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THE IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY VOLUME 28 ISSUE 13 | WEDNESDAY, OCTOBER 31, 2007

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Future Nano Build Site Compromised! ***Page 14***

http://iwarrior.uwaterloo.ca

Diary from Dam-Nation

Third Installment of Dane's Compelling Reports from Ghana

DANE CORNEIL
3N SYSTEMS

Dane Corneil is a 3A SYDE Engineering student spending his co-op term this fall in Ghana, a country in Africa. He is the only Engineers Without Borders (EWB) short term volunteer (aka Junior Fellow or JF) in Africa this fall.

Hey Waterloo!

If there's one thing Ghana seems to love, it would have to be dams (...and football). Akosombo, the giant hydroelectric dam in the south, supplies the entire country with electricity, and restrains the world's largest artificial lake (Lake Volta). A new hydroelectric dam is being built, and will hopefully address the recent rolling blackouts.

Here in Kassena-Nankana, though, it's all about irrigation. The district has over 40 small-scale dams, and two large ones which supply irrigation canals, allowing farmers to grow crops during the dry season. The dams are also used for livestock and fishing. Dams have been in use here for a long time, and with good reason; the climate is defined by erratic rainfall and a very long dry season (beginning in October).

One important way of looking at reducing poverty in northern Ghana is by promoting "Agriculture as a Business". By assisting farmers in moving from sustenance farming (keeping most of what you grow for your family's meals) to income-based farming (selling more crops on the market), the extreme vulnerability of sustenance farming can be reduced.

Ghana's system of dams has created the world's largest artificial lake, Lake Volta

Farmers primarily grow staple cereal crops (maize, millet, sorghum, rice) during the rainy season, often for sustenance. In the dry season, however, vegetables can be grown on the irrigated land, and sold on the market. Every time a farmer can turn a profit growing vegetable crops in the dry season, that extra cash makes him or her a little less vulnerable to how the next rainy season plays out. It also affords more opportunities, such as sending children to higher levels of education.

"... huge areas of the Upper-East Region experienced the worst floods in 15 years which actually washed away many of the smaller dams."

I'm currently working on a report assessing the profitability and risks of three of the main dry season vegetable crops: tomatoes, onions and hot peppers (or "peypey" as they're called here). To get some data, I visited Tono Dam, the largest dam in the district (and the biggest of its kind in West Africa, from some accounts).

I was struck by just how massive Tono is; not having seen a decent-sized body of water since leaving Canada, the lake seemed to stretch out forever. Tono Dam spans a distance of 2 kilometres, and irrigates a total area of 2500 hectares. The irrigation canal winds its way through 9 villages. The spillway has been flowing for almost a month due to the rains; luckily, the water level is far below what it was at the height of the floods, when the spillway threatened to overflow (a situation which would have been disastrous for the surrounding villages).

The flowing spillway might be evidence of a harsh rainy season, but is good news for fishermen. Anyone can pay for a seasonal contract to fish with nets on the lake. When the spillway's flowing, though, all you have to do is wait for the fish to come to you. There's been a lot of good tilapia in Navrongo market lately.

I've definitely seen first hand how much people are subject to the weather patterns and availability of water. The dams are essential to the survival of many communities. A month or so ago, as I mentioned in a previous letter, huge areas of the Upper-East Region experienced the worst floods in 15 years which actually washed away many of the smaller dams. When I anxiously asked my friend Lizzy, a high school

See DIARY on Page 3

We Will Remember

A Letter from the Assistant Editor

JEFF KAO
ASSISTANT EDITOR

Waterloo engineers lead such busy lives. Assignments, midterms, co-op applications and the occasional (or frequent) party all constitute part of a typical work week. We strive so hard for that extra mark, the ideal placement, or that feeling of euphoria somewhere between buzzed and vomitous; all while asserting our independence away from the parental nest. What a time it is to be alive!

On Friday, I was living out that independence at the local grocery store, busy in the canned goods aisle as I compared the prices of tuna. Would it be flaked or chunked, in water or vegetable oil? As I pulled a few cans up from the lowest shelf (the good deals are never at eye level), I noticed the elderly man out of the corner of my eye.

He was not less than 75, shopping in the same section for canned tuna – easy to prepare, and no cooking time required. It was definitely something I could identify with. I noticed a red poppy pinned to his jacket; the first one I had seen this year. It was only two weeks until Remembrance Day, and I had almost forgotten.

I've always been moved by the sight of a poppy on somebody's collar in November. Even though we've never met, I feel a strange connection to them; a mutual yet unspoken understanding. We're both grateful and remember the men and women who put their lives at risk, allowing us to live in the free society that we have today. Their sacrifice made our freedom possible. Remembrance Day compels us to look into the past. The motto "Lest we Forget" is a warning, for fear that we are forgetting the soldiers who died fighting the "great evils" of the past. However, is it really possible to characterize what that evil was?

If there's anything that history has taught us, it is that the agents and causes of war are varied and complex. People of every race, level of education, economic circumstance, and religion (or lack thereof) have been capable of terrible acts against humanity. However, there is one commonality between these atrocities: that even though the public could sense that there was something wrong, they failed to act.

Many tragedies of modern history have involved the implicit consent of the complicit masses. The common defense of "I was just following orders" was often used during war crimes trials following the Second World War. The Nuremberg Principles were then established to put the responsibility on the individual to choose between internal laws and the orders of superiors versus international law. Perhaps what we call evil is simply a wrong choice that leads to the transgression of law?

But then again, terrible dictatorships have often come into power under a guise of legality. Totalitarian governments have come into existence out of democracies, invoking a state of emergency to legally suspend civil liberties (just for a moment, of course). Those rights were often never returned until these governments were toppled by conflict or revolution. Was this wrong? Perhaps. But illegal it certainly was not. The choice between right and wrong is ultimately greater than obeying the law. In the end, it's our moral choice and responsibility to speak out and prevent these mistakes from being repeated.

During the trial of Adolf Eichmann, the philosopher Hannah Arendt used the term "banality of evil" to describe his complicity of the role he played in the Holocaust. He was not a racist, did not harbour any hate against Jews, but still followed his orders without question, rationalizing these atrocities as long as it didn't personally affect him. His great crime was the tolerance of what his intuition should have told him was deeply wrong.

Edmund Burke put it best when he said that "All that is necessary for the triumph of evil is that good men do nothing." The words "Lest we Forget" refers not only to the memory of past sacrifices, but to its lessons. It refers to the suppression of pro-democracy protests in Burma and the government-backed genocide in Sudan. It refers the ongoing human rights violations in China, and to Russia, now a virtually dissent-free society, where state sponsored media reigns and suspicious murders of journalists and dissidents at home and abroad silence criticism. Lives are still lost, war crimes are still occurring, and the struggle between conscience and apathy continues to this day.

My grandfather is over 90 years old. He doesn't have the best memory anymore, but he can recounts the horrors of fighting in the Second World War as if it was yesterday. The sad reality is that less and less of our World War II veterans are still around, and our collective reminder of authority unchecked by democracy is in danger of fading. On Remembrance Day, memories are only the beginning of our tribute to the brave men and women who made the ultimate sacrifice. To honour them, the very least we could ask of ourselves is to question that which we think is wrong, and to challenge the mistakes of perceived authority. We will remember them, in the hopes that through our vigilance and moral decisions we can make them proud and their lives worthwhile.

"Science may have found a cure for most evils; but it has found no remedy for the worst of them all - the apathy of human beings."

- Helen Keller

Poem: Epitaph

RAFEE AMEEN
3B MECHANICAL

crossing desolation ground
now, boots crunching
over black glass, over
the charred, splintered bones
of a murdered city.

can't breathe yet, not quite yet,
because the snowflakes
taste of brittle, grey ash.

and when you cough,
rust-red flecks
stain your jumpsuit gloves.

yellow badge turning black
- too many rads;
long past the lethal dose.

-x-

not long, before the city's
dead join you, all slippery
skin and wasted flesh;
flash-burned eyes
silent and accusing:
"why?" they ask.

when you tell them
it was war, the silence
defeans you.

"we avenged you,"
you try again, pleading
(it's a redemption thing)
"we won," you kneel,
bleeding and broken.

"our eternal gratitude,"
says a mother, smiles
while her ashen child
simply watches you

and she smiles wider
(and sharper, and
redder, and darker)
"our thanks," she says
"forever and always."

and when you turn to run
the parachute cord
trips you.

In your honour,
the city's dead celebrate
and the ash grey twilight
burns rust-red
one last time.

-x-

same nightmare again.
every night they kill you,
slower and slower.
it's a redemption thing:
forever and always.

but you're no Loki.
or Sisyphus. eternity
is far too long a wait.

so you wait instead
for the day
you won't have anything
left to give.

Future Submission Deadlines

November 9 for publication on November 14, 2007
November 23 for publication on November 28, 2007
Send your submissions to iwarrior@engmail.uwaterloo.ca

THE IRON WARRIOR

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

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

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Diary from Ghana

DIARY
Continued from Page 1

student what these communities would do, she looked at me calmly: "We will rebuild in the dry season," without even batting an eyelash.

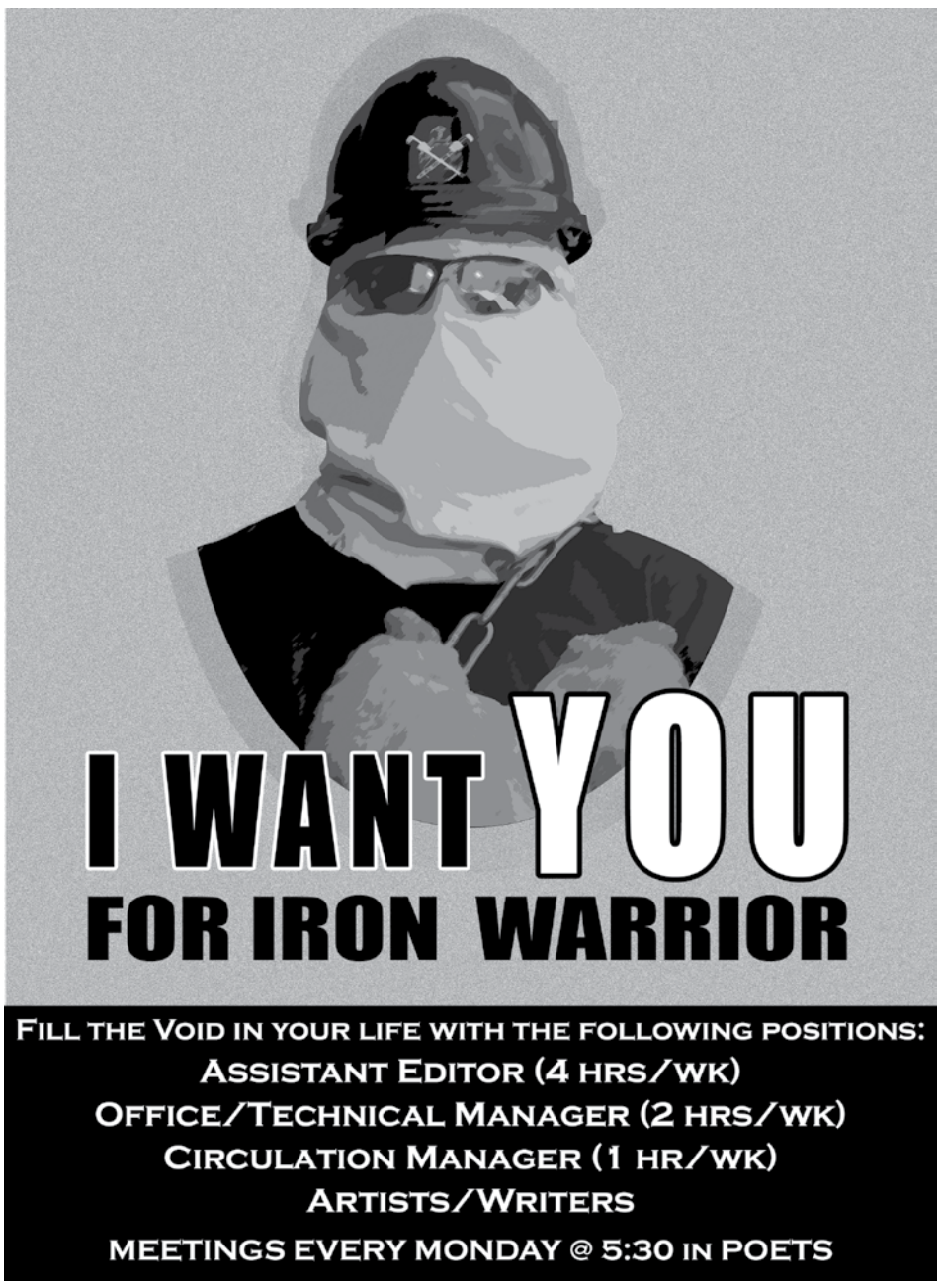
People just cope. And she's right. I have watched people, like Auntie, do just that: cope. Auntie now sets up her tables and her sewing machine under the shade of a baobab tree. This ability to cope struck me most while I was walking across the village fields in Sakote with George, my host during my stay. The group of 12 men were bent over in the field weeding sorghum with hand hoes to the energetic and skillful music of a hand-made guitar accompanied by song. The group stopped as we approached to greet us and walked with us up to the house. We met a pregnant woman pounding spices for the worker's evening soup surrounded by three young children. Their house was particularly affected, with everyone of its six rooms collapsed. Yet despite it all, we received a warm welcome into their home and were offered flour water as is tradition when strangers arrive.

