of the consequences of nuclear war.

By Walter M. Miller Jr.
ISBN: 0-553-37926-7

Columns

Game Review - DOOM 3:

The mother of all first person shooters makes a stellar comeback!

Tsu Chiang Chuang



4N Computer

Doom3 is finally here.

Before you guys get your panties up in a bunch, no, I am not writing a religious pamphlet declaring the end of the world. Doom 3 is just the newest remake of Doom by Id software. Id software revolutionized the gaming industry by bringing us the First Person Shooters (FPS) genre. As the name implies, you run around from a first person perspective and you shoot at monsters, or what have you. Id brought us Quake, Hexen and the original Doom. Anyone who has never heard of either of those games should be shot or at shown these games once, preferably the former.

FPS are great. You get to wield a gun and go, not a lot of brainpower required. Most FPS are solely based on reflexes or practice. Your frag count depends on how fast you can click and shoot, on how accurate you can railgun the noob coming around the next corner, or on how accurately you can scout the clueless on de_dust. So, it is usually good for relaxation after you get owned at an exam or something. Oh yeah, before I forget. Do NOT go around shooting at people in real life, and so on, yaddi yadda, you know what I mean.

When I first picked up DOOM 3 I was expecting something quite similar to the old school DOOM that I played on my 486. However, I was slightly surprised by what I got, both in a good way and a bad way.

The general storyline is the same. You

are a marine sent to a scientific research base on

Mars. You are minding your own business, patrolling the base, until some crazy scientist decides to open the gates to hell and invite the demons over for dinner or something. So, now you are the lone hero that stands between the hordes of endless demons and Earth. Oh yeah, and did I forget to mention that all your buddies are dead and are now zombies that want to eat your brains out? Talk about a bummer.

First things first, I don't care what you say, but DOOM 3 is scary. And by scary, I mean that after playing DOOM 3 for half an hour, you will wish you had a shotgun so that you can take that trip to the wash-

room. The revamped monsters in DOOM 3 are a lot more realistic than the original version. Well, I mean how often do you see a

spawn of hell that is ready to rip your head off? Not too often I hope. Bottom line is scary games are good, because they keep me playing.

In addition to offering higher polygon count for the monsters, the lighting of the game is beautifully incorporated. The lighting effects give the game a horror movie kind of look. The game is dark, so dark that you can't see a bloody thing in front of you. But, it is okay you get a flashlight. I really really really hate the flashlight. Did I mention that I hate the damn flashlight? I mean what is the use of having a flashlight that you can only use without your weapons? I mean you are in the year 2015, you will think they will have invented guns with lamps, or night vision or something. It scares the beejesus out of me every time I use the flashlight and shine it on a zombie that is rushing towards me with a cleaver ready to chop my head off.

Regardless of how much I hate the flashlight; I really enjoy the lighting effects.

"Rating 9/10"



Now as for the background sound, it is simply creepy. I mean you are walking around in a dark corridor sprayed with blood, and all you hear on your radio is static, and, oh yeah, your fellow marines screaming in agony as they are killed slowly one by one. Also, the sound level actually varies with your surroundings. Similar to horror movies, the sound level increases the suspense as you round dark corridors expecting to find monsters ready to pounce on you. After playing this game, you might be jumpy for a few days or two.

Another thing that I like in DOOM 3 is the weapons. Id has kept the guns the same. The revamped BFG (I will let you guys figure out that acronym.) reload sequence is awesome. It is so good that I don't get tired of shooting it just to see the reload sequence. That and because the BFG is the only weapon able to take out hordes of demons with one shot. My favourite weapon however is still the chainsaw, since it keeps reminding me of the movie "Army of Darkness". Nothing is more funny or incongruous than cutting through hordes of zombies with a chain-

saw. Just be careful with your health bar, since some of the zombies don't seem to like the chainsaw too much and WILL attack you.

Speaking of zombies and monsters. The monster spawning system of DOOM 3 disappointed me greatly. The spawning system becomes redundant and predictable after a while. When you walk into a room, you see a health kit, some armor and some ammo clips. You think, "Cool, I get free stuff." Well, as soon as you get those goodies, hordes and hordes of hell spawns and zombies spring out of nowhere and start beating the crap out of you. So basically, you end up losing all the health and armor you just gained, and emptying all your ammo clips. After a while, I stopped caring about the free stuff that I saw, and kept running, running for my life. Those damn zombies.

However, even after playing twenty hours of so and losing sleep because of the nightmares, I still recommend the game. First, it is DOOM. Second, it is DOOM. Third, it owns and that is the end of line.

Cross Campus Capture the Flag

...continued from Page 4.

sion against Blue, some Greens and I got pretty close to the flag before being caught by a Blue. After spending my 20 minutes in the Blue jail, I automatically got a free walk back home and passed a HUGE group of Yellows and some other colours (who had been in Yellow jail but were set free upon agreeing to accompany Yellow) on an assault mission against Blue. Back in Green turf, I'm sure you can see the endless cycle I was now stuck in. This attack-someone-go-to-jail-get-freed-go-back-to-Green cycle continued for the rest of the game until 11pm, when everyone reported back to RCH, exhausted but each with different stories of funny things that happened during the game. Surprisingly, the game ended in a four-way tie; no one had captured anyone's flag, although good attempts had resulted in a few displaced flags. The guardians held a vote and a meeting with the team captains to determine which team deserved to win.

Green - Evil Leprechauns - 1st - Capt. Tina

Yellow - 2nd - Capt. Megan

Red - 3rd - Capt. Matt

Blue - 4th - Capt. Peter

Then everyone headed over to [some restaurant whose name eludes me] for free nachos!

A special mention must go out to the Red guy who climbed a tree to escape some Blues. One Blue went up after him but couldn't go as high as him. The Red guy apparently even started jumping from tree limb to tree limb! Those crazy commies! And speaking of commies, another Red, in an attempt to escape the Green jail guards, literally long-jumped at full speed off the raised, grassy hill between RCH and Dana! He skidded about 2 ft once he hit the ground! I caught him, but we (me and the Green jail guards) let him go on account of his fall being the highlight of the night!

If you are still with me, I assure you that joining the next Capture the Flag will be an absolute blast and probably the best workout you'll ever have... so long as you don't just hang around the flag on guard duty! There's even a website you can check out for copies of the rules and info about past winners; http://www.eng-soc.uwaterloo.ca/www/evn_ctf.php. And let me tell you, I went to this game all alone and with no friends, and I still ended up meeting lots of people and having as much fun as if my friends HAD gone with me! So no excuses! Go capture the flag!

Carolyn can be reached at csutherl@engmail.uwaterloo.ca

Who still writes about trains anyway?

