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THE IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY

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Are You Afraid of the Dark?

**ELIZABETH FORAN
& CHRISTINA SHUM**
SUPERHUGES

Hello frosh, and welcome to All Hallow's Week, where goblins, monsters, and the undead come out to play!

By now, you've hopefully received several e-mails and looked at our website to learn a little bit more about the University of Waterloo's Engineering Orientation Week. We hope you're just as pumped about the week as we are and that you've come prepared to have one of the greatest weeks of your life!

If you're reading this, you've probably received your frosh kit. Feel free to take a look through it! It has some really sweet swag that will give you a taste of what to expect this week, along with some very helpful information.

Tuesday is when the fun really begins! Remember to wear your frosh shirt as well as pants or shorts that you don't mind getting wet! You'll start the day by finding your colour group's headquarters (just follow the coloured string). Here, you'll be greeted by some of your leaders, the Bigs and Huges. We encourage you to talk to them as much as possible because they can give you a wealth of information; they have all been in your shoes before. Their job is to answer any of the questions you may have about Engineering or the week in general. It was not too long ago that they were frosh, so they know how you feel! You might get a little overwhelmed with the number of new faces you meet, but don't worry! You're all in the same position, so go and introduce yourself to someone as

there's an 8.33% chance that they're in your class — and some of them may well become your best friends.

H'okay, so once you're in your headquarters, you might be a little scared, excited, or both! Now what, you ask? Tuesday is packed with activities such as meeting the Dean and the infamous Education Committee. You'll also be Earning Your Hardhat with your fellow frosh and Bigs. Your hard hat is your protection against the foes of Engineering and is a

well-established tradition that ties together all of the great Waterloo Engineers before you. You must do everything in your power to protect this hard hat and all that it represents. Once you have Earned Your Hardhat, you'll come together in a show of Engineering unity as you pose for an Aerial Photo.

On Thursday, grab the Multi-Tool in your frosh kit and your freshly earned hard hat as you'll put them to good use at Junkyard Wars! You'll have the opportunity to prove your ENGINuity using only items

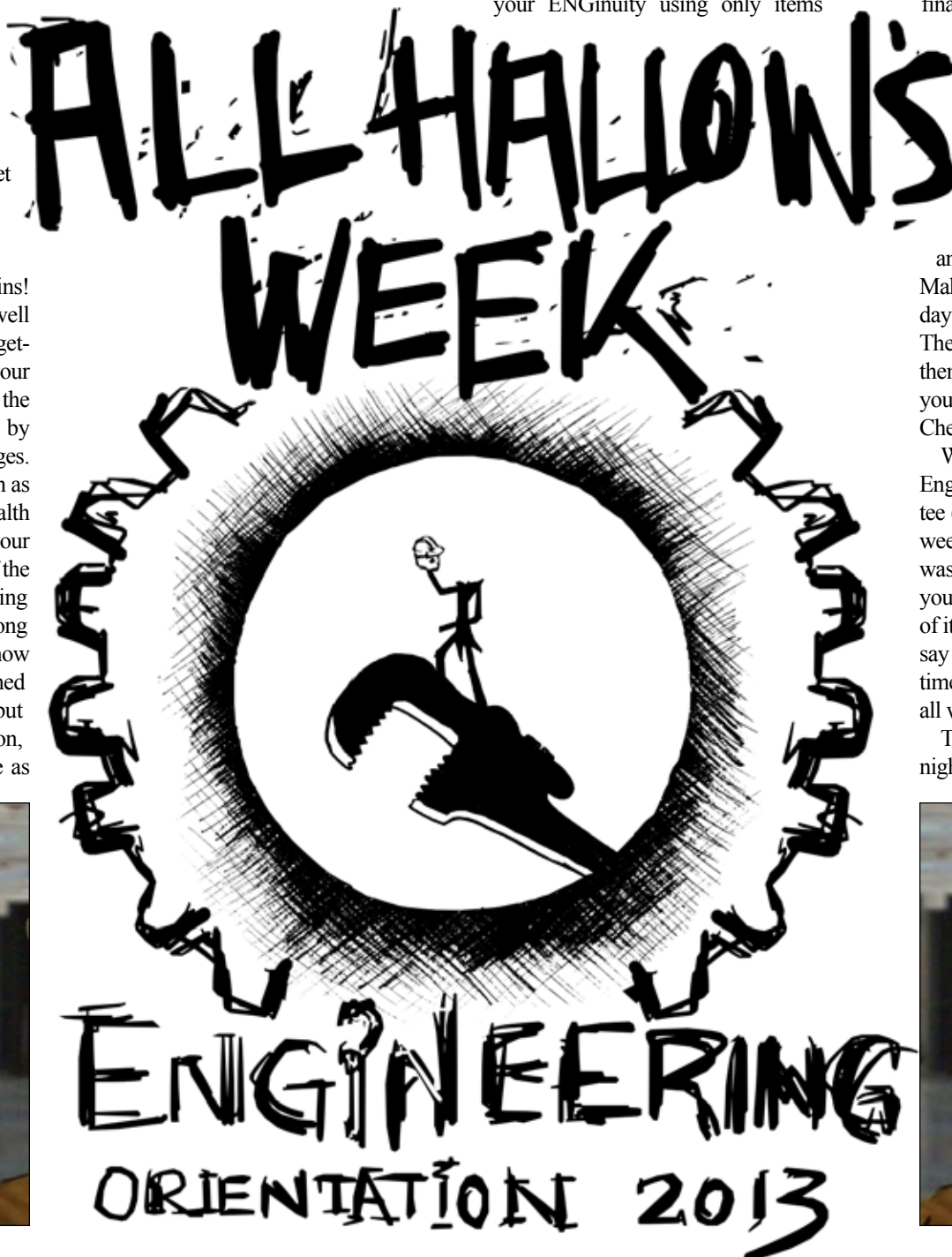
found in a massive pile of salvaged junk to build contraptions to meet the challenges of the day. You will also get to learn about and meet several of our student-run engineering teams. After the student teams lunch, you'll get to meet our Engineering mascot, the TOOL. It is the ultimate and the all-knowing TOOL. (Did we mention it also loves Engineering spirit and loud noises?)