"We met a pregnant woman pounding spices for the worker's evening soup surrounded by three young children. Their house was particularly affected, with everyone of its six rooms collapsed."

The destruction and destitution left from the floods has emphasized to me the importance in reducing farmers vulnerability to the weather. I am now looking ahead to the next two months when I will be working with agricultural extension agents at MoFA to promote a business-minded approach to planning the dry season gardening that occurs in irrigated areas at damsites in some communities.

A strong crop in the dry season could really help some of the families who lost their crops this rainy season, and developing the habit of planning their production level each year will help to protect farmers in the future as rains are consistently unpredictable.

Check out the next issue of The Iron Warrior for Dane's next letter from the field! In the meantime, visit daneinghana.blogspot.com to read more on Dane's experiences.



Editor's Note:

The Editor-in-Chief would like to apologize for the week delay in producing this issue of The Iron Warrior. It was never our intent to deprive avid readers of their source of Engineering news and humour for so long. Unfortunately, due to a lack of staff availability during midterms, we could not produce an issue of the quality to which our readers have come to expect, in time. On the bright side, look forward to two issues in two weeks! Our next issue comes out on November 14th.

- Faraz Syed, Editor-in-Chief

The Solution to a Power Hungry World… All Over Again

ALEX GREEN
1A ELECTRICAL

At the University of Chicago on December 2nd, 1942, a handful of observers watched the first ever nuclear reactor begin a sustained reaction, and produce nuclear heat. Witnessing the beginning of a new age, dreams were being made out of this amazing idea of nuclear power, an amazing future lay in front of them. After the United States dropped two nuclear warheads on Hiroshima and Nagasaki in 1945 the horrendous destruction made many wary of the idea of nuclear power. Nevertheless, development continued and a promising path lay ahead for this new form of energy. It seemed like the power needs of the future would be a trivial problem, easily handled by the nuclear reactors soon to be put into commission.

"The future looks bright for nuclear energy once again, and the growing needs of the world may soon be quenched by this amazing advance in technology. Many environmentalists have seen the benefits these PBRs."

Yet years later, with the near catastrophic accident at Three Mile Island and the following tragic accident of the Chernobyl, the 'atomic age' seemed to draw to a close, and this solution left aside. However, research never ceased, and many revolutionary new reactors have been created including Canada's own CANDU reactor. Another reactor that has taken a particular interest on a global scale is the Pebble Bed Reactor. This revolutionary reactor seems to have all the advantages of nuclear energy, with very few of its drawbacks. Even environmentalists have begun to recognize the advantages to its amazing design.

Research for the gas cooled Pebble Bed Reactor began in Germany in 1966, yet it was not as economic or efficient as the conventional water cooled reactors of the time. Fortunately, after the prototype plant was decommissioned a few years later, the research did not cease. In 2003, after years of research and planning, a fully functioning 110MW Pebble Bed Reactor was constructed in Koeberge, South Africa.

Conventional nuclear reactors use radioactive rods of Plutonium or Uranium as fuel. When put in close proximity to each other, through nuclear reactions, the rods produce large amounts of heat used to create electrical power. This heat is moderated by a control rod, which determines the rate of the nuclear reaction and stops the reaction from becoming super critical, or accelerating out of control into a nuclear explosion. This has proven to be successful in power production, yet the waste is highly toxic and the fuel can be purified to create weapons grade plutonium.

On the other hand, the pebble bed reactor uses 'pebbles' of fuel, which in fact are a mix of the control rod material, graphite, and the uranium fuel. The materials similarly when put in close proximity can create heat, and are mixed in a specially designed sphere. Since there is a combination of this neutron absorbing material and radioactive fuel, even if the reactor coolant was drained, a meltdown is physically impossible. In full confidence, this theory was tested in a functioning reactor. Helium gas coolant was drained from a functioning Pebble Bed Reactor, and although the temperature rose it reached a plateau well below the dangerous melting level of the core. This amazing property is a large advantage as a catastrophic event like Chernobyl is not a worry, even in the worst case scenario of a complete coolant loss.

After the fuel is depleted in the PBR reactor, it can be disposed of safely, as the pebbles are not radioactive after they are depleted. Even if the sphere was broken open, only a small amount of radio active material would be released, and not nearly enough to be harmful to living organisms. The pebbles are extremely hard to process into weapons grade plutonium, yet are no less efficient then the rods created in many modern reactors.

The future looks bright for nuclear energy once again, and the growing needs of the world may soon be quenched by this amazing advance in technology. Many environmentalists have seen the benefits these PBRs. Heads will turn as reactors begin to open in the United States, China, and even Europe, and nuclear energy once again becomes the new solution to power. It seems a fitting solution to the struggle for electrical energy, and one of the greatest achievements in environmentally friendly electricity production to date.

ENGINEERING SOCIETY EXECUTIVE REPORTS

Presidential Report

AMANDA HOFF
PRESIDENT

Amanda: Hello everyone, this is Amanda Hoff reporting in with an IW-exclusive interview with Amanda Hoff! Hello Amanda, great to have you here with us…

Amanda: Thanks, Amanda, it's great to be here!

Amanda: So, I heard through the grapevine that the big, shiny, Ridgid, 60-inch piece of chromed awesome that we love so much is turning 40 this year. Can you confirm this?

Amanda: Yes, your sources are correct! The Tool is 40 years old, brought to UW by the 1967 EngSoc president, Jim Pike.

Amanda: Jim Pike… I've heard that name before… Didn't he come visit for MOT last term on ASoc?

Amanda: Yes, he did! And I'm pleased to say that he's coming back this term!! That's right, everyone who attends MOT this term will have the awesome treat of getting to meet the man behind the Tool!

Amanda: Wow, that's fantastic! I'll have to be sure not to miss out on that! Is there anything else happening to celebrate the Tool's birthday?

Amanda: Well, this Friday you can watch for a special guest appearance by the Tool during the day for photos! If you come out to CPH foyer at lunchtime, you'll have an opportunity to get your picture taken with the Tool, so you can come by yourself, with friends or classmates, or maybe with a boy-friend or girlfriend, and have your very own photos to commemorate this awesome occasion!

Amanda: Sweeeeeet! That'll be one to send home to Mom and Dad… I could talk about the Tool all day, but I have a few other questions to ask you. I'm a little stressed out after midterms, and I'm not really sure what to do… I think I'm losing my mind! Do you have any advice?

Amanda: I'm so glad you asked! Midterms are a stressful time for everyone, but there are lots of ways to get through them! Engineering Counselling (located in CPH inside the First Year Engineering Office) is absolutely fantastic… Neil and Christine are both awesome people to chat with, and they're great at helping students out with stress and other issues going on throughout the term (and it's free to see them!). Also, it's never too late to get involved in some extra-curriculars to take your mind off of your studies and help you meet some new people. Feel free to check out some of the clubs and student teams around campus, and hey, what kind of EngSoc president would I be if I didn't hype that up a little, too? EngSoc is always looking for more volunteers for the Task Team and various events, so if you're interested in getting involved just talk to one of us Exec and we'd love to help you find something that fits your schedule and interests!

Amanda: Awesome, that helps a lot, thanks! Well, that's about all the space we have in this issue, so I'd just like to thank you for your time… Until next issue, this has been Amanda Hoff and Amanda Hoff, in Amanda Hoff's Exec Report!

VP Internal Report

CAT HAY
VP INTERNAL

Welcome back from ! Things have been a little for a while, but I hope you didn't miss the events of the last week. On Saturday we toured the and the continued as our Halloween directors took us to cinema to watch . On Tuesday we carved in the foyer. Wednesday's meeting got a little more exciting when showed up to run the meeting.

But worry if you missed those events, because there are so many to come throughout the of November! We will have another open at lunch on Friday (Nov 2) in POETS. Tuesday (Nov 6) brings the darkroom open at and an evening tournament in POETS for all 2010 grads. Wednesday is the finale of Enginuity! We'll be celebrating all night Thursday (well, until 1am) at Semi Formal. to get your in the Orifice ($35 dinner & dance, $15 dance only, $20 at the door). And we'll be ending the week on with bandwars on Friday (Nov 9)!

Coming soon: the directors are putting together a contest, SCUNT will be happening Nov 16-17, EngPlay is Nov 16-17, TalEng Nov 19, and Genius Nov 21! Start getting your teams ready – we're going to put the 'vem' in November!

VP Education Report

PATT GILLIS
VP EDUCATION

As all of you can understand, due to midterms this report is going to be fairly brief, as I don't have all that much to update everybody on. (unless you all want to hear about how I bombed the 362 midterm!)

First off, on the PDEng front. At a previous PDEng Steering Committee meeting the question was raised as to what role it is to play in the future of the program. During the early development stages of the program the committee was used to outline and develop program requirements and goals, however in the upcoming phase this role is no longer necessary and the purpose of the committee was brought into question. Although final decisions as to the future of the committee were tabled to a future meeting there was a general agreement that an advisory board of some degree is required to help with administrative decisions and that roles and responsibilities should be clearly defined. On behalf of the students, it was put forward that we value the opportunity to provide our own feedback on an administrative level, and that regardless of the future of the committee, our biggest concern is that some mechanism remains in place for students to be given a voice in the decisions regarding this program.

Also, I would like to support our current Academic Rep Advisors in their efforts of establishing a list of current Academic Reps for each class on campus. If you are the Academic Rep for your class and have not already done so please contact either myself or the Academic Rep Advisors (e-mails can be found on the EngSoc website) with your names and your class to help us compile this list. This will help us not only provide support and guidance for the younger Academic Reps, it will also be used to help solicit feedback from specific departments and programs regarding proposed changes to current program requirements.

Finally, I would really like to encourage everybody to SUBMIT MIDTERMS to the EXAM BANK as you get them back, preferably with professor solutions included. Not only do you get that warm fuzzy feeling of helping out future years of your program but I also heard a rumour of P**5 points!

That's all for now!

WEEF Director Report

ALEXANDRE JAMES
WEEF DIRECTOR

WEEF is getting ready to give out lots of money.

Everyone should be thinking of proposals they would like to submit.

Entering November, the deadline of November 9th gets closer.

Free money is to be had by all!

I am here to help you with making a proposal.

Should you have any questions please email weef@engmail.uwaterloo.ca

Game time (proposal presentation meetings) will be November 13th and 15th

On the third floor of RCH, Room 306

On the 13th will be faculty funding and on the 15th will be student team funding

Do not forget to submit a proposal!!!

Furthermore, take a look at the participation graph.

On it you will find the percentage of refund requests for each class.

Respect is deserved by all students that participated this term.

You should all be proud to have such a great source of funding here at Waterloo.

Or at least be proud to be the largest fund of its kind in the world almost 10 million!

Understand: it's not what you do with it, it's how well endowed it is!

VP Finance Report

CHRIS JAMIESON
VP FINANCE

Hello all! I hope all your midterms went well, or at least if they didn't you did things to "compensate" for that!

I have a couple announcements this time around. First and foremost, I would like to thank all the first year classes who submitted a shirt design to the contest. The winners will be announced at the EngSoc meeting Oct 31st. All classes will be getting P**5 points.

I would also like to thank all the organizations who submitted funding proposals. I wish you the best of luck in the approval procedure.

That is all from me this week. Enjoy MOT!

CATCHY HEADLINES KICK A**

(direct quote: Faraz Syed, IW EIC)

VP External Report

ERICA WAUGH
VP EXTERNAL

- As soon as you can, volunteer for Shadow Day, online at engsoc.uwaterloo.ca

- A big thanks for everyone who applied for PEO Student Conference!

- Applications are available for Congress 2008!

Also brought to you by the following numbers:

- 11 – as in November 11th, watch for information on the Remembrance Day Ceremony

- 20 – as in the number of minutes EARLY I submitted my article!

Peace y'all and Happy Hallowe'en!

FedS Engineering Councillor Report

JEFFREY AHO
FEDS ENGINEERING COUNCILLOR

FedS has just come freshly out of its Annual General Meeting without incident. Notably, Computer Engineering Alumnus Jeff Henry was granted an honourary life membership in the Federation. Along with approval of the year's financial statements and a variety of small bylaw changes, GLOW will now be known as "GLOW - The Queer and Questioning Community Centre". Along with the name change comes a change in its mandate to reflect strategic visioning from the service's volunteer base earlier this year.