Yvonne Yip
3B Software

Songs from selected albums for those of the iron horse persuasion. . .

Silver Mt. Zion - Goodbye Desolate Railyard The Godspeed!

You Black Emperor side project laments the loss of community as a railyard near the band's neighborhood is torn down. Off-key, cracking, but nevertheless sincere vocals are accompanied by beautiful strings and piano in the beginning of the track; the melody gives away to layers upon layers of noise and a train recording. Finally a chorus comes in with the refrain, as if the lone singer from the beginning is joined by other passengers of the defunct train.

Funki Porcini - Tokyosaka Train

This downtempo track takes a trip on a Japanese train, complete with station announcements. The train speeds away from a now-quiet platform, and I think I hear birds outside of the station.

Erlend Oye/Morgan Geist - Ghost Train

The staccato beat and the understated vocals in "Ghost Train" is reminiscent of Kraftwerk's classic train song, "Trans-Europe Express", although with a more refined electropop sensibility. While Kraftwerk delights in technology, Erlend Oye looks back to the classic train themes of loss and missed opportunities.

Two Dollar Guitar - Train Songs

Two Dollar Guitar has written a 17-track album about trains and traveling. The instrumental tracks glide smoothly from one to the next, perfect for listening while on a long flight, a lone drive across the country, or perhaps on a train...

Magnetic Fields - Born on a Train

Centred around a theme of loneliness and travel, this track seems to announce that this is a country classic, both in sound and in subject, except with synthesizers. The lyrics are simple and their delivery is charming, working in harmony with the swinging, lilting instrumentation.

Who is the REAL hero in Hero? Movie Review of you guessed it, Hero

Charling Li
2B Mechanical

This week's movie review is Hero, a spectacularly beautiful martial-arts film by Zhang Yimou, a festival prize-winning Chinese writer-director whose films I've never heard of but now really want to see. So admittedly this movie came out about 6 weeks ago, but who said this review column was for new movies? Originally released in 2002 in Asia, Hero was more popular than "Crouching Tiger, Hidden Dragon" in the Asian film markets. Quentin Tarantino, contrary to popular belief, was only the man responsible for bringing it to the North America earlier this year, and not it's director.

Hero is based on the legend surrounding China's first emperor, the King of Qin, who lived approximately 2200 years ago. The China in this movie is a war-torn country, divided into 6 kingdoms and many northern tribes. The King of Qin was a tyrannical despot whose goal was to unite all the kingdoms into one and rule "all under heaven". The king had survived so many attempts on his life that he removed everything in his palace so would-be assassins would have no place to hide. The king also did what all kings do: he put a bounty on the heads of 3 of the top assassins who plagued his life for the past 10 years. Enter Jet Li, our "Nameless" hero (Because he really has no name. Go figure.), a quiet county sheriff who comes to the king with the swords of the assassins, claiming to have done away with them. The king grants Nameless the privilege of being within 10 paces of his majesty and asks Nameless how he, an anonymous Average Joe, managed to kill the 3 top swordmasters in the land when 3000 troops couldn't stop them.

**"Rating 4/5
Verdict: Beautiful but
confusing"**

And so begins the lyrical storytelling of what might have transpired between Nameless and the 3 assassins; Sky, Flying Cloud, and Broken Sword.

I won't ruin the story for you, but I'd like to say that all the different versions have something to do with the love triangle between former lovers Broken Sword & Flying Cloud, and Moon, Broken Sword's devoted slave girl/disciple, played by Zhang Ziyi of Crouching Tiger fame. Now this is what made the movie interesting for me. Don't be fooled by the action-movie genre of the film, it's actually really quite romantic. And let me get this straight. Hero is by no means a chick-flick, but it's not a "Kill Bill" blood & gore action flick either. I would have to say it's a happy medium, with stylized fighting sequences, but enough feeling and emotion to satisfy the sappiest of sappy-movie lovers. This movie is a visual poem, filled with lush colours and costumes and well-choreographed fights, but you can judge all the technical stuff yourself when you see the movie.

Now, as for the title of this review, who really was the hero in this movie? Was it the assassins who wanted to do away with the evil king, who, in their eyes, had caused so much death and destruction in his quest to rule over everything? Or was it the king who wanted to unite the kingdoms to put an end to the wars between the different states? Or was it the assassin who killed all the other assassins in order to get



to the king? If these questions confuse you, go watch the movie and you'll understand what I mean. My vote is on the assassin who didn't want to assassinate the king because that would only mean more needless deaths. Trust me, just watch the movie.

And now I'd like to conclude with several irrelevant and random things I noticed in the movie:

1) When the Qin army is attacking the calligraphy school where Broken Sword and Flying Cloud are, they rain masses of deadly arrows in its direction. Flying Cloud is able to deter all the arrows in her general vicinity (and I mean all of them) by simply swirling the sleeves of her robes around. Nameless, on the other hand, manages to whack each and every arrow coming his way by using one measly little sword. Ok, so both of them were wielding their weapons of choice pretty furiously, but still, fending off thousands of arrows with cloth? Interesting.

2) Broken Sword and Flying Cloud tend to dress in matching billowing robes (awww, how cute), and they both have long

hair. Whenever the camera was behind them, I couldn't tell who was who. That bugs me.

3) Speaking of hair, how can these people fight with hair flinging all over the place, especially when they're doing those torpedo-spins in the air? I mean, I have long hair and on a windy day sometimes I can't really see where I'm going...

4) The scene where Nameless and Broken Arrow are fighting on the surface of a completely placid lake was gorgeous and amazing. The fighters skim the water the entire time and are able to throw themselves back in to the air simply by swiping the tips of their swords in the water. Imagine how much force you'd need to apply to the water to do that....

Just go and watch Hero. It's one of those movies that you'd understand and like more and more after each viewing. Heck, it's a movie that I would actually plunk down cold hard cash to own. Well, at least enough cash to buy the blank DVD-Rs to get someone to burn for me...

Banana Boys: A review of the play based on the book

John Ng
Graduated

What does it mean to be an Asian-Canadian guy? How does it feel to look like an Asian while adopting Canadian culture? How does it feel to be trapped between your parent's obligations and your own desires? How do you react to a media which tries to be modern but still includes so many stereotypes and falsehoods?

The premise of Banana Boys is that Rick Wong (Richard Lee), is now dead, victim to delusions caused by an overdose of antidepressants combined with alcohol. Michael Chao (Derek Kwan) tries to write about this life, and the lives of the group that is loosely called the Banana Boys, but has severe writer's block (something he terms "Mental White Noise"). It certainly doesn't help that parental obligations have forced him into graduate school, where he's to study for medical school instead of doing silly things like be a writer.