On Friday, you'll participate in a battle of wits, hilarity, and creative genius during the final Engineering event: Scavenger Hunt. Go forth and try your hand at challenges such as Full-Contact Calculus, Pool Noodle Jousting, and 3D Twister, not to mention that there's a 60 page Acquisitions List of things you can find to earn points and tokens for your team.

But wait there's more! During nighttime events, you'll get to mix and mingle with frosh from other faculties. Make sure you come out to events like Tuesday's Variety Night, Wednesday Night Mixer, The Nightmare Before Friday (Halloween-themed toga party) on Thursday, and put on your fancy-pants for Saturday's Masquerade! Check your schedule to know all the details.

We, as your SuperHuges, are part of the Engineering Federation Orientation Committee (EngFOC) and are here to help make this week as fun as possible for you. This week was created especially for you, so the more you put into the week, the more you'll get out of it. If you have any questions or just want to say hellow, don't be afraid to stop us at any time! We are wearing gold jackets and vests all week!!

There can only be one team who rules the night... so, will it be yours?



Superhugue: Elizabeth Foran



Superhugue: Christina Shum

LISTEN UP FROSH!

HEADCOM
EDUCATION COMMITTEE

Now that you're here, it's time for you to learn what it takes to be a Waterloo Engineer. You have a lot to learn and a short time to do it in, so pay attention. We are HEADCOM and we are in charge. We control EDCOM and Orientation Week. Make no mistake about it — you have one job this week: IMPRESS EDCOM. We cannot stress this enough to you.

EDCOM is the Education Committee. We are your lifeline and your guides. We are a dedicated group of senior students who are the best and the brightest that Waterloo has to offer, meaning we are the best and the brightest, PERIOD. We also participate actively in the Engineering Society, the Waterloo Engineering Endowment Foundation (WEEF), and the many student teams you will learn about on Thursday. We are everywhere, we do everything, and we are not impressed easily.

We are the ones who will award you your hardhat, that is, if you earn it. This means that we are the ones who decide whether or not you are a Plummer; a true Waterloo Engineering student. Once you have your hardhats, we will be there to watch your ENGINuity during Junkyard Wars, and oversee all the events during Scavenger Hunt. On Sunday, based on everything we have seen, we will decide who has won the week, and who has lost. Good luck, Frosh. You're gonna need it.