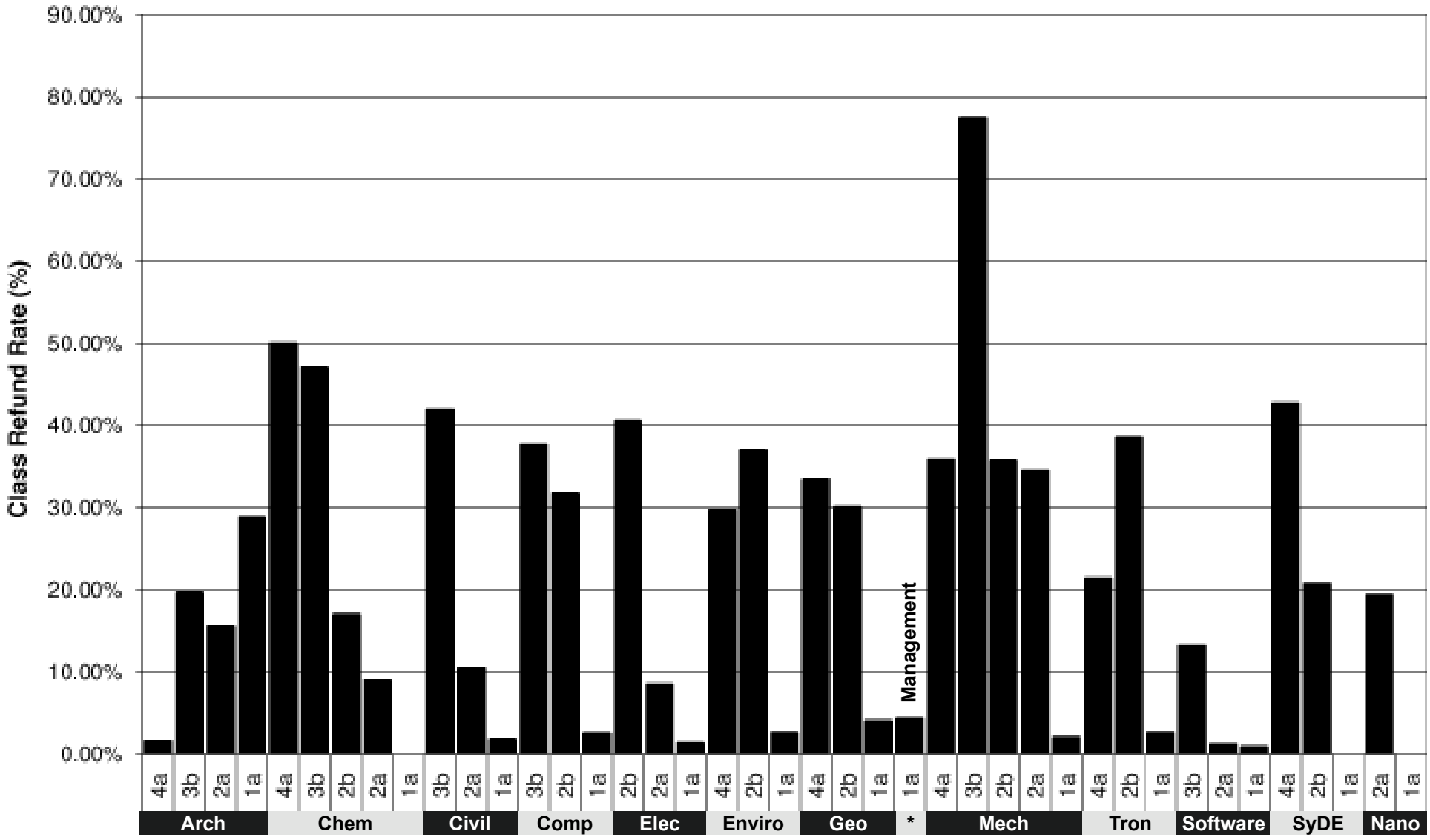
FedS council is now halfway through its term and will next meet on November 25th at 12:30PM in the SLC MPR. At the Halloween themed October council meeting, the body directed the executive to lobby the University for an online strikeable system (a choice to remove fees from your statement before paying) for refundable ancillary fees (such as Imprint, CKMS, and WPIRG) as well as for the Bylaws, Policies and Procedures committee to draft a policy expressing the corporation's stance on the issue. If you have any feedback on this issue, feel free to contact any of the Engineering councillors or the FedS Executive directly.

There are already several interested parties forming to run for FedS Executive positions in next February's election. In the last two years we have only had one candidate from Engineering run (our past engineering senator and election maverick Adam Schubert). If you are interested in running for a councillor or executive position you can start learning about the corporation by attending a council meeting or by talking to a council or executive member. They should be able to answer any questions you have. It would be great to see a few candidates from engineering run. After all, we are the faculty that has the largest number of FedS shareholders.

Tonight (October 31 – Halloween!) will be the 21st Annual Halloween Bash at Fed Hall starting at 8:00PM until 2:00AM. You can get discounted tickets at the FedS Office ($6/8 for UW Students/Non-UW) or purchase $10 tickets at the door. You can check out information about this and other upcoming events at http://pulse.FedS.ca. Some ones to look out for are Tony Lee, the XXX Hypnotist on November 13th at Fed Hall and the Trailer Park Boys at the Bomber on November 15th!

For those of you who are not familiar, a portion of FedS budget for every year is a fund managed by the Internal Funding Committee, made of a group of elected students who make decisions on who and how much money is to be given to different students. This year the budget has allotted $20,000 to be given out to students and student groups to help fund projects, events, and initiatives. If you have an idea and are in need of funding, you can visit http://FedS.ca/funding_student_initiatives where there are instructions on how to request funding. You can contact the VP Internal, Darcy Higgins at vpin@FedS.ca and he can answer any questions you may have or assist you through the submission

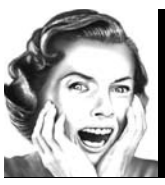
WEEF Refund Rates



Point

Should EngSoc Invest in Small Business?

Counterpoint



CHICO
9N WHYAMIHERE

No one would argue that EngSoc provides countless useful and relevant services and events that any UW engineering student would be lost without. Okay, maybe some would, and they'd be right. The fact is, EngSoc does all it can with the resources it has. Here are a few more facts for you:

- We have the largest undergraduate engineering student enrollment in Canada (apparently U of T challenges this fact). As a result we have the largest engineering student society

- Our closest rival (in terms of number of members) has more than eight times the operating budget we have.

- Every year our faculty and the university administration squeeze away a little bit of our traditional activities and festivities for the sake of "safety" and "political correctness", but mostly for the sake of "I-Don't-Want-To-Have-To-Deal-With-You-Students-Anymore"ness, whereas other universities have the alumni support and autonomy to continue their traditions in a way that they themselves dictate.

Waterloo is a young university, so it is fair that our alumni aren't numerous enough to contribute significantly to the engineering society. It is also fair that many alumni do not want to contribute back to any part of this university, considering the way undergraduates get treated in a lot of the faculty's departments. This challenge can be overcome by building resources to develop some measure of autonomy and "weight" in the eyes of administration.

It should also be acknowledged that EngSoc does an absolutely formidable job (thanks mostly to the stunning good looks and infallible intellect of Mary Bland) with the operating budget they have. A sizable chunk of the engineering undergrad population take advantage of the services and events provided by EngSoc. However, despite the fact that our university's administration seems to be resting on the reputation and laurels of our undergraduate program while it focuses on our graduate programs, EngSoc cannot follow their lead and cease to look forward.

"Dare to dream ... An EngSoc restaurant serving with special prices to engineering undergrads, the expansion of our services with more full-time staff, and the preservation of tradition of our events on land EngSoc owns and insures are ALL within the realm of possibility"

The last couple of years, no mention has been made about increasing EngSoc's term budget. It is simple economics that it will need to grow as prices inflate. However, little to no discussion of this subject has occurred. This is both a credit to the society for being able to provide such a complete set of services and events on their current budget and a flaw for for being satisfied with the status quo and not maintaining an attitude centered around growth.

The price of beer in POETS on Thursdays and Fridays is inflating beyond reason, the FEDs are managing to force EngSoc out of their mandatory free night per term of booking The Bombshelter and administration is choking our frosh week down towards what will soon resemble an episode of Teletubbies. Its obvious, EngSoc's legion of volunteers does not stack up against organizations of paid employees that own the buildings we operate in.

Dare to dream for a second. With enough capital and man-power (not a sexist remark), EngSoc is capable of pulling off some of the things our counterparts in Canada are pulling off. An EngSoc restaurant serving with special prices to engineering undergrads, the expansion of our services with more full-time staff, and the preservation of tradition of our events on land EngSoc owns and insures are ALL within the realm of possibility. Mind you, none of these are possible to be done tomorrow... or the day after... or the day after that... but then again, Rome wasn't built in a day. If EngSoc IS going to grow, then it needs to force the issue.

A very good argument was made, stating that "you can't force a good business idea" and I agree 100%, it takes keeping an eye out for that sort of thing. However, if EngSoc does not keep up brainstorming new ways of growing, a day will come when they are unable to provide the benefits that many of us currently enjoy. On that day EngSoc will be forced to come up with ideas to maintain the status quo.

DAK FEIR
1A WHATWASTHATPROGRAM

I am not going to argue that EngSoc getting a bigger budget without grabbing from students is a bad thing. EngSoc does an excellent job of providing services, and I fully believe that they could make good use of any additional funds.

But having them start running business ventures is an abysmally horrible idea.

The largest reason I believe this? RISK. According to Industry Canada's small business statistics reports, only 46% of small businesses survived for three years. This means that only 46% of the businesses made a profit. And those that didn't? Most of them LOST THE MONEY that was initially invested. Starting a business venture with any hope of turning a reasonable profit would require large amounts of start-up funds, which would be money that would not be available for other uses by EngSoc and may never be returned.

"EngSoc is an organization intended to cater to the needs of the student body at UW, and it was never intended to be a for profit venture. Exposing it to the risks and potential liabilities of running businesses goes completely against the better interests of the society and its members as a whole."

This is not to say that I don't believe that taking risks to start a business. Far from it. I do however believe that it is not the place of an undergraduate student society to take these sorts of risk with student funds.

EngSoc is an organization intended to cater to the needs of the student body at UW, and it was never intended to be a for profit venture. Exposing it to the risks and potential liabilities of running businesses goes completely against the better interests of the society and its members as a whole.

There is even the opportunity to question the need for funds from this type of source in general. In most recent years EngSoc has run a surplus in its operating budget. Typically every group that presents a reasonable proposal is granted funds. If EngSoc were being forced to tap into additional sources of revenue in the form of additional funds from students, it may be worth debate over seeking outside funding sources; however this is not the case at this time.

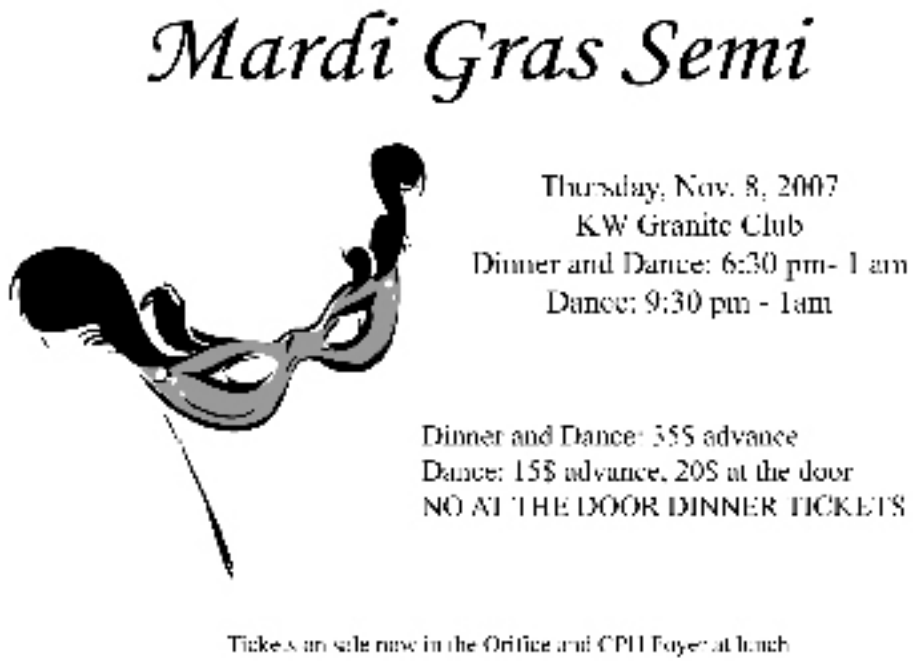
There is also the question of responsibility for the extra work that would be created by becoming involved in a business. The volunteers of EngSoc already put in massive amounts of work, and putting extra work on the already overloaded exec is something no-one desires.

Next we come to the potential issue of direction that may be created by shifting a large portion of EngSoc's efforts from serving students to raising funds. EngSoc has a high turnover rate, as does any student society, however this is further complicated by co-op and the nature of our dual A and B societies. This would present a large barrier to effectively running a successful business due to the desire of each successive set of EngSoc exec to do what is in the interests of the society at the time. Business is a long game, and not one that it is a good idea to put a group as variable as EngSoc in charge of. If steps were taken to lower the effects of this, it would not be acting in the best interests of the society and its members as a whole, as it would be trading our established and working system for one with less direct relationship to the student population solely in the interests of more funds.

In the end, it becomes a question of risk versus potential benefits. I personally am not convinced by any of the arguments that have been presented that the potential monetary benefits outway the large risks and possible consequences of EngSoc entering into larger business related endeavours. If EngSoc wishes to raise additional funds, it should seek to do so by providing services that are of direct benefit to the undergraduate students of the engineering faculty, along the lines of the current photocopying and binding services. One possible example of this is silk screening equipment with which the society could allow groups to produce custom t-shirts at lower rates than external businesses, while still raising additional funds for society uses.