Each of the Banana Boys themselves have their own problems to contend with: Dave Lowe (David Yee) has hang-ups with perceived racism by white people (in fact, this gets so ridiculous that he

beats up someone just because the guy asked him directions to the CS building, which Dave took to be an assumption that he'd know because he's Asian and would know computers.) Sheldon Kwan (Dale Yim), the so-called "nice guy", is obsessed with "the Quest", a journey to find someone who is totally right for him. Luke Yeung (Insurp Choi) has problems with committing to a steady life; he dropped out of University, lost his gig at a radio station (which wasn't entirely his fault), but then when another gig comes up, he balks. Michael is pressured to be a doctor as described above, and Rick abused drugs to enhance his performance and as a desperate denial of his identity as a Banana Boy.

Relationships also seem to be a major factor in the play (as with a lot of productions really). Dave is cheated on by his ex-girlfriend, who complains to him that he sounds more and more bitter by the day. Mike gets cheated on by his ex-girlfriend as well, and he dwells on the issue obsessively. The "nice guy-ness" that led to Sheldon's first relationship also proves to

be his undoing. Luke punctuates the issue by showing a blank to the other guys as what the "ideal girl" should be, as "reality.jpg". Dave's obsessiveness with race relations gets him to the point where he presents a Venn diagram showing all people except the Banana Boys hooking up, amplified by barbs such as William Hung and stereotypes of small penis size.

Things hit a low point when the boys, drinking as usual, blow up on each other and force themselves apart. The others get back on good terms, but Rick leaves them permanently. When Rick dies, his ghost haunts Michael, "killing" the other boys until Michael decides to face up to his fears of not wanting what his parents want and decide to write for real.

Banana Boys attempts to answer the questions posed in the first paragraph, but at the same time presents a tale of lost identity: in truth it's about a group of twenty-something year-olds who basically wonder, "school's done, so now what?" The play presents dilemmas that a lot of people can relate to: being directionless in life; working hard towards your goal

**"...it's about a group of
twenty-something year-
olds who basically
wonder 'school's done,
so now what?'"**

but coming up short; drug abuse; finding "the one". However, the interjection of cultural nuances (parental expectations; race relations) makes it undeniably Asian-Canadian.

The play itself was presented very well and was extremely original. The actors were talented and it shows. The boys hang out, exchanging witty banter before the play starts and before intermission ends. The minor characters are all well played by the boys as well (Insurp Choi gives an outstanding performance as almost all the female voices in the play, it's actually kinda scary.) The scenes in Banana Boys are very dynamic and energetic, which adds to the whole "hurried 21st century" feeling but at the same time some of the lines and scene changes are lost in midst of the confusion. The play format (which consists of scenes in a decidedly unchronological order, which makes it harder to follow) doesn't help it either, especially when Rick "kills" the other boys - Luke never explains why he gave his heart up, and you have to suspend disbelief for a second for that whole scene to unravel itself. But it's a good effort.

Banana Boys was presented by Fu-Gen Productions, written by Leon Aureus based on the novel by Terry Woo

It ran from Sep.18 to Oct.3

Columns

Risk averse Aerospace Community

...continued from Page 8.

Shuttle disasters, and every accident is taken as a huge blow to the space program. Never mind that you probably have a better chance at getting your behind blown to smithereens in a car accident. Risk at NASA has become a four letter word.

This is the fundamental problem; every advance in human history, every step forward has been made by taking risks, sometimes drastic risks. Columbus could have easily starved to death at sea like so many others, and the Wright Brothers could have easily have broken their necks in their first flying machines. Should we have stopped those nutsos with weird dreams from taking those risks?

That's what happened with the Space Shuttle. The program was unable to take reasonable risks. Instead every flight is now more scrutinized than ever, employing more engineering than ever before to eliminate any chance of anything unexpected. The truth is that you can spend your entire life living in a plastic bubble, and you'll still die. You have to take risks. Life is one big huge risk. And those blow-dried MIT brats at NASA will spend every penny they have to eliminate it because some public officials don't like the way it looks on CNN.

Now imagine if as an Engineer you were given a problem to solve and then you were told that you couldn't take any real risks to solve it. Everything must be triply redundant no matter what the cost. You would probably spend a lot of money and get the job done. That's what happens at NASA. Cost reduction is not a priority for NASA. It is a priority for the alt-space community and the

people that watched in that crowd this past Monday. They know they can't afford a \$20,000,000 flight to space. A \$100,000 flight is at least within shooting distance.

The other problem with the Space Shuttle is that it was over designed. Imagine if you were told to design an aircraft that is a bomber, a fighter, an interceptor, a cargo plane, and a passenger craft. You'd get one huge

price tag and the flying brick that the space shuttle is. If you want to send satellites into

orbit use a rocket. If you want to send people use something else. It's that simple. The cause now is to get the existing regulations changed to be more reasonable. A lot of people received a shock when amendments were tabled to an obscure bill named "HR 3752" which was originally intended to do just that. Instead these amendments would have made it worse. The bill ended up getting killed in time for the presidential elections to the relief of many alt-spacers who feared that the technology would never meet the standards required by the amendments.

There is some good news. Sir Branson, that lovable British billionaire that has nothing better to do with his time or money besides making up his own cola soft drink, has just signed a deal with Scaled Composites to build a similar version of the Scaled space ship for commercial use in three years. I think they might be late. With the X-prize won, I think a lot of the other teams will



now be focusing on making money and coming out fast with suborbital vehicles in the next couple of years. There's no point in doing trial proving flights that require equipment to be created specifically to win the X-prize. And plus I don't think they'll be a shortage of investors now.

Also another prize has been offered in the past week. It's called the America Prize and its being offered by millionaire Robert T. Bigelow (No, I'm not joking that really is his name). It's a \$50 million prize to the first team that can get 5 to 7 people into orbit. Bigelow's company of course has been researching inflatable habitats to be used to form a space hotel in low earth orbit for over 5 years. He is planning to launch a scaled down inflatable habitat later this year for trials. Anybody feel like a jaunt at an inflatable space hotel that could pop at any moment? Now that's risk taking!

Buck Rogers ain't that far away!

NFL season shaping up nicely, Packers still in trouble

...continued from Page 4

but it looks like his streak could come to an end this season, which is sad to say because of the great memories he has left in Packers and NFL fans' hearts and minds.