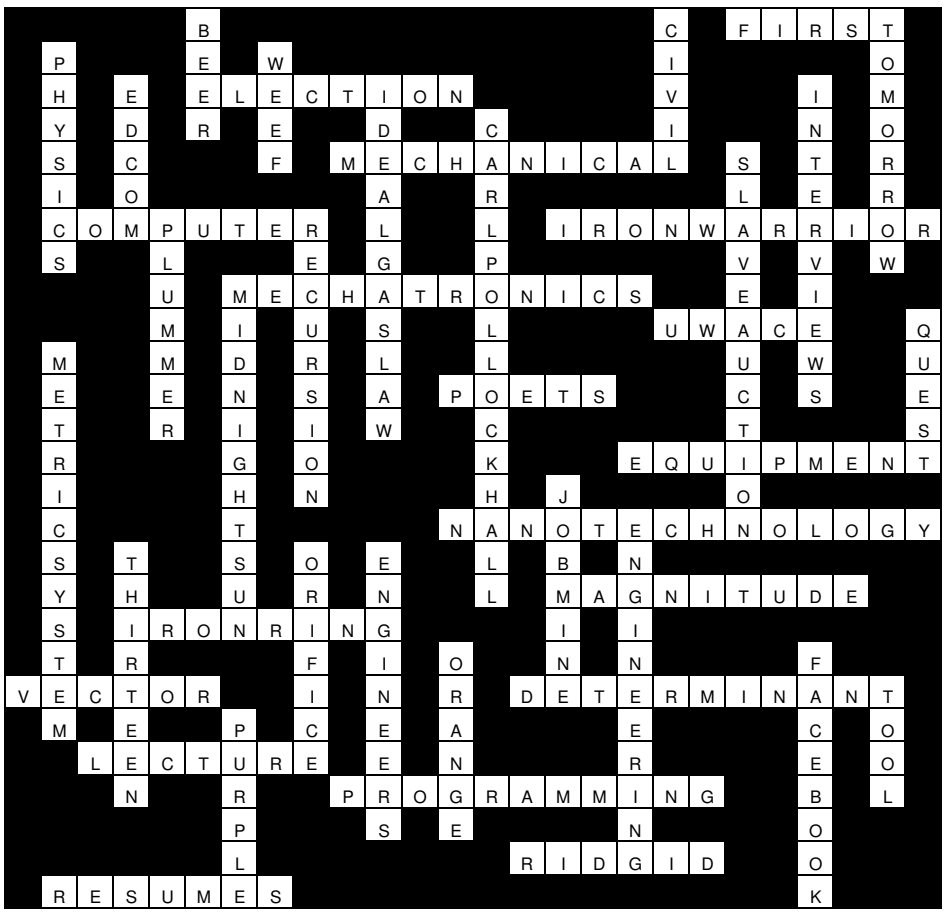
Editor's Note:

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



CROSSWORD

Last Issue's Solutions



(This issue's crossword is on page 16)

Sandford Fleming Foundation

Technical Speaker Competition Results

Winner of $500

Chris Togeretz of Civil Engineering

Runner-Up prize of $250

Farbod Nassiri of Mechanical Engineering

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Debates

The Sandford Fleming Debates will be held from 11:30 – 1:00 on October 29, 30, 31 in E2 Room 3324 with finals on November 2 at noon outside POETS in CPH. There is a prize of $300 for the two individuals on the winning team and the runner-up team will receive $250 each.

Refreshments will be served at the finals
Everyone is welcome

Funding for these awards comes from engineering student contributions and depends on them for continuation

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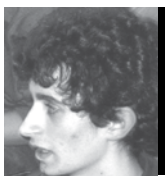
E2 3336, ext 84008, sff@engmail
www.eng.uwaterloo.ca/~sff

Midnight Sun Returns



DAWSON OVERTON
1A ELECTRICAL

It has been a couple weeks since our solar car team – the Midnight Sun – left for Australia to compete in the Panasonic World Solar Challenge. Since then, our brave Warriors have travelled over 3000 kilometres in a trek that has taken them across the entirety of Australia. The race brought them through a series of checkpoints, including (in order) Katherine, Dunmarra, Tennant Creek, Alice Springs, Cadney Homestead, Glendambo, Port Augusta, and finally, Adelaide.

Here's how the team's week went:

Day 1

On Sunday, October 23rd, the team got packed and was ready to hit the starting line at 4:30 AM. They drove their support vehicles to Parliament Square, downtown Darwin, with the Midnight Sun in tow. Because of their position in the qualifiers, the Midnight Sun had a grid position of 26th, allowing them to leave at 8:26 AM sharp. When the time came, they began the race and hightailed out of Darwin to the cheers of a very large crowd watching the race from the sidelines.

Overall they covered 400km in their first day – a pretty good distance. Team members agree that their less than ideal top speed was due to some minor problems with the solar panel array and body. Despite this, they ended the day in 18th place – the second Canadian Team!

Day 2

The second day began as early as the first. The team had to be up by around 5 AM to catch the early sunrise and charge the array. They left their temporary stopping place in the outback outside of Mataranka and continued on their way.

They covered about the same distance as in Day 1 – roughly 400 kilometres. There was, however, a big improvement on energy efficiency compared to the previous day's showing. They travelled the same distance on a mere fraction of the energy they used before.

Day 3

Another day, another 400 kilometres. Cloudy patches hindered their distance slightly, but it takes more than a little water vapour to shake up Waterloo students. The team originally planned to be at Alice Springs by the end of today, but they fell slightly short of their goal. Good news, though - the car ran even more efficiently today than yesterday, and tons of work was done on the car's body to improve aerodynamics. Hopes are high for catching up.

Day 4

The team's improvements paid off in spades. The car travelled a respectable 500 km today, and not only that, but efficiency was at an all time high. And this was all despite a flat tire and an electrical problem – without these drawbacks they probably could have covered an even greater distance. The team felt they were on schedule to reach Adelaide by Saturday at this point (and they were right). The night was spent at a parking bay on the highway – a well earned break from the insect-infested outback!

Day 5

Another fantastic day for the Midnight Sun. They covered another 500 kilometres, and the car's battery pack was still in good shape. Their good distance coverage was definitely helped by the weather – it was beautiful all day. There were, of course, other forces at work besides the weather – the car's driver manned the Midnight Sun exceptionally well (yes, even better than usual)! They ended the day at Coober Pedy (a mining town) and took the chance to prepare for leaving at dawn tomorrow.

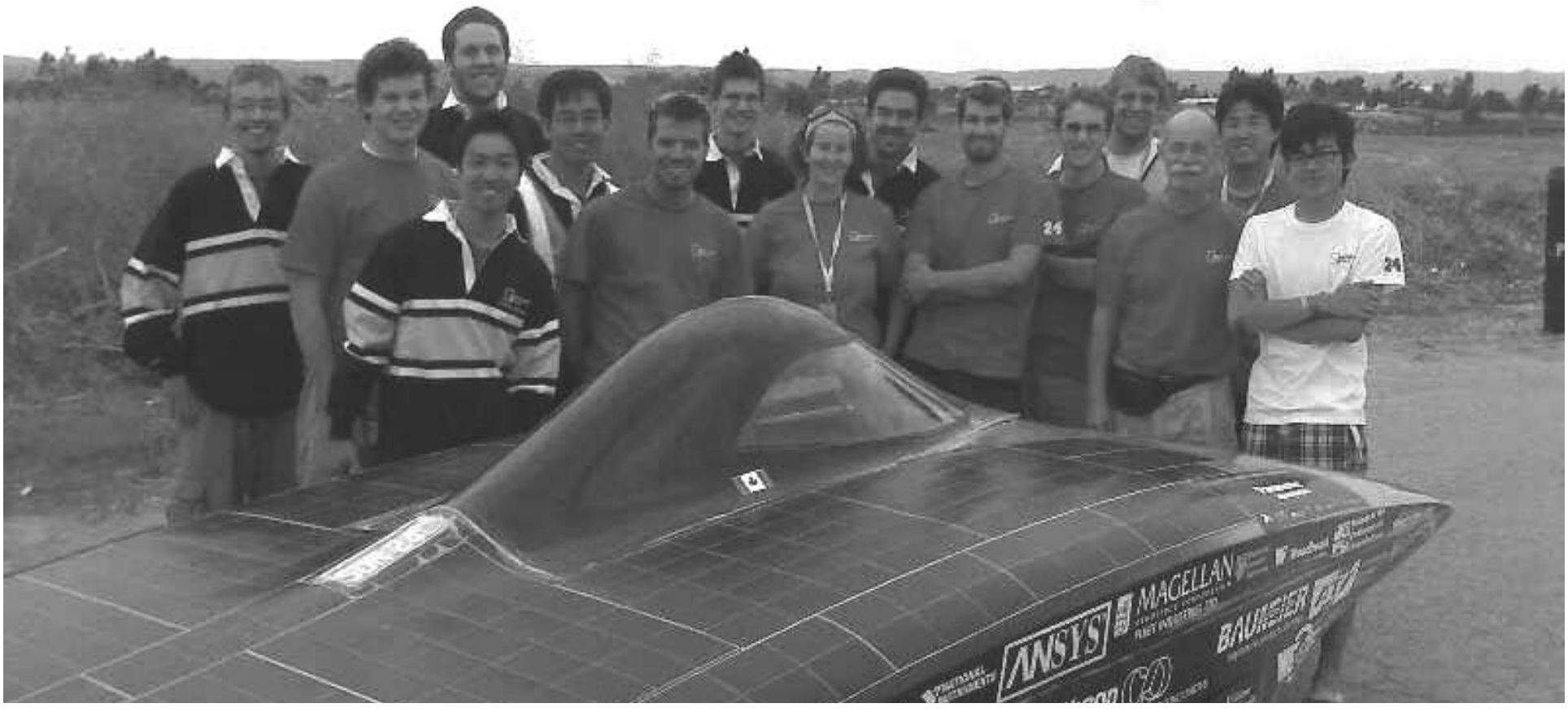
They planned to get to Port Augusta, the final checkpoint before Adelaide, by Day 6. At this point in the race, they were still 18th overall and 3rd or 4th in their class – not bad, by any measure, but they thirsted for a higher ranking (and thirsted in general – the Australian outback gets pretty hot).

Day 6

The Midnight Sun travelled a team best of 550 kilometres. They also reached their goal of making it to Port Augusta, meaning they were a relative stone's throw from Adelaide and the finale of the trek. There were again a few minor problems – one flat tire and an electrical problem – but this didn't even hinder their stride. The whole team was extremely excited about their progress, and I was told that the team was showing strong signs of being able to work together very well by this point in the race – a fact that will make them strong contenders for next year's North American race. Another plus: their rest stop had showers – apparently a WSC rarity!

Day 7

FINISH! Yes, at approximately half past noon, the Midnight Sun rolled into Adelaide into a crowd of people and media officials. It was a strong day; the car ran without any major problems and made good time.



When all was said and done, the Midnight Sun placed 2nd in their class, trailing only the Australian Aurora 101 car (which was a very good car as well). They were in the Production Class, meaning that the entire vehicle must be completely comprised of components which are commercially available to all competitors, and as such, the car was equipped with a more mainstream silicon cell array instead of the gallium arsenide cell array used in previous iterations of the car (the gallium arsenide cells are not commercially available; they aren't even intended for terrestrial use). This is in contrast to the Open class, in which there are no limitations on the technology which is used. This is a very respectable placing, and the team was happy with it. They did note, however, that they would have done slightly better if they started the race off with fewer problems, and hope to do even better for the next race (sounds like Waterloo spirit to me).

Not only did the Midnight Sun come in 2nd in the Production class, they came in 9th in the overall Challenge class (which encompasses both the Open and Production classes). In other words, Waterloo kept up with teams that didn't even have the same technical restrictions as them. Waterloo was also honoured with the Safety Awareness award.

The Midnight Sun clearly represented us well in a gruelling 3000 km race in which it is a tremendous feat to even finish. We should all be very proud of our Warriors – if you see any team members around campus in the coming weeks, be sure to give them a pat on the back and ask them about their experiences. And if you can't find them, just drop by the Midnight Sun workshop – they will already be preparing to blow the competition away for the North American Solar Competition in 2008!

Interview.php:

A chat with noted UW alumnus Rasmus Lerdorf (Systems '93), inventor of the PHP language

GABRIEL CHAN
4A SYSTEMS DESIGN

On October 24th, a UW Engineering alumnus came to campus for a visit. So what? However, this is not any ordinary graduate: since leaving Waterloo, his contributions have changed the world. Chances are that you have been influenced by his invention. Chances are that you have actually used his invention.

His name is Rasmus Lerdorf and his invention is the PHP scripting language.

From Footballer to Programmer

Rasmus Lerdorf was born in Greenland and grew up in Denmark. Handball was his favourite sport and past-time. It was unfortunate that he was not able to play handball after his immigration to Canada in 1980. Even though the Canadians did not know what handball was, they played football (soccer). Rasmus was a mediocre soccer player back at home, but it turned out that Canadians were really, really bad at soccer! Rasmus used soccer at first to help fit in to his new home.

Tragedy struck when Rasmus was trying out for the provincial team: his knee injury immobilized him for 6 weeks. During this time, a friend of his parents gave him a Timex Sinclair with a tiny membrane keyboard. The computers of this era, a circuit board with a keyboard, couldn't do much: you would turn them on and get a blinking prompt. The tiny memory limits how much you can code on it; even commercial software had to fit within 1 kilobyte of memory. There were only about 30 different commands, such as add, multiply, shifting things on screen and so forth; even a kid would work them out. And that was what young Rasmus did: it was like a super programmable calculator that can do anything that he wanted. Soon, he moved on to bigger and badder machines, like the Commodore 64. With positive influence from an engineer father and teacher mother, Rasmus had taken his first step in conquering the world.

Rasmus admitted that he never had a real job, but always tinkered around with computers until high school. There was a small software company that was located near his home and Rasmus got his first programming job during high school. The company made software for the computers at the school board of York Region (north of Toronto). The first project that he worked on was to help the machines talk to each other. Aside from this, Rasmus also created a bulletin-board system (BBS) for users to dial-in and send messages around

From Programmer to Waterloser

In 1988, Rasmus applied for Systems Design Engineering. Not knowing exactly what he wanted to do, but knew it would probably be some sort of engineering, it was also one of the harder programs to get into and Engineering Science at the University of Toronto was not as appealing. Systems Design also seemed more varied and broader with courses like ergonomics:

"Not that I'm not arrogant now, but I was very arrogant back then, and I figured that I don't need to take CS, I know that CS stuff, screw CS! Later on, writing PHP, I was like oh shit, maybe I should have taken some CS courses."

Rasmus admitted that the computer science in Systems Design was pretty much a joke, but on the other hand, he was not sure if he would have written PHP if he was a CS student, because he would have known how hard it was:

"You'd have to be an idiot to start a new language. Writing a scripting language is nuts! It's not a good idea; the world does not need another new language. It's bloody hard to make this thing stable, robust, scalable, security… and everything it takes to write a new language. It takes 20 years out of your life! There is no way in hell I would have done it if I had known how hard it was. And that is probably why there aren't a lot of languages written by CS types. Even though they are most capable, the folks with PhDs in CS would never do this. (They are too busy sending him flame about how much PHP sucks)."

This was Rasmus's first visit since his graduation

Rasmus keeps an emphasis on the big picture and Systems Design Engineering reinforces that concept, helping Rasmus develop a strategy of breaking big problems down into smaller manageable problems. But the most influential forces were good professors, such as Professor John Robinson (now faculty member at University of British Columbia), who did not only keep his work in academia, but went out into industry work, which resulted in a very effective and pragmatic teaching style.

"I am very pragmatic. If it works, fine. I don't give a shit about the code. I hate programming. I don't like to spend time perfecting an algorithm, just to make it beautiful and perfect. I get to the point where it works, its fast enough, its secure enough: done."

Rasmus also mentioned that he faced his first academic failure at the hands of Professor Savage, earning a stellar 42% in his electromagnetism course. Rasmus promptly rewrote the final exam in an ECE section two weeks later and got a 78%. Aside from this bad memory, Rasmus had always dreaded study term, which gave little free time for his personal projects. There was free time in high school, there was free time during workterms, but none at all during school term; so when it was finally over, "I don't have to go back there anymore".

From Waterloser to Inventor

Rasmus started PHP in 1994 or so, shortly after graduation. In his own words: "There is no chance that I could have done this in school." At the time, Rasmus was building many CGI programs in C and kept writing the same code repetitively. For example, the same code to parse form submissions, i.e. when you hit the HTML form, that is going to send across a URL-encoded blob of data that had to be read and decoded. The C code had to do a certain set of standard things and Perl was too resource heavy and inefficient; remember that there were relatively severe limitations to CPU power and web servers. The CGI programs were also on shared servers and there were various access problems; Rasmus wanted to see who visited his page, but that is not possible due to limited access to access logs from his ~rasmus homepage.

The solution was to add a tool at the bottom of the page that would write to the database on every request that hit the homepage: this was the CGI wrapper. This tool would figure out who it was, write the IP to the database, and also read the file requested from the database.

Birth of the Personal Home Page tools

After graduation, Rasmus worked for a company in Brazil. They eventually asked Rasmus to start up an office in Mountain View (California). After this, he worked back and forth in Brazil and the USA until the Mosaic web browser came out: this was when development on PHP really started in earnest.

By this time, Rasmus was an IT consultant, taking on various projects with different clients. As a person who had to solve IT problems everyday but hates programming, his objective was to not write so much code every time that a new web project is undertaken; if the problem was solved once, then why not make the problem more generic instead specific to just the current client? Armed with this strategy, Rasmus hopped from client to client, building up his arsenal of tools after each victory. Each problem was solved by modifying Rasmus's magical toolbox of C code with a very simple templating language to suit the nature of the problem. In time, the magic toolbox became PHP.

Rasmus was also using this tool on his own personal homepage. He had built his own counter sitting at the bottom of his page that was logging all the hits he had, indexing them by time and location of the visitor. It may not mean much now if you had a visitor from Japan looking at your page, but back then, when 12 [local] hits a day was considered high traffic, this was very cool. Other people who stumbled across Rasmus' page also thought it was cool. What if people could download his tools?

So Rasmus pitched his toolbox as the Personal HomePage tools, abbreviated to PHP tools. The toolbox featured advanced logging and reporting, data collection, and even a guestbook tool. Most importantly, PHP was well documented and had examples for how other people can modify it for their own use and to create new tools.

Rasmus was getting paid to solve problems, not to write a tool, so nobody owned his software. PHP was also driven by ego: "hey cool, people from the other side of the world are actually using my tool!" Initially, the users of the PHP tools would always come back to Rasmus complaining it was too hard and wanted the tool to do slightly different things. Naturally, Rasmus would point them in the direction of his documentation and the templating system. The users did not think the system can handle it. Rasmus then did it to show them it could be done. Some users were quick to take advantage of this free consulting service: "I bet you can't do this! You can't do that!" Eventually, PHP caught one and became used for more important things.

At this point, Rasmus got his job at the University of Toronto, where he had to build a dial-up managing system. And so, the add-on for dial-up servers' protocol management was included into PHP. Rasmus was now paid to expand on PHP and make it better for solving a lot more problems, so PHP really grew. PHP was still being distributed on his website, so people were sending him patches to improve this toolbox. The Internet was growing at breakneck pace and more people who had only HTML but no programming experience needed to do complicated things, such as sending SQL queries. With PHP, all they have to do is toss in a magical HTML tag that would talk to the database.

By 1998, PHP had become a group effort as Rasmus got tired of being the only guy behind it. He started to assign parts of the project to let other people so they can take control of different things. PHP became a global effort. Rasmus was content with being on the team that is developing PHP: "the fact that I started it is kind of irrelevant, because my code back then and what we have today is night and day. Many of the concepts are still in there, I think it was cool that I had some of my own influence, but there are a few other things that I think are just as cool." What kinds of cool things? How about the limit clause in MySQL, also invented by Rasmus Lerdorf. He thought the cursors method was too convoluted, so he developed this in MiniSQL, later to be picked up by MySQL.

As with most innovators, Rasmus lives on without regrets, but when asked what he would have done differently, he said it would have been case-sensitivity. But Rasmus points out that HTML was not case-sensitive back then either!

Consistency is also a problem, but PHP has been developed at different times by different people at different stages of development of the web for different func-

See RASMUS on Page 11

"You'd have to be an *idiot* to start a new language ... it takes 20 years out of your life!"

Auto21: Hydrogen Powered Conference at UW

HENRY BIAN
4A CHEMICAL

The first annual NRC-Auto21-Waterloo Fuel Cell Workshop was held on October 25, 2007. The workshop was the brainchild of Dr. Xianguo Li, a professor in the Mechanical and Mechatronics Engineering department. The purpose was to coordinate the research efforts of the three organizations.

Unfortunately, Michael Hamilton, a leading advocate of fuel cell research, could not attend the workshop. Hamilton collapsed and passed away the previous day at a talk in Ottawa. A moment of silence was held for him prior to the talk.

The workshop featured talks about different research areas in polymer electrolyte fuel cells (PEMFC) and solid oxide fuel cells (SOFC). Introductions were made by Dr. Amit Chakma, the Vice President Academic & Provost, Dr. Adel Sedra, Dean of Engineering here at the University of Waterloo, and Dr. David Ghosh, the Director of Science and Technology and the National Research Council Institute for Fuel Cell Innovation (IFCI).

The all day event started at the Davis Centre with a networking breakfast followed by a day's worth of talks by researchers from all three organizations. Different aspects of PEMFCs such as materials and characterization, modeling and simulation, and design, frabrication, testing and diagnostics were presented as well as research regarding SOFCs.

Talks were followed by a networking dinner at the University Club. During dinner, I had the opportunity to talk to Dr. Li and Dr. Ghosh about why they felt it was important to organize this event.

"This event has been 2 to 3 years in the making," says Dr. Li, "… We need to get to know each other so we can focus our research." Also, this partnership is beneficial to both the University of Waterloo and the National Research Council because "students [at the University of Waterloo] will have access to facilities at the [IFCI] and [IFCI] gets a breath of fresh air from our students."

"[IFCI] already has relations with the University of Waterloo," says Dr. Ghosh, "and to solve some of the budget issues, we can cooperate to leverage our resources… it'd be a natural fit."

The night was concluded with a video-conference with Singapore to further discuss fuel cell research.

Scan your Friend's Homework!

PLANon DocuPen R700 Portable Scanner

ANDRE LO
1A COMPUTER

A silver, long wand with some flashing LEDs. Does the Men in Black's Neuralyzer come to mind? Unfortunately, the gadget we're looking at here isn't quite as awesome as that, but it's pretty darned cool anyway. It's a PLANon DocuPen R700; a portable document scanner.

Measuring just over 20 centimeters long, the idea is that you can have a scanner with you at all times, temporary storing 50 to 100 pages of scanned documents in the scanner's memory until you upload it to a computer. Power for the scanner is supplied by a built-in rechargeable Li-ion battery, which is recharged every time the scanner is plugged into the computer. Unfortunately, the connection is made with a USB cable of proprietary design, which rules out the chance of replacing a lost cable with a standard "USB to mini-USB" cable. In addition, having to contend with another proprietary cable needlessly adds to the user's already large collection of all sorts of cables for their gadgetry. The build quality of the unit is also not that great; the all-plastic shell is thin and light. However, it still manages to be quite durable.

To scan a document, the user simply presses a button on the DocuPen until the LEDs light up and then slowly rolls the scanner over their documents. It's also possible to choose the scan resolution between 100dpi and 200 dpi, depending on how large you want each file to be. Each scan can be as large as an A4 sheet of paper. It's a bit tricky to use at first; it's possible to get your scans crooked, and you won't know until you view the scan on a computer. However, with some practice your scan will come out perfectly straight. The DocuPen can hold up to 100 scans before the 2MB of flash memory is full, after which the files will have to be uploaded.

Since scans are black and white only (not grayscale or color), the DocuPen can only be used for text, diagrams and tables. Photos and other images don't fare so well. However, it is perfect for copying pages out of library books and other sources of research. This includes your friend's homework! (not that I would recommend that sort of thing...) Scanned files can even be converted to text using software, which is an interesting but not terribly accurate feature.

The DocuPen is available online for $200, which is not cheap. However, the package comes with a "leather" case and a full copy of PaperPort 11, a great piece of scanning and document management software for Windows. Mac OSX users can also download drivers from the official website to use the DocuPen with a Mac, but they miss out on the PaperPort software. It's possible to justify the cost if you use it often, as this will both save paper and your photocopying cost. Of course, you can also justify the $200 by how cool you find the DocuPen R700, or just how badly you need to scan your friend's homework!

Give Students Time to Play

RASMUS
Continued from Page 10

tionalities. "People complain it's not consistent. Well oh yeah, neither is the English language. Neither is a bunch of things that have evolved over time." Even if a language can hypothetically be cooked up in a week with all rules being consistent, it does not make the language any more useful; people do not memorize how many arguments are in a certain function. That is what documentation is for. Thus, consistency is irrelevant.

Random Rasmus Ramble

Just before we let Rasmus go, there was one question that we would love to ask this UW Engineering graduate innovator: how could we foster innovation at an undergraduate level at UW Engineering?

Short answer: "give students more time to play!"

Rasmus had already mentioned how much he hated study term and there is an overwhelming probability that you absolutely agree with him. He blames it on the 35+ hours of classes per week and the accompanying assignments, quizzes, projects and midterms. Frankly, there is no time for innovation.

Rasmus thinks the UW Engineering workload needs to be scaled back and that there should be more free-style completely free-form projects. The students decide what the problem is, how to solve the problem, and build it. This sounded suspiciously like the typical SYDE-style design projects. While Rasmus acknowledges that Systems Design had the right idea going, it was not enough, playing too much emphasis on reports, progress, and processes where they should be more emphasis on hacking:

> *"There is no chance that I could have done this in school."*

"If I was going to write a report on how I was going to build PHP before I built it: no way [that is possible]. You get people together, late at night with a couple of beers, get some smart people in a room, after some time, something is going to come out. Systems [Design Engineering] is sort of like that: you cram together a bunch of smart people in the same room, same hallway, 1303 A or B or whatever it was… that hallway."

Another example that was given was the Yahoo! hack sessions, where a group of people take a section of time off (anywhere from 1 day to 1 week) to sit in a group and hack through a project (i.e. ad hoc problem solving). Rasmus hopes to see more of this sort of intellect incubation to breed innovation in UW Engineering.

The Iron Warrior would like to thank Rasmus Lerdorf for sitting down with us over dinner [plates] to talk about anything and everything, and Arnold Matthews for arranging initial contact.