#31 Miami Dolphins (0-4): What did Dave Wannstedt do to deserve this? The Dolphins were coming into training camp with their heads high, and after going through some growing pains over the last few years, the Dolphins looked to have an outside shot at a play-off spot. Unfortunately, everything, and I mean everything, has gone

awry for them. After failing his 3rd, yes that is right his 3rd drug test, testing positive for the use of marijuana, the Dolphins' distraught running back Ricky Williams decided to file his retirement papers with the league, only days after the last respectable and established back Eddie George was acquired by the Dallas Cowboys, leaving the Dolphins with nothing but inexperience in the backfield. As if the loss of Williams didn't kill the spirits in Miami enough, big time receiver David Boston went down with a season ending injury in camp, leaving the Dolphins now

without a number 1 receiver and a number 1 back. It's not that they ever had a competent quarterback to pass or hand off to either of them, but devastating nonetheless. The Dolphins have the distinction of being the only team in NFL history of having a perfect season, could they also receive the dubious distinction of being the only team in history to go 0-16? Only time will tell, but keep an eye out for history to be made by these sad, sad Dolphins.

#32 San Francisco 49ers (0-4): Wow, what a difference a few years can make. After upsetting the Giants in a play-off game in 2002 the

49ers have been absolutely horrible, and I mean horrible. As they are my favorite team in the NFL, it pains me to see them such in such disarray. They have no quarterback, no running back and no receivers for as far as the eye can see. Not to mention their defense that was supposed to be getting better over the years, isn't. As an organization they have run Steve Mariucci and pretty much kicked Jeff Garcia and Terrel Owens out of town. For what? They have since failed to replace any of the aforementioned people with anyone competent. Dennis Erikson was supposed to bring a

more wide opened offense and better defense to the team, yet neither of those promises have been met. The 49ers are in severe salary cap trouble, playing with the equivalent of a 50 million dollar roster value because they are still paying players who aren't even members of their team, most notably Jerry Rice in Oakland. The 49ers are bad this year, they were bad last year, and because of their salary cap woes they're going to be bad for many many years to come. It's sad to say but the days of Joe Montana, Steve Young and Jerry Rice are distant memories for the bay area team.

Dubious Honors: Another team receiving dubious mention are the lowly, lowly Bills, who, instead of losing only Superbowl games, are losing every game, going 0-3 after the first few weeks. The other team I'd like to mention is Washington, who perennially makes off-season acquisition with huge contracts in an attempt to bolster their roster. Here's a hint for Daniel Snyder: you can't buy Superbowls, this isn't the MLB, you need to scout and develop talent in your own system.

Well that brings us to the end of the early season evaluation of the NFL. I hope this has brought everyone up to speed on the happenings of the league, check back after week 8 for another installment of the top 3 and bottom 3 of the NFL. Cheers!

Arts courses expensive, faulty pricing structure to blame

...continued from Page 9.

of the engineering degree, which is what I am paying for on a school term.

Secondly, this pricing structure discourages engineering students from taking distance ed courses. The distance ed courses that engineers take are not generally engineering courses, but rather courses designed to make them a little more well-rounded. So by discouraging engineers from taking distance ed courses, the university is encouraging them to stay narrowly focused on their degrees. This runs contrary to the general objective of making engineers better rounded, which is the point of requiring us to take CSE's in the first place.

So what do I think should be done about this? Ideally, the university should start charging people the same thing for the same service. Unfortunately, I am told that the idea of "differential tuition" will be a hard one to shake since the practice is quite lucrative and is therefore near and dear to the hearts of those in high places. At the moment, the only solution that I can think of is to vote with our feet, find less expensive distance ed courses at other universities, and stop taking the ones that UW offers. If we continue to meekly accept the higher prices, we will continue to be charged more. Any other suggestions? Please let me know.

CECS

CECS Press Release
IW Press Bureau

Thinking about Grad Studies? Whatever your reasons for considering graduate or professional school, Career Services has an event for you. Professional & Post-degree Day (PPD Day) will be held on Wednesday, October 13 at the Student Life Centre from 11am - 2 pm.

Students will have the opportunity to speak with representatives from 64 institutions from North America, Europe and Australia (up from 56 last year). This once-a-year event allows students to find out more about career options, graduate school admission requirements, program specifics, and the procedures/deadlines for applications. Some of the fields of study offered include Architecture, Business, Chiropractic, Education, Engineering, Environmental Studies, Health Sciences, Law, Naturopathic Medicine, Pharmacy, Rehabilitation Sciences, Social Work, Theology, and Veterinary Medicine.

In addition to organizing PPD Day, Career Services also offers individual appointments to provide information about the grad application process, review of applications, and mock grad/professional school interviews on an ongoing basis. Book your appointment early - the easy way, online. If you are just starting to think about the next steps after your undergrad degree, you may also consider attending one of the Career Services workshops such as "Are you Thinking about Grad Studies?", "Mastering the Personal Statement" or any of the presentations on med/law school featured at the beginning of the Fall and Winter terms. For more information about PPD Day, please contact Elisabeth Adrian at 888-4567 ext 2590 or visit the Career Services web site at www.careerservices.uwaterloo.ca

NHL Lockout: What it Means to the Fans

Chris Bender
3B Software

Many die-hard hockey fans have grown increasingly frustrated with the media's coverage of the current NHL labour dispute. Every article, news special and interview insist on giving the same facts and the same quotes and then telling how these relate to the player's union (NHLPA) and the owner's standpoints. It seems that, lost in this entire process, is the fan. What do these issues mean from the fan's point of view? How will this agreement affect the people most important to any professional sport, the fan? Instead of examining the situation with Gary Bettman's (the man most likely to win the weasel look-a-like contest) or Bob Goodenow's (is he really Nick Nolte's long lost brother?) interests, each major issue in negotiations will be broken down to what it means to the fan.

First, the issue of revenue-sharing is a hot topic under debate. This refers to large market teams such as Detroit, Toronto or New York, channeling a percentage of their profits to smaller market teams like Calgary or Atlanta. This is to ensure that the small market teams can remain viable and competitive. For the fan, this is a must. Knowing year-in and year-out that your team can make a serious effort to win is all you can ask. From the fan's perspective, they cannot be bothered if their favourite large market team makes a few less millions of dollars.

What fans do care about is the players their team puts on the ice and the intensity of the games being played. Currently, the NHL has a system in which contracts are guaranteed. What this means is that a player who signs a five-year con-

tract cannot be released by the team before the terms of the deal have been met, unless the team is prepared to buy out the contract at two-thirds of the remaining salary owed. The NHL's owners would like a system mirroring the one in the NFL. An NFL team is permitted, except in the case of injury, to release a player and terminate his contract at any time. This forces players to play at their top level, at all times, in fear of losing their jobs. Now, a cutthroat agreement like this would never be agreed on by the players, but for the fans, this would be the best situation. They would be guaranteed that each night, their team would be playing with total effort, and with no players that do not deserve to be there.