DesignCampWaterloo: Let Your Design Thrive!

STEPHANIE FRISINA
DESIGNCAMPWATERLOO

November 8 is ramping up to be an exciting day on campus. The student-run group "DesignCampWaterloo" is launching the second ever open-forum, digital design showcase from 2 – 7pm in the SLC. This year's event, which is being hosted by World Usability Day 2007, has received serious hype in the Waterloo high-tech community, and features the Waterloo Institute for Health Informatics Research (WIHIR) as a Design Challenge presenter.

The DesignCamp team, supported by Microsoft, received acclaim from last May's successful event. With coverage spanning UW's Imprint to Microsoft's Canadian User Experience blog, this group has industry insiders talking. Past Design Challenge winners have walked away with prizes valued at over $100, including previously unreleased Microsoft Expression Web software. DesignCampWaterloo is credited with launching the websites of local designers into the spotlight of the University at large, and bringing fresh design talent to some of Waterloo's best companies.

DesignCampWaterloo gives presenters a forum to show off their innovative work, get feedback from a live audience, and connect with fellow designers. This event's impressive list of presenters includes: Michael Fagan, creator of the ride sharing network www.Zimride.com; Dan Murdoch of the student note collaboration tool www.picklejar.com; and Monish Ghandi, who will be demonstrating a new online communications and collaboration tool available through http://lilacfn.com.

Run by students and for students, the DesignCampWaterloo team brings to life innovative concepts taught in the Digital Arts Communication (DAC) specialization, administered by the Canadian Centre of Arts and Technology (CCAT). With creative ideas that steer away from traditional power-point lectures, the Design Camp team strives to engage not only arts students, but also their design-minded engineering counterparts, to get in touch with their inner creative side. DesignCampWaterloo is a great opportunity for students to meet potential employers and gives high-tech employers a window into UW's booming design community.

Born from the idea that creativity thrives when people get together and talk, DesignCampWaterloo's student founders Majid Mirza and Adeel Khamisa are the two figureheads who bring this innovative concept to the University of Waterloo campus. After successfully executing the first DesignCamp, Majid realized that this group had only scratched the surface. "The escalating support for DesignCampWaterloo within a few months of the last event showed us that there is genuine need for more within the K-W community," he says. Majid also credits the UW Faculty of Arts, director of DAC, Dave Goodwin, and Glen Stillar, director for CCAT, for supporting DesignCampWaterloo's extensive efforts on campus.

Borrowing from the BarCamp open-forum style which features intense discussions, demos, and interaction from participants, DesignCampWaterloo aims to be an informal and creative opportunity for student, professional and academic enthusiasts to gather, talk, and show off their work to like-minded design folks. DesignCamp has something for everyone.

DesignCampWaterloo is free and open to presenters and spectators alike. Interested students can register at the DesignCamp website or just show up to the event. Everyone is encouraged to drop by!

For more information on this event, visit www.designcampwaterloo.com.

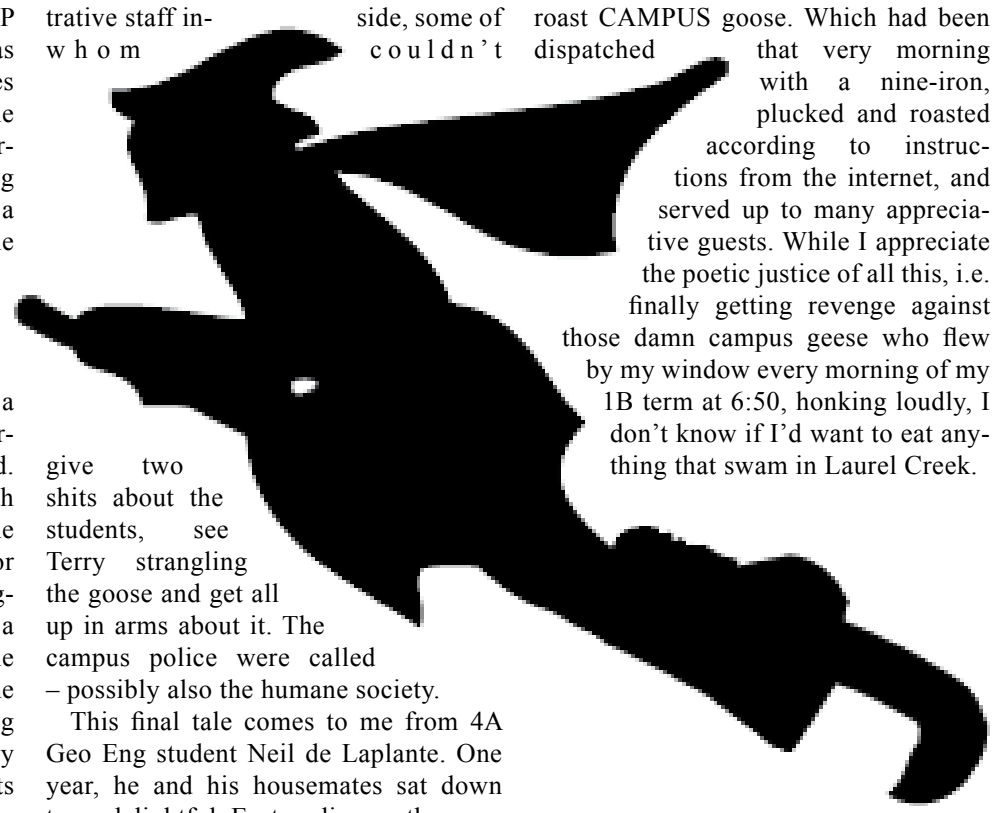
True Tales of UW Engineering

DAN ARNOTT
4A ENVIRONMENTAL

The story has been told (this happened years ago, possibly in the 1970s or 1980s) of a class of mechanical engineers who were displeased with the way June Lowe had marked one of their assignments. So one day, while she was still in her office, they snuck out to her car, removed all the spark plugs, and hid in some nearby bushes to watch the fun. When June came out to her car, she tried to start it a few times, without success. She then popped the hood, went into her trunk, produced all-new spark plugs and installed them, waved to the bushes where the students were hiding, and then drove away. However, like many stories of the time, this tale blurs the line between reality and legend.

Another, more recent tale, this one grounded firmly in reality: Back in maybe 2005, during the EngSoc elections, former Iron Warrior editor-in-chief John 'Milky' Olaveson was running for VP Internal. His main campaign slogan was something to the effect of 'Milk: It Does A Body Good'. To outline this point, he constructed an absolutely huge papier-mâché replica of his own head, raising a carton of milk to its lips, and taking a swig. This head was suspended from the POETS balcony. However, it did not remain there very long – overnight, the head disappeared without a trace. John subsequently lost the election. Nobody knows what the thieves wanted with a huge John Olaveson head, but I can guarantee you, it was probably nothing good.

The next two stories have to do with geese. One day, on their way to do some field work, Civil Engineering professor Bill Annable and technician Terry Ridgway are driving around Ring Road in a rented van. Some geese are crossing the road, and Terry hits one of them with the van (let's say accidentally). Not wanting to see an animal suffer needlessly, Terry stops the van, gets out, and wrings its neck. Of course, this all happens directly in front of "Needless Hell". The administrative staff inside, some of whom couldn't give two shits about the students, see Terry strangling the goose and get all up in arms about it. The campus police were called – possibly also the humane society.



This final tale comes to me from 4A Geo Eng student Neil de Laplante. One year, he and his housemates sat down to a delightful Easter dinner, the centrepiece of which was a roast goose. A roast CAMPUS goose. Which had been dispatched that very morning with a nine-iron, plucked and roasted according to instructions from the internet, and served up to many appreciative guests. While I appreciate the poetic justice of all this, i.e. finally getting revenge against those damn campus geese who flew by my window every morning of my 1B term at 6:50, honking loudly, I don't know if I'd want to eat anything that swam in Laurel Creek.

Trick–or–Trading

MEGAN CAMPBELL
SYSTEMS DESIGN '07

The other day a friend and I were talking about coffee. (We like coffee, it's one of the only things that got us through 4B). She told me that she thought fair trade coffee wasn't available in Canada yet; she thought it was only available in the States. I was pretty astounded – I've been talking about fair trade coffee for years and somehow I missed telling my friend she could get some in the C&D. I think her confusion is pretty common with most people– they know there's poverty overseas, they've heard something about fair trade products being a good thing, but that's about it. So what can be done to invoke a more encouraging response?

The answer is chocolate. Lots and lots of chocolate. Almost 10,000 pieces of it, to be exact. That's how many pieces EWB volunteers are going to hand out across Ontario tonight on Halloween for the 2nd annual 'Trick-or-Trade' event. That's right, just like RIM, this creatively titled event was the brainchild of a student right here at your university! Last year on Halloween night, traditionally dominated by ghosts and goblins, a bunch of crazy volunteers dressed up in creative development themed costumes – we had a Trade Barrier, Tied Aid, Bandaid solutions and, inexplicably, a Poverty Octopus go door to door telling KW residents how they could help make poverty history. Apart from a moment of panic when one of our Giant Bags of Fair Trade Coffee caught fire from a jack-o-lantern, the night was a huge success.

This year the event has spread across the province, with all Ontario EWB chapters hosting the event in their community. Together we're going to try to reach 10,000 households in 3 hours. We're hoping that a bite of fair trade chocolate and knowing where to buy more in Waterloo will introduce people to a simple way of making a difference in the lives of impoverished farmers throughout the year. If you would like to help hand out some chocolate rather than collect it (giving is always better than receiving, right?) before heading out to your Halloween party tonight, sign up at

http://uwaterloo.ewb.ca/wikis/index.php/Halloween_2007_Sign_Up . We will be 'Trick-or-Trading' from 6pm until 9pm latest. Happy Haunting!

Your Guide to Common Campus Carrion

STUART PEARSON
1A CIVIL

Driving along, you notice a heap at the side of the road. It looks like it has a stripy tail - could it be a raccoon? Further inspection reveals that the stripes are merely tire tracks. We can only hope that the poor...ex-possum has gone on to a better place.

The Waterloo campus is no stranger to these vehicular victims - quite recently I saw something furry spread out on Ring Road in a wholly unnatural manner. Although I've only lived here for about five weeks, I've seen raccoons, squirrels, ducks, geese, and plenty of skunks wandering about. Apparently there are also groundhogs everywhere, although I have yet to see them personally. Recognizing flattened fauna can be a challenging task, especially given the condition that the collisions tend to leave the animals in. Rather than get into the grisly details I think I'll just let you ponder it yourself...

It would be foolish to assume that campus wildlife has only cars and trucks to fear. Only just this morning I was witness to a near collision between a squirrel and a cyclist who was flying downhill on their way to class. The bike almost bowled into me, and narrowly avoided the squirrel by mere inches. Fortunately, the little guy survived, but I'm sure it hasn't been the first such bicycle-rodent incident around here.

Several weeks ago, a professional cycling race in Missouri came to a halt when one of the participants had a collision with an armadillo. The crash took out two other riders, and a racer commented that, "Had they not been hurt, it would have been pretty funny."

The Illinois Department of Transportation is currently under investigation after an incident involving a road maintenance crew painting lines down the centre of a highway. It seems that in a fit of unspeakable laziness, the team chose to paint right over a pancaked raccoon rather than move it out of the way. That being said, I certainly wouldn't have wanted to touch it.

As a general rule, stay away from roadkill because it's pretty freaking disgusting. On the plus side, according to Health Services here at UW, a Suburu-squashed skunk in the middle of the road poses absolutely no threat of rabies. In fact, on their website, they specifically ask you not to report roadkill using REALLY BIG LETTERS. Rabies has been almost completely eradicated in North America, so it makes you wonder if we can't finish it off once and for all by driving a little more recklessly next time we're out on the road.

Credit: http://users.bentonrea.com/~sasquatch/bananajack

"Ross always nose the right answer... He's got a good point, really."

Last Issue's Winner

Congratulations to Amanda Hoff of 3B Mechanical, who submitted the winning caption for last issue's photo, seen above. Amanda was the happy recipient of a $10 prize.

Runners-up included:

"Last time I had this many cones in my face I woke up with pink-eye and a stiff neck." from Nick Dyment, 4A Systems Design

"No longer content to just wear a tinfoil hat on his head to protect from mind control rays, a student demonstrates his new multipoint mindray protection system", from Jon Grieman, 1A Computer

(see this issue's photo on page 16)

Business

Networking: The Glue of Business

Entrepreneurship Column

DMITRI ARTAMONOV
3N COMPUTER

If there is one thing that I want to impress upon you this semester through this series of articles on entrepreneurship, it would be to network, network and network some more. It doesn't matter whether you want to start your own company or to find a dream job in an existing one, the key is to build relationships with people who know where you want to go and will help you to get there. You'll be surprised how easy it can be, you just have to ask.

If you go to only one networking event in your entire life, let it be Dave Howlett's "Knocking Down Silos". Every fall for the last 3 years Dave has come to UW to spread his wisdom on how to connect with people and make the world a better place.

A silo is your network of people. In order to find the people who can help you succeed and in return find people whom you can help to succeed you will need to break your current silo and expand your network. The most effective way to network is not only to approach strangers, but become valuable to your existing network so people will come to you.

The way to do that, according to Dave, is to become a "good guy". Think of this: what do people think of you when you are not around them? You might be surprised as to how different this is from what you would LIKE people to think of you when you are not around. In marketing-speak changing your ways so that the adjectives that people associate with you are the ones you want (trustworthy, reliable, innovative) and not the ones you don't (arrogant, deceiving, cheating).

There are four major components to being a good guy/gal. First, there is Knowledge, Experience and Skill. I certainly hope that your commitment as a future engineer to these three traits is serious, otherwise I refuse to cross any more bridges! The second component of a "good guy" is personality. Greet people with more of "How was your weekend?" and not "Yo, b!tch!"; in MBA-speak the latter tends to erode your personal brand. The third component is reliability - the science of delivering as promised. In the business world you simply must stay true to your word. In my last article I talked about hunters in the modern corporation - the salesmen who remain in the company even though they are arrogant, because they always bring a bear back to the cave. Even though they are not "good guys" , they bring the bear every time and deliver on their promises, though they may be delivered in a rude manner.

As your network expands and warms up to you, remember to ask clear questions in order to get clear answers. If you tell me that you want to be involved with information technology infrastructure in the oil industry, I'll nod and change the subject. If you ask me if I know anyone at Shell, I can help you. Be specific, it is easier for people to connect you with specific people in specific companies doing specific things rather than generic labels.

The final element of being a "good guy" is to give back, to help people and to learn to like to help people. Go beyond reciprocation and help your network the same and more as it has helped you. When asking clear questions on how someone may help you, don't forget to ask a simple question that is clear to them: "What can I do for YOU?". All you have in this life, and all that will remain after you leave this world is your reputation and what you have given back.

If you missed the "Knocking Down Silos" talk in Waterloo, Dave Howlett will be giving another "Knocking Down Silos" presentation at the University of Guelph on November 7th. Since we at New Venture Pathways are such swell guys, the first 4 people to email me at the address below can get a free ride to and from the U of G on the night of the KDS talk.

I'd like to get some feedback from my readers on my articles, so don't be shy and email me. If I could do one thing better in writing these entrepreneurship articles, what could it be?

As always, if you have anything to say about entrepreneurship, New Venture Pathways or my articles in general, feel free to email me at dmitri@newventurepathways.org.

Until next time!

What to do with $150 and $11.20 on Wall Street

Investing Column

JEFFREY MCLARTY
4A MECHATRONICS

Without a doubt, most people are afraid of the stock market because they are afraid of a loss, or afraid they don't have the time, or the biggest reason I hear "I don't have enough cash". I'm going to tell you, more things go up than down, you can devote 12 hours per year or 12 hours per day, and it doesn't take as much cash to start as you think.

You are probably asking yourself "How much am I going to make with $150"? Let's pretend for an instant you have used your highly trained analytical mind to figure out which stock is going up. Let's say you think it's going to go up 10%. Well, you're right, buying $150 worth of stock will make you $15, which isn't worth your time. Allow me to introduce an option contract. An option contract allows the owner to buy or sell a stock, at a later point in time, at a certain price. It is literally a vessel for converting time & volatility into cash and vice versa.

Allow me to back up and elaborate with an example. Let's say the stock you think is going up by 10% is our favorite Blackberry maker RIM. To avoid confusion let's say RIM is trading at $100 per share and you expect it to increase by 10% in a month.

Using our time machine we flash forward 4 weeks. You were right, RIM is even higher at $115. If only you could go back in time knowing what you know now. You would be 15% richer. Oh wait, we got here in a time machine, let's go back.

4 weeks earlier...

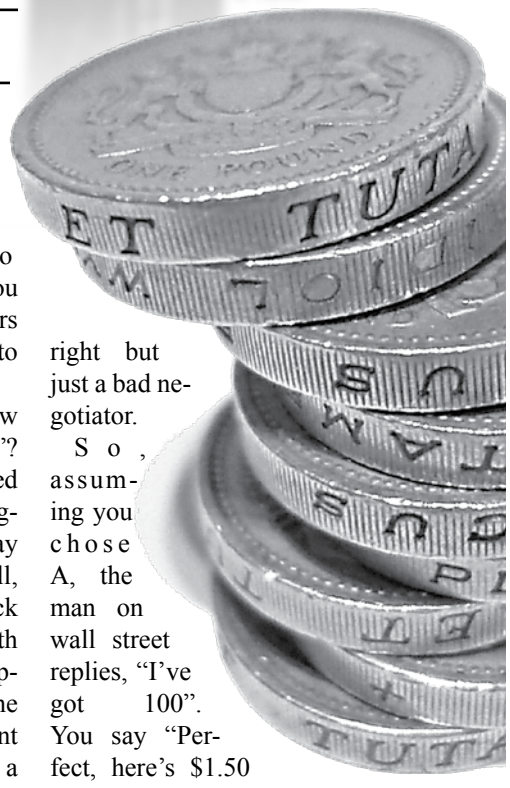
RIM's at $100, and you're about to buy one share of RIM. Before you do, a guy on wall street comes up to you and says "I'll give you the option to buy RIM in 4 weeks from me at $105, what's it worth to you?" What do you say?

A) "$1.50 per share, how many do you have?"

B) "I don't have time for this, I have calculus to do, besides I don't have any money."

C) "I'd pay up to $10 for that, I've seen the future ($115 - $105 = $10)

The correct answer, if all of the above were true would be A. If you chose C you're



right but just a bad negotiator.

So, assuming you chose A, the man on wall street replies, "I've got 100". You say "Perfect, here's $1.50 x $100 = $150". Time ticks by, RIM goes to $115. Your investment of $150 is now worth $1000. Oh the $11.20, those are the fees to make the $1000 - $150 = $850 in profit.

While this example offers a caricatured look into the basics of trading options, (and of course it would be easier if you had a time machine) it illustrates the mechanics behind an option contract. Formally, there is a lot more to learn. Luckily you are likely a soon-to-be engineer going to Waterloo, greek letters don't scare you anymore and numbers are your best friend. There is math that can be used to decide if $1.50 was a good deal or not. There are balance sheets and income statements behind every stock to help you evaluate their worth. Industry trends and analysts as well as online communities and research papers can all give indicators to guide you, while more math can be applied in the form of technical analysis. Options trading isn't for everyone, but it may be for you.

If you want to learn more, I'm offering 4 free seminars from basic stock picking to advanced option strategies. Go to http://blog.bluemoat.com, click seminars to sign up online. You can check out the next *The Iron Warrior* for: "How to rent a stock".

Pranksters Bluntly Ask the Right Questions

FARAZ SYED
4A CHEMICAL

The nanotechnology building might have to be a bit smaller than planned. The latest gardening project of a few mischievous engineering students is set to compete for space with the new centre.

As if to protest the vanishing green space on campus, the group gave a final send-off to the field by planting a few saplings and other flora in its centre. It is unclear whether or not this qualifies as "artistic expression": these were engineering students after all. Whatever the case, their timing was impeccable; the prank was performed in time for a farewell party for the field organized by the Science Society.

Early Friday morning, The Iron Warrior received an anonymous tip urging it to dispatch reporters:

From: Your Worst Nightmare
Subject: Faraz: You did not get this email
Time: Oct 26, 2007 4:14 AM

We are making you aware of a present we have left on the B2 Green earlier tonight.

Nano may have a building, but we have a forest.

Bring a camera.

You may want to go immediately.

The pranksters identified themselves as the Non-Existent Action Committee (NEAC). NEAC has long been a tradition among the engineering students, who have used its banner to ensure their pranks are attributed to engineering students. The NEAC markings were also seen earlier this year, when the orange art piece by the Douglas Wright Engineering building was painted over in the dark tones of EdCom.

The field is here to stay for the time being. Actual groundbreaking will happen in March of 2008, when it will be replaced by a 10 metre hole in the ground. However, preparations for construction have already begun. The Bombshelter patio will be dug up to extend service tunnels from the Student Life Centre. Aside from the tunnel extension, other preparatory work will include rerouting underground pipes and taking soil samples.

Editor's Note: The plants have been pulled out of the group by the time of issue production.

This NEAC image is displayed in one of the window displays outside P.O.E.T.S. in CPH.

Can we afford to lose green space on campus?

The display is humble but wonders if we are rushing by the important things in life.

Great Opportunities to be had in Continuous Phase

SHAWN WASSERMAN, DAN ARNOTT AND JON GRIEMAN
THE IRON WARRIOR: SPECIAL JOBMINE CORRESPONDENTS

Back by popular demand! Last issue, we presented jobs on jobmine that make you think in horror "who would ever take this job? This is the worst job I have ever heard of!" This week, as you enter continuous phase, we suggest that you should look at these positions not as terrible job postings, but instead as great opportunities! Here's to finding that neglected 'diamond in the rough' when desperately searching for co-op employment on Jobmine!

** Disclaimer: This article is a light hearted parody of the JobMine process and does not contain a single fact.*

Job Title: Avian Protein Acquisition Technician
Organization: O-Keh Farms Inc.
Qualifications:
• First- or second-year Engineering
• Quick on yer feet
• Strong grip
• Not averse to a few barnyard odours
Job Description:
When it's time for them chickens to go into the roasting pot, sometimes they don't wanna go. After their heads have been cut off, they take to runnin' around. Now we at O-Keh farms reckon that you can't eat no chicken what ain't been caught first.
Duties will include chasing, catching, cleaning and plucking headless chicken carcasses. Note that the successful applicant will not actually get to eat said chicken, and may be paid exclusively in eggs.

Job Title: Schist Kicker
Organization: Hardrock-Earthcore Aggregates Inc
Qualifications:
• First- or second-year Geological Engineering
• Must have own work boots
Job Description:
Due to the recent downturn of the mining industry, Hardrock-Earthcore has been forced to sell most of its heavy equipment. In order to extract aggregate resources from our quarry sites, we are now relying exclusively on human labour. The entry-level position of Schist Kicker allows the successful candidate a strong start on the 'ground floor' of the construction industry! Duties will include the crushing of rocks into aggregate using mainly manual methods, hence the need for work boots. Hauling of crushed rocks up steep slopes as required. If the candidate shows initiative, he or she may be promoted to a position where a pickaxe or sledgehammer is provided.

Job Title: Biological Survey Technician
Organization: Soggy Valley Conservation Authority
Qualifications:
• First- or second-year environmental engineering
• Skilled in the use of a ruler or measuring tape
Job Description:
The Soggy Valley Conservation Authority is currently conducting high-profile biological research in the Mosquitoskunk Bog near Soggy Valley, Ontario. The successful applicant will be working independently as a biological survey technician on the 'Bog Grasses' section of the project. Duties will include full-time placement in the bog, as well as routine observation and measurement of grass growth. The successful applicant will become well acquainted with the two chief species for which the bog is named, as well as the large amounts of precipitation which seem to be localized in the area. Consumption or other utilization of any 'special' plant species detected in the bog is permitted and encouraged.

Upcoming Events Calendar

Monday October 29 IW Meeting (5:30-6:30 POETS)	**Tuesday October 30** Pumpkin carving workshop (11:30-12:30 CPH Foyer)	**Wednesday October 31** GradComm Pizza Hallowe'en lunch activities (11:30-12:30 CPH Foyer) Class rep workshops (5:00) & Engsoc Meeting (5:30) at CPH 3385	**Thursday November 1**	**Friday November 2** ***Pictures with the TOOL (Lunchtime) CPH Foyer*** Pancake Breakfast (8:00) in CPH Foyer Open Mic (11:30-1:30)	**Saturday November 3**	**Sunday November 4** MOT (9:00pm)
Monday November 5 IW Meeting (5:30-6:30 POETS)	**Tuesday November 6** DarkRoom tour (11:30-12:30) Poker Tournament (2010 Year Spirit) Resume critiques (4:30)	**Wednesday November 7** GradComm Pizza Enginuity lightbulb (5:30) in CPH Foyer Resume critiques (4:30)	**Thursday November 8** Semi-Formal (6:00pm) Resume critiques (4:30)	**Friday November 9** Bandwars	**Saturday November 10**	**Sunday November 11** Remembrance Day
Monday November 12 IW Meeting (5:30-6:30 POETS)	**Tuesday November 13** Knitting workshop (11:30-12:30 CPH Foyer)	**Wednesday November 14** GradComm Pizza Class rep workshops (5:00) & Engsoc Meeting (5:30) at CPH 3385	**Thursday November 15**	**Friday November 16** Pancake Breakfast (8:00 CPH Foyer) SCUNT (12:00)	**Saturday November 17**	**Sunday November 18**

ENGINEERING UNIVERSITY OF WATERLOO

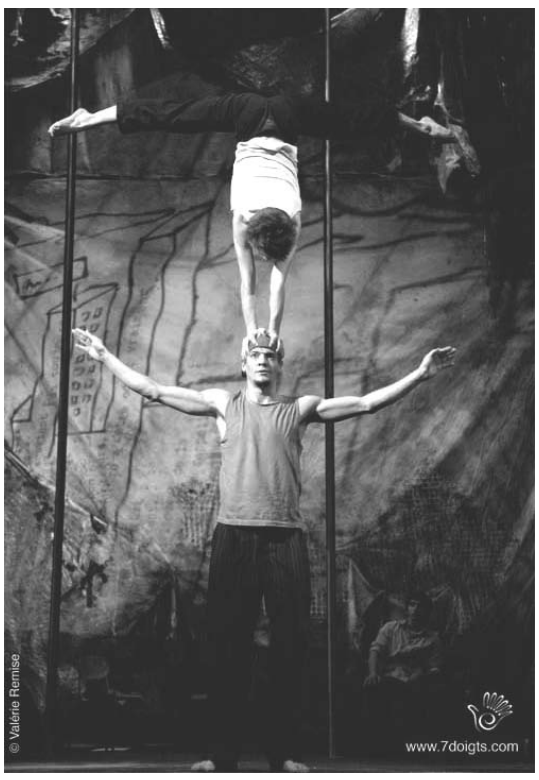
Check out up-to-the-day event postings on the EngSoc website at engsoc.uwaterloo.ca

Traces: Parkour Meets Cirque de Soleil

Theatre Review

ERIC MIGICOVSKY
THEATRE CORRESPONDENT

Ever wanted to see people jump through hoops for no apparent reason whatsoever, solely for the purpose of your entertainment? Well, I had the privilege of witnessing such an event at last week's premiere showing of the brand new acrobatic spectacle Traces at the Panasonic Theatre in Toronto. It's the perfect chance to enjoy an evening of intense physical exertion while sitting comfortably, 30 feet from the excitement.