Another issue dealing directly with individual player contracts is arbitration. Any player who is 25 years old and has five years of experience can file for arbitration rights. The current agreement allows both owner and player to present a case to an independent arbitrator. The arbitrator then decides on the player's salary, usually by comparing the player seeking a new contract to a player of similar age with similar statistics. Owners feel this is too inflationary on contract levels and would like to adopt a "High-Low" system in which the player and the owner each present a contract offer. The arbitrator is then required to choose one or the other, unable to pick anything in between. The players would like to force the teams to accept the arbitrator's decision within seven days, or otherwise leave the player free to unre-

stricted free-agency. The fans benefit most from a combination of both of these proposals. By having this "High-Low" system, players and owners must both make reasonable claims for the contract terms. This puts both sides much closer to a workable deal, and would reduce the occurrence of disputes and holdouts. Also, if a player deserves more than a team is willing to pay, the owner can no longer hold the player's rights indefinitely and star players can sign with another team, getting them back into the action.

The final issue dealing directly with individual contracts is free agency. Currently, teams have exclusive negotiating rights with their players until a player turns 31 years of age, or has 10 years of playing experience. The players would like to see this age lowered and allow for a free negotiating market ear-

lier in a player's career. To a fan, this is a double-sided topic. On one hand, a team with many young players can retain their talent and be successful for many years. On the contrary, a team that has struggled for many years is able to acquire talent through free agency and can quickly reverse their fortunes. This allows richer teams to outspend the smaller market teams and can lead to escalating salaries. In the grand scheme of things, a higher unrestricted free agency age is in the fans' best interest. Although a certain team's group of fans may be forced into many years of mediocrity, less free agent movement promotes league parity as it reduces the economic strain on small market teams. Also, this limited movement

allows teams to generate an image based on their roster and fans to grow more closely attached with their team and its players.

Tied very closely to free agency and player contracts is the final and most important issue in the lockout: a salary cap. Owners are steadfast in their insistence that a salary cap is required to ensure the future survival and health of the league, whereas the players refuse to even negotiate on any deal involving a hard cap. Ignoring economic details such as what amount is a reasonable cap, it is possible to focus on more fan-centric details of a cap. First off, a salary cap will not translate into a cap on ticket prices. Teams will still be free to raise ticket prices as the see fit. The main benefit for fans comes from the increase in league parity that a cap ensures. No longer can big market, big money teams such as the Toronto Maple Leafs fill their roster with every high priced, marquee player available. Teams will be forced to develop a core of star players, and fill the rest of their roster with players that fit under a capped system. This allows more teams to have marquee players and more teams to be competitive on a yearly basis.

Unfortunately, a solution to the current labour troubles in the NHL is far off in the horizon. With neither side negotiating currently, fans can expect to read and hear many more media reports on the owners and the players. Fans can also expect to be informed on what both sides are thinking, but rarely, if ever, will their interests be discussed. It's disappointing to see that the paying customers of both the owners and the players have been removed from the possible solution. Hopefully, in the best interest of the game of hockey, the fans get placed back into the equation.

"It's disappointing to see that the paying customers of both the owners and the players have been removed from the possible solution"

DVD Review: Firefly

Sheldon Petrie
3B Mechanical

If someone were to ask you to name one great outer space Science Fiction TV show you'd probably say Star Trek. And why not? The show which single handedly made it cool to dress up in pajamas, aka the Star Trek uniform, talk in One. Word. Sentences., and inspired generations of children, teenagers and adults alike to become scientists, engineers, doctors and more. The history of Star Trek spans close to 40 years of television but it is interesting to note that it nearly ended after its second season, and not its third. With reports of the series about to be cancelled after two seasons fans across America wrote in to Paramount demanding that it stay in production—the petition worked and production continued onto season 3. Despite being #1 in the key 18-24 demographic it was cancelled after this third season. The story of the Starship Enterprise came to an abrupt halt. Despite this travesty, it became a ratings and cultural phenomenon in syndication and continues to this day having spawned 3 sequel TV series, a prequel TV series and 10 major motion pictures.

Star Trek is proof that with the right people behind you and with fan support truly great TV shows can persevere against incredible forces in the cutthroat prime-time TV market, where ratings are everything. If you were to take the 5-year saga of Gene Roddenberry's saga of Star Trek from conception to cancellation and squeeze it down into about a year you'd get Firefly.

Firefly, a smart, witty and downright original show, set in the far future, was cancelled after a half-season by Fox. Similar to Star Trek which had the pilot (first show of the series) rejected, so too was the two hour pilot of Firefly entitled "Serenity?". Fox executives thought it was too long, took too long to introduce all of the characters and didn't feature enough action or comedy to satisfy a modern-day Friday night audience.

Instead of scrapping the entire pilot and re-shooting the whole thing (as in Star Trek) a second pilot, entitled The Train Job was written in three days and presented to the executives. Based upon this script a half season of 12 episodes was authorized for production.

Continued on page 14. See Firefly: Cult Following

"If you were to take the 5 year saga of . . . Star Trek. . . and squeeze it down into about a year you'd get Firefly"

Phonebooking Creator

...continued from Page 7.

morning exercises, like push ups on phonebooks. Next, you need to acquire a large phonebook. Never Phonebook alone, unless you're some kind of Phonebooking ninja. You see, cowards always fight in packs. You try to pick on someone smaller than you. Next is the setting. Try to find novel situations to start a Phonebooking. Historic events are great. The more remote the location the better.

"Some of us have heard that Phonebooking has made it on international television, can you tell us more about this?"

"It all started when we got an E-mail from Tech TV during the summer. This is an American channel that airs in approximately 50 million homes. The show that we received the E-mail from was Unscrewed, which talks about the darker side of the internet. We made it onto the episode that talked about exercising your sex muscles. The host of the show even got Phonebooked by one of the stage crew."

"Do you have a preferred brand of phonebook?"

"I personally like the Kitchener/Waterloo Bell yellow pages, which is the campus standard. Although

it's not very durable, tends to fall apart quite easily. However, it's still an excellent product, appropriate weight and size. It also had excellent acoustics."

At this point Matt demonstrates the phonebook's excellent quality on me. My next question was going to be whether or not phonebooking really hurts, but I didn't want a second demonstration.

"Have you ever phonebooked anyone famous before?"

"Well, during this summer the Prime Minister visited Brampton. I arrived at the train station with a phonebook in my backpack. However, I chickened out at the last minute."

"For all the ladies out there who want to know, just how big is your phonebook?"

"Huge-friggen-normous" *winks suggestively*

"What are your future plans for Phonebooking?"

"Well, there's already been the first report of phonebooking in the United States. We're also aiming to have phonebooking in all ten provinces and eventually in every continent. Also, since the X-prize has already been won, we are hoping to eventually have a Phonebooking in space. However, this would require a bit of funding so you could just forward all donations to me."