Credit: www.7doigts.com

If you've ever heard of parkour, you'll have an idea of what I mean when I describe this show as a mix of urban acrobatics, outrageous physical stunts and well choreographed dance scenes. The 5 university-aged performers make it plainly clear that they are very proficient at what they do: crazy backflips, breakdance moves while balancing one-handed on someone's head and some extreme, semi-violent piano pieces.

Developed a few years ago in Montreal by several Cirque de Soleil graduates, Traces has been traveling around the world, pleasing audiences of all ages. The show has a bit of something for everyone: I noticed a whole bunch of teenagers enjoying the intense skateboarding scene where the performers zip and zag across the stage. I, personally, appreciated the human gyroscope sketch, where one guy grabbed a large (7' diameter) steel ring and proceeded to suspend himself within the ring while spinning and twirling!

The show culminates with an exciting ring-diving affair similar to a limbo contest, except replace 'La Bamba' with some urban hip-hop and a broom handle with multiple hoops set atop each other with people diving simultaneously through them. The audience got very drawn into this act, and cheered mightily when the final running high dive was accomplished.

Rarely does one have the chance to see 5 people performing these extraordinary moves with such an air of casual synchronicity. I suggest you take advantage of the opportunity and indulge yourself. The show is running until November 18, with student ticket prices starting at $35!

Credit: www.7doigts.com

Mounting Sex in the Afternoon Zone

MARISSA BALE
2A NANOTECHNOLOGY

How much do you know about theatre superstitions? Did you know that you should use "break a leg" instead of "good luck"? Or that it's a curse to say "Macbeth" in a theatre unless you're reading from the script, even if it's the play being performed? Though they might sound silly, these superstitions are all too real for the characters of this term's EngPlay.

Caroline Russell-King's *Mounting Sex in the Afternoon Zone* is a comedy about love, theatre, and air raids. It centers itself around the members of a small-scale professional show: Matt Friesen (the writer/director), Sam Bennett (the stage manager), Claire Goodman (an actress), David Stoffel (an actor), Valerie Walker (an actress), and Max Augustus (a theatre critic). Rehearsals appear to be going well until one of the leads quits the show, forcing Matt to rehire. A chain of events follows that push Matt's poor little show into realms rarely seen on stage.

Will their show be a roaring success? Or will it be the flop of the century? To find out, you'll just have to come to one of the performances! The shows are Friday, November 16th (evening performance) and Saturday, November 17th (matinee and evening performances) in AL 113. Tickets are $6, and will go on sale November 5th in the Orifice, or from the cast or crew members.

Expose Yourself

JAREK PIORKOWSKI
DARKROOM DIRECTOR

Do you still have a good film camera? Don't have the heart to get rid of your SLR? Do you wish for more control over how your prints come out?

Look no further - the Engineering Society maintains a darkroom just for you.

The darkroom, tucked away on the second floor of RCH, in RCH 225 to be exact, is kept stocked with all the chemicals you will need and is fully equipped for both black and white and colour development. In particular, we have just received a donated professional-grade enlarger that will replace one of the two presently in use.

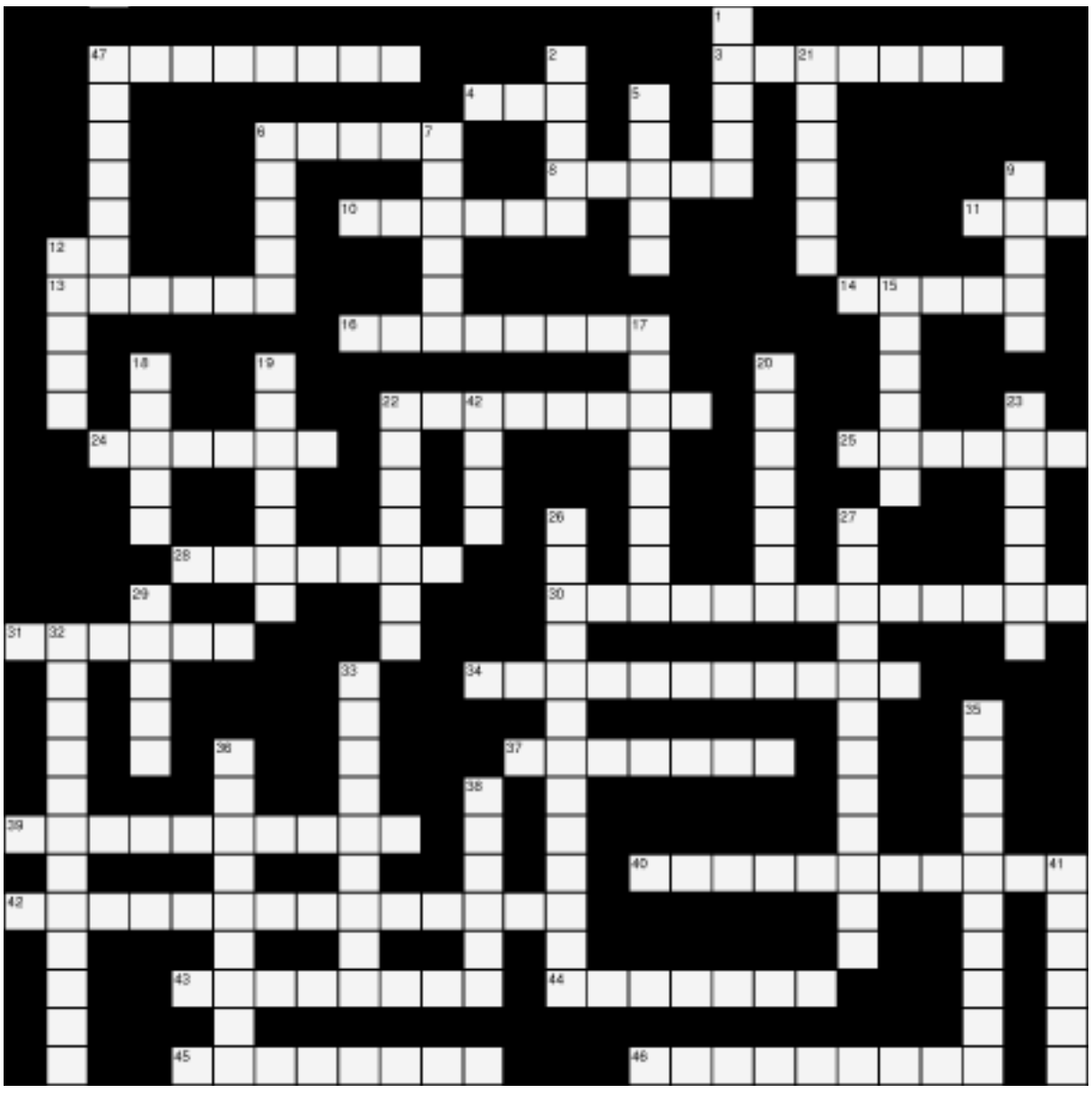
All engineering students are entitled to use the darkroom. In order to gain access, you become a "darkroom member" by paying a $15 membership fee in the Orifice. You can then sign out the key to the darkroom from Orifice (a deposit is required). The fee allows you the use of darkroom equipment and chemicals for the term. Normally, you are required to provide your own paper for the prints, either black and white or colour as desired. However, there is presently black and white paper available for use by darkroom members while supplies last.

If all of this sounds slightly overwhelming, don't worry. This term, the darkroom has scheduled open hours on Wednesdays between 3:30 and 5:30 pm (except during midterms and finals). Drop by and I can answer your questions and show you the equipment. If you cannot make it during these hours, or if you have any questions or concerns, email me at jpiorkow@engmail and I will try to arrange something.

POETS MOVIE SCHEDULE

SHOWINGS BEGIN AT NOON

		Wednesday October 31 Evil Dead 1 Evil Dead 2 Army of Darkness	**Thursday November 1** Child's Play Bride of Chucky Seed of Chucky	**Friday November 2** Gingersnaps Event Horizon Halloween
Monday November 5 Rocky 4 Rocky 5 Rocky Balboa	**Tuesday November 6** Nightmare Before Xmas Corpse Bride Edward ScissorHands	**Wednesday November 7** Pride and Predjudice The Mini Series BBC Version	**Thursday November 8** Wayne's World Mars Attacks Pulp Fiction	**Friday November 9** Who Framed Roger Rabbit? Dick Tracy Teenage Mutant Ninja Turtles
Monday November 12 Hook Toys Happy Feet	**Tuesday November 13** Blazing Saddles History of the World Part 1 Young Frankenstein	**Wednesday November 14** Ghostbusters 1 Ghostbusters 2 Evolution	**Thursday November 15** The Big Lebowski Bon Cop Bad Cop Hot Fuzz	**Friday November 16** Beerfest Super Troopers Reno 911! Miami



CROSSWORD

CHERRY HO
1A ELECTRICAL

Across
3 what spiders weave
4 nocturnal animal with large, round eyes
6 what you get after a terrible cut or wound
8 sugar; yummy stuff
10 sudden high-pitch noise
11 nocturnal animal; a mammal
13 another Halloween colour
14 no skin, no bones, translucent
16 you can carve it, eat it, make a scary face with it.
22 used to hold together huge gashes
24 box used to hold corpses
25 grotesque sprit or elf that is mischievous or malicious toward people
28 one of the 12 months of the year
30 fruit with a yummy sweet coating
31 Goblins and ____ ; evil demon
34 what witches ride on
37 Mmm… blood.
39 Furry beasts (no, not Hasselhoff!)
40 masked people with an important job
42 The official newspaper of the Faculty of Engineering
43 used to brew potions
44 Dark, squiggly shapes that follow you where ever there's light
45 where dead people lie
46 don't want this crossing your path
47 University of _____

Down
1 frightening
2 dark colour, goes well with orange
5 what skeletons are made of
6 Viscous liquid, usually green
7 what you do when you□re scared
9 what engineers do best
12 used to describe slime
15 sort of rhymes with terror
17 no skin, all bones
18 red,drippy,
19 Another word for 'ghosts'
20 What people wear when trick-or-treating
21 Scary monsters
22 eight legs
23 rides broomsticks
26 pumpkins, after taking out the insides and cutting it up a little
27 green, has stitches
29 what you can find in a pyramid
32 creepy building
33 another word for cemetery
35 pretty patterns made from fine silk
36 made from cocoa beans
38 bubbly liquid (usually poisonous/ toxic chemical)
41 word often associated with ghosts, goblins, Halloween.
42 The ____ Warrior
47 The Waterloo _____s

profQuotes

"These midterms are like one night stands. Once you write them, just forget about them." - R. Gunawan, SYDE 111 (while helping the class deal with the stress of calculus midterms)

"You know what they say, students used to complain a lot about work term reports and they wanted to reduce the number of complaints... it's called PDEng."
- D. Miller, ECE 484

Student: 'Why do you make [the PHYS 115 midterm] so hard?"
Response: "To put the fear of God in you."
- F. Mansour, PHYS 115

"You see these videos in black and white, but what people don't realize is that at that point the world really was black and white." - S. Wood, MUSIC 140

"So this brings me to another one of my jokes. I spent 6 months abroad in Australia ... not as a broad, but abroad."
- D. Miller, ECE 484

"So I saw my name in profQuotes ... could've been worse."
- D. Henneke, CHE 44

"Are there elves in the room? Can anyone else hear that or is that just me?"
- S. Wood, MUSIC 140

Send your submissions for this issue's photo (above) to iwarrior@engmail.uwaterloo.ca.

The best submission will be printed in the next issue and the winner will be awarded with a cash prize!

The Iron Inquisition

we ask. you answer.

"Recall your most embarrassing interview moment ..."

Ryda Peung and Sophia Follick, 4A Chemical

Jimmy Lin
3B Chemical

"Uh… I'm drawing a blank... kinda like in all my interviews…"

Min Kwan Kim
2A Chemical

Interviewer: "What do you know about our company?"
Me: "Umm... I've got nothing..."

John Martens
1A Mechanical

"Worst interview fear: slipping and falling flat on my face"

Cara Kennedy
2A Civil

"When I had to stop and think about what program I was in..."

Phecda Louie
1A Systems

"I farted!"