"...since the X-Prize has been won, we're hoping to eventually have a phonebooking in space"

Columns

Firefly: Cult Following

...continued from Page 13.

But before we go any further, a little history lesson. Joss Whedon, creator of Firefly, is better known as the creator of Buffy: The Vampire Slayer starring Sarah Michelle Gellar and its hit spin-off Angel starring David Boreanaz. Just as in Star Trek parallels can be drawn between Angel and Firefly as they were both cancelled within 6 months of each other despite huge fan backlash in support of each series.

Firefly was pitched as a show set in the far future around a small group of people onboard a small ship, traveling from place to place and job to job--Space Cowboys if you will. Set in the 25th century, where humanity has colonized most of the explored galaxy. Powerful ships are used to cross the great distances between colonized planets carrying cargo and people. People can buy ships and use them for personal use such as ferrying cargo, salvage operations and the like.

The focus of the story was on a small, archaic transport ship christened 'Serenity' by its captain, Malcom Reynolds, played by Nathan Fillion. The captain and his crew hired themselves out for various jobs, some honest but most of them at the far side of the law.

These honest and less honest jobs tended to go off-plan in many cases so it was up to the resourceful crew and their tools (i.e. guns and quick thinking) to get them out of whatever trouble they were in.

The crew complement is too detailed to go into here but suffice it to say this isn't the U.S.S. Enterprise. The total complement is 9, including first officer, pilot, a brilliant young doctor and his mentally disturbed sister, a musclem/enforcer if you will, ship engineer, and other character entitled a Companion, similar to a prostitute but far more regal and accepted. The final character is a mysterious holy man called a Shepard who possesses knowledge of the Alliance, people and places of the time comes as great surprise to the crew of the ship.

Thus we come to the Alliance, the main protagonist of the story. About 6 years prior to the setting of the story there was a large war fought between two groups, the Alliance, whose goal was to unify the governing of all planets with a central leadership and the Independents, called 'Browncoats', who wanted to keep all of the colonized planets separate and free from central rule. Needless to say, the independents lost, with Malcom Reynolds one of the bitter survivors of the deciding battle of the war.

As a result of his experiences Reynolds is a haunted man, constantly trying to keep himself and his crew from beneath the eyes of the Alliance and out of harm's way while combating his demons from his past. Due to the nature of the work the captain and other crew members are forced and sometimes choose to act in a morally compromised way.

Despite the varying degrees of morality displayed by the captain and some

members of her crew, the choice to have characters who, in some cases, were morally compromised out of greed or hate or misunderstanding added such great depths to the characters. There was always a reason for a person acting in a certain way, this demonstrated that there was a great amount of back history planned out for each character that we would get to know as the show progressed.

There was a simple work ethic which was "Do the Job, Get Paid" As such to get paid you had to work hard, do your job well and above all protect everyone onboard.

When it finally aired, the "Train Job" received decent reviews and ratings. Sadly, after flip flopping with the air dates during the week and even the time of day, subsequent episodes had ratings which just didn't cut it for Fox execs. After 10 aired episodes including the original pilot, "Serenity", near the end of its original run, the show was quietly cancelled much to the dismay of fans that vocally vouched their support of the show on web forums and on über-geek Harry Knowles' AintItCoolNews.com web site.

Alas, after 14 episodes completed, 26 millions dollars spent (a remarkable achievement considering that the two hour pilot for the new ABC series 'Lost' cost 12 million dollars), the show featuring motion picture level visual effects, superb acting and story-telling ended just as fans thought the story was just beginning.

What would happen to the romance between the doctor and young engineer?

Would they ever find out about what happened to the young doctor's sister?

What was the mysterious past of the Shepard?

Would the musclem ever say anything that made sense?

All these and many other questions were left unanswered. But then, glimmering hope arrived when it was announced that Firefly would be coming to DVD! In Widescreen! With Commentary on Select Episodes! The unaired ones would be on the set too! With Special features too!

If there is one single thing that Fox knows how to do, it is how to do TV shows on DVD. The complete series is packed in a sturdy cover box with each DVD housed inside its own thin case. Disks one to three hold 4 episodes each with disk four holding 3 episodes and all

The Picture of the Issue!

Submitted by Minshi Bonnie Yu,
1A Systems



"Random street, Osaka, Japan"

of the documentary features.

The show is presented in order by filmed date and not air date so as to retain continuity. While it may seem jarring to have two pilots for the same show they compliment each other nicely as 'Serenity' (the original pilot) introduces us to the core crew first, followed by the passengers that they pick up after a salvage job went sour. The remainder of 'Serenity' details how they decide to band together to survive welcoming the new additions. The second episode, 'the Train Job' has a much higher level of action to it and still managers to give a run-down on all main characters and their responsibilities on the ship.

The remaining episodes are all quite good with a few personal favorites including 'Heart of Gold', where the crew comes to the rescue of a group of prostitutes being threatened by a planetary official, 'Out of Gas' which details how Malcom found the ship and gathered his core crew, and 'War Stories', where Malcom gets captured by a nasty gentleman whose prior train job didn't go so well.

Episode Commentary is limited to a handful of episodes but does provide an insight into the making of Firefly, the development of the show and convys the general sense of trying to make the show so that people could relate to it despite the setting of the series. Additionally Joss

Whedon elaborates fully on many plot points and storylines which were inserted to be later developed had the show actually continued.

The special features documentaries chronicle how the show got started, how all of the principals were cast, developing the Firefly universe, setting up the good guys and bad guys, and so on. A most interesting bit was on the development of very distinct visual effects style and how all outer space scenes are presented as they would actually be—silent.

Other small bonus features include a Gag reel, Alan Tudyk's pilot 'Wash' very funny audition, and a classy take of Joss Whedon singing the Firefly theme song.

Another featurette details how the ship itself was designed and built as two massive sets so that you could literally film someone walking the entire length of the ship in one take.

All in all this is a fantastic DVD set devoted to a great albeit short-lived tale of the future. Please support Firefly by checking out the DVD set, I promise you won't be disappointed.

Please also see www.fireflymovie.com an unofficial home page devoted to the upcoming movie based upon Firefly, aptly titled "Serenity" It is slated for release on April 22 2005, about a month before Star Wars Episode 3.

ARTS CORNER

6 Ways to look at Danielle Smoking

Taneem A. Talukdar
1B Systems

1. Inhale
The smoke surges through her and her eyes are forced shut. The craving that itches behind her every thought is momentarily sated. She is outside of time and space. A state of total contentment for the briefest of moments.

2. Exhale
Disjointed laughter rings around the circle of friends. Standing behind the school parking lot because classes are depressing. Life is in technicolor here, with friends who don't care either.

"Screw you," says Dylan, and pushes back Kevin both of them laughing. She smiles watching with the rest, while lazily letting the smoke flow out of her. He's cute and makes her laugh. And it feels great to forget about grey and drab real life.

3. Inhale
Her thoughts fragment instantly. Want, need, worries, dates, everything dissolve in a haze of nothingness. Not quite bliss, not quite anything.

When she first started, it wasn't like this. The feeling didn't come first. The cravings did. It was in satisfying this growing monster that she started entering Neverneverland.

4. Exhale
When life isn't bright and shiny like on tv, no one knows you in school, mum and dad live in a different world, how do you find yourself?

She met Dylan and the others last year. They took her in and gave her a network she lost herself in. They didn't care for class, they hated the English teachers, they were assured of a future but only vaguely. Everything Is Going To Be Alright.

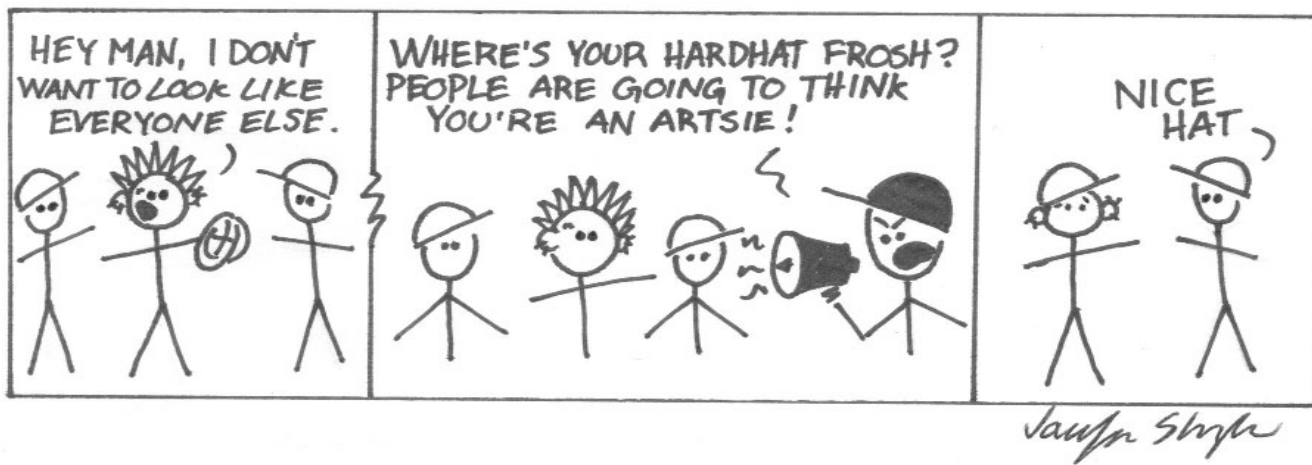
They hung out all the time. Constantly listened to punk, played video games and occasionally got drunk at Kevin's house. They also smoked.

5. Inhale
She reaches the plateau, familiar after the first few drags. Now her drags slow down, and she savors the smoke. She's thinking about the joint of weed she had last weekend.

6. Exhale
"Getting sick of your behavior/ my senses tell me ...danger"
The boom box is loud, the laughter is louder and Danielle knows she's gonna be alright. But god, as the smoke leaves her, she really feels like a joint right now.



af ~~FIX~~ it with duct tape



My Pets



i remember when i lost her
it caused me lots of pain.
as i cleaned out her bowl,
she slid right down the drain.

once upon a time
i had a mouse named Sly.
i found this little critter
inside my apple pie.
when i woke up one morning,
i had quite a laugh.
the mousetrap i had set out
had snapped that Sly in half.

once upon a time
i had a frog named Stew.
i found the slimy dude
inside my mother's shoe.
one day he hopped in the kitchen
and landed in a drink
right before it was blended
and poured down in the sink.

once upon a time
i had a snake named Greg.
this big constricting beast
had tried to eat my leg.
instead i shoved a table
right down its gaping throat.
and then i fed it Jake,
my one and only goat.

once upon a time
i had a goat named Jake.
i bought him for the purpose
of feeding him to my snake.
perhaps if he was bigger
i wouldn't have to flee
from my still hungry snake
who still wants to eat me.



once upon a time
i had a dog named Spot.
i found this little mutt
in a parking lot.
i took him for a walk.
we hadn't gone very far.
he ran into the street
and got hit by a car.

once upon a time
i had a cat named Fluffy.
i actually had her stolen
away from Patrick Duffy.
one early Sunday morning,
just as we left the house,
my little cat named Fluffy
ate a poisoned mouse.

once upon a time
i had a fish named Grace.
i stole her from the Mandarin
before i left the place.

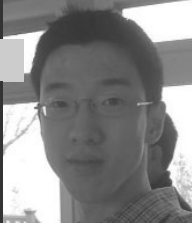
Want to show off your artistic side?

Have some poetry you'd like to share? Got any comics you doodled during calculus class? Submissions are always welcome at iwarrior@engmail.uwaterloo.ca, or in the Iron Warrior mailbox in the Orifice.

Columns

Photographer profiles: Mark Seliger and Annie Leibovitz -

David Yip



2B Mechanical

Chances are you've seen a picture by either of these two photographers and simply not known it, as both are noted celebrity photographers.

Mark Seliger

If you've ever seen a copy of Rolling Stone, GQ, or Vanity Fair, you've seen Mark Seliger's work. He is currently on contract working for Conde Nast Publications - working for GQ and Vanity Fair. He has shot over a hundred magazine covers and hundreds of feature stories. Beyond magazine covers, he has shot high profile ad campaigns for the likes of The Gap, Nike, and IBM, as well as television commercials and music videos. Among his music video work is the video to the iconic theme song to Dawson's Creek: Paula Cole's hit "I Don't Want to Wait". Ah, that was a good show. What was really going on with Dawson and Joey? And Pacey was so hot. Anyway, prior to his work for Conde Nast, he's worked for Rolling Stone since 1987.



In addition to his pop-culture work, he has also published a few books, with his best portraits of icons such as Kurt Cobain, Jerry Garcia, as well as his best work from Rolling Stone. Other books include a collaboration between himself and Lenny Kravitz, and a personal project about the Holocaust entitled 'When They Came To Take My Father'. Mark Seliger was born in Texas.

Pictured is a shot from Mark's shoot with Lindsay Lohan in the June 2004 edition of Vanity Fair. Yea, that got the attention of a lot of you didn't it?

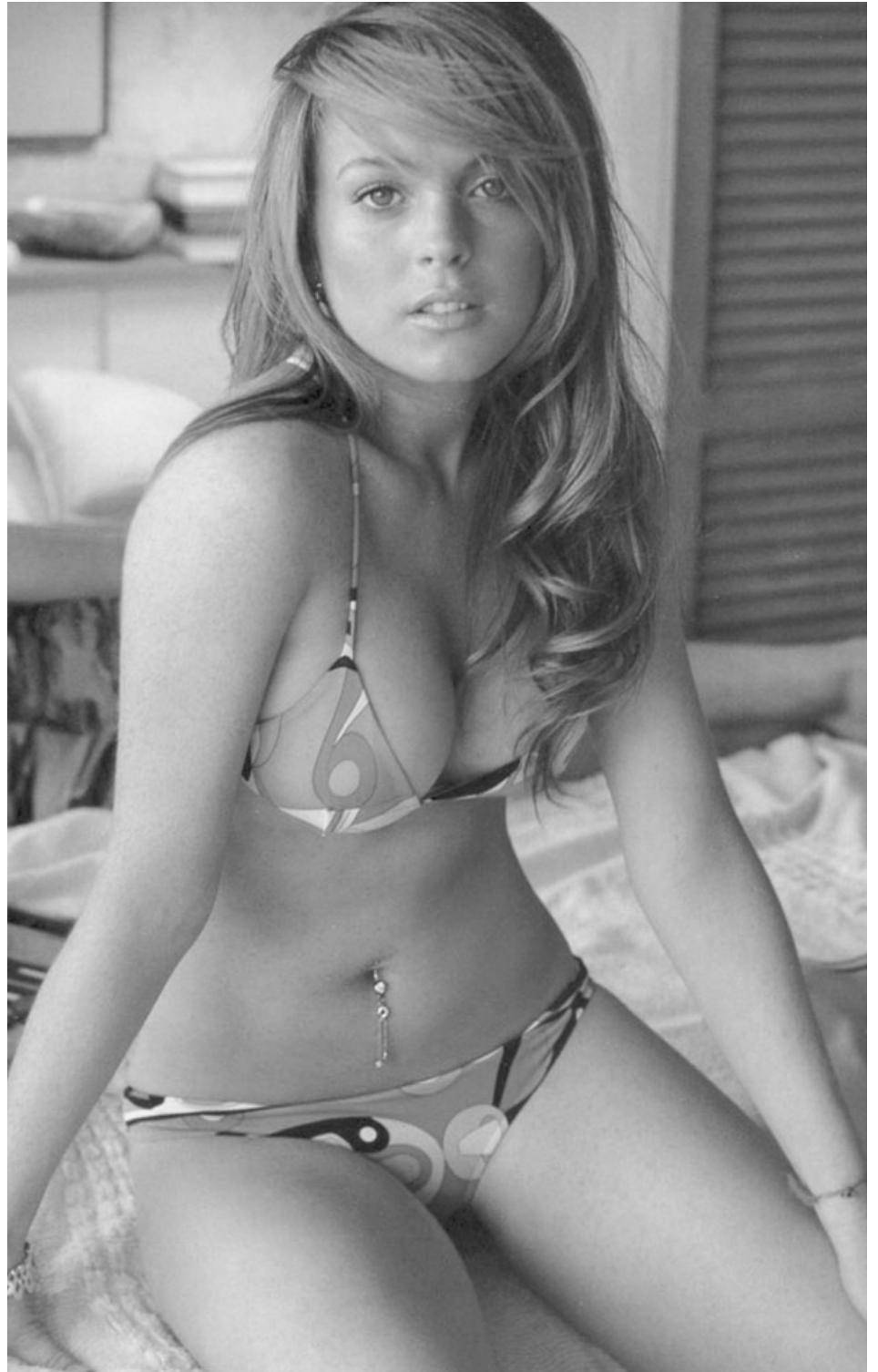
Annie Leibovitz

Annie Leibovitz is also an American photographer, born in 1949. Much of her work was also done for Rolling Stone, where she became chief photographer in 1973. Her work therefore reflects the celebrities of the time. Indeed one of her most famous portraits is that of a naked John Lennon embracing a fully clothed Yoko Ono, perhaps with the added tragedy that it was taken shortly before Lennon was killed. She has won numerous awards, such as American Society of Magazine Photographers' awards both for Best Photograph and Photographer of the Year, the International Center of Photography Infinity Award for Photographer of the Year.

Babies of the 80s will likely not remember this, but in the late 1980s she shot a high-profile for American Express featuring celebrity cardholders such as Tom Selleck and Luciano Pavarotti. I certainly don't remember, but I do remember the Ferrari in Magnum PI. She is generally known as the best American portrait photographer.

One of her recent projects is a book entitled Women, wherein she presents images of various women: from coal miners, to show-girls, to drag race drivers, and astronauts. It is accompanied by an essay by noted novelist Susan Sontag.

Pictured is a portrait of Johnny and June Cash from Annie's book American Music.



the Iron Inquisition

Richard Hui, 2A Chemical

What's the best club in Waterloo and why?



"Louie's 'cause it's a hoochie bar."
Rishi Lukka - 2B Systems



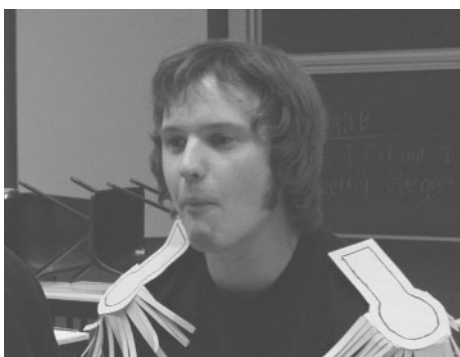
"Nothing in Waterloo"
Sabrina Giovinazzo - 2A Chemical



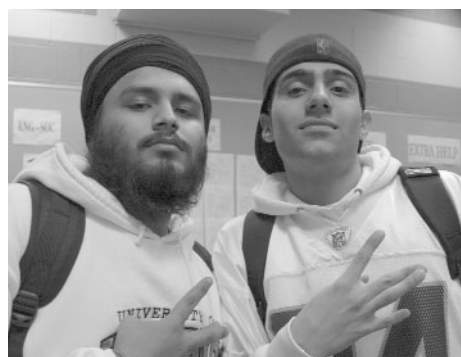
"Kick-off cuz they have litre beers."
Melinda Hurd - 2B Chemical



"Rev's better; it's not umpa-umpa."
Heidi's - 1A Environmental



"Phil's cuz it's the bomb."
Dan - 2B Chemical



"Rev, just get drunk before."
Aman Hehar & Vijayant Singh -
2A Mechanical



"Louie's cuz it's dirty."
Edward Tan - 3N Computer



"Oktoberfest, there's this arena where you can polka all around." - June Lowe