Letter From the Outgoing Editor



LUCAS HUDSON
OUTGOING
EDITOR-IN-CHIEF

Greetings everyone! My name is Lucas Hudson and I am the outgoing Editor-in-Chief. For those who have never read *The Iron Warrior* before, this newspaper is the Official Newspaper of the Engineering Society of the University of Waterloo. Even though we are an Engineering newspaper, we cover things from arts & culture to events around campus and news from around the world. For those who are regular readers, I want to thank you again for choosing to read *The Iron Warrior*.

You are going to hear a lot of advice in the next week or so about how to tackle university. While some of the recommendations you will hear or read will be sound, not every piece of advice applies equally to every person. With that in mind, I decided not to give you a list of general tips on how to "survive" university or how to make friends. You'll figure those things out on your own. What I decided to do instead is to use this space to recount some memories from my last five terms at Waterloo, and tell you some of the things I have learned. Hopefully, you will be able to extrapolate some meaning from them that will help you in your adventures.

Over my time at Waterloo, I have made a multitude of mistakes. One of the biggest

mistakes in my university career appeared in the fifth issue of *The Iron Warrior* in the spring term. The department of Housing and Residences was scheduled to publish an ad detailing the availability of winter housing. Instead, what got published was an irrelevant and outdated ad about fall/spring 2013 upper-year residences. Not only did Housing and Residences not get the opportunity to spread the information they wanted, *The Iron Warrior* was spreading misinformation. I want to take complete responsibility for this mistake and would like to make an apology to Housing and Residences for printing the wrong advertisement. If you are looking for housing in winter 2014, whether you are in co-op or studying, the application is now open at uwaterloo.ca/housing/apply.

The last four years (I just finished 3A, but I took a year off between 1A and 1B) have taught me a lot about myself. It's weird how being around other people will do that. I have learned that no matter how much I tell myself I will get up early the next morning, it doesn't actually make it easier to get out of bed. It turns out that I am very good at convincing myself that I don't actually need an extra 15 minutes in the morning to get ready and that sleeping in is a great idea. I am most always wrong. How do I prevent myself from falling into the same bad habit? I don't. It's something I still struggle with to this day, and even struggled with this morning, but that doesn't mean I have given up with trying to change. I try to keep my alarm as far away from my bed as

possible, get a good night sleep every night, and even try to set my alarm so I don't interrupt a REM cycle. There hasn't been an easy solution yet, there rarely is. It turns out even the smallest thing like waking up in the morning takes motivation, self control and practice.

Besides learning that I am a big grouch in the morning, I have also learned about what kind of person I want to be during the day. I soon realized after starting university that I was not acting like that person I wanted to be. I wasn't following the golden rule: do unto others as you would have them do unto you. It has been a slow and difficult process turning into the person I am today, and to be honest, I am nowhere near the person I want to be. I want to be someone who is always kind, thoughtful of others' feelings and able to express my own feelings. I want to be someone who isn't influenced by absurd social pressures to dress or look a certain way or expect others to dress or look a certain way. I want to always be questioning the status quo, taking things for more than face value. I want to not always rely on spell check! The list could go on and on. Realistically, I will never be the person I want to be, because I am always going to find something that I dislike about myself, or a situation in which I should have acted differently. But, I am okay with that, because I know I am trying, and sometimes all you can do is try.

It looks like this is all the space I have, good luck with your studies and don't forget to be awesome!

Letter From the Incoming Editor



ALEXANDER LEE
INCOMING
EDITOR-IN-CHIEF

First off, I'd like to extend a warm welcome to all the incoming first year students. My name is Alexander Lee, and I am entering my 2A term as the incoming Editor-in-Chief of *The Iron Warrior* for Fall 2013. *The Iron Warrior* is the University of Waterloo's engineering newspaper. The University of Waterloo has *Imprint*, which is the newspaper for the entire university, but *The Iron Warrior* is purely for engineering. We are here to serve your needs and appeal to your interests as engineers.

Your first year in university will be one of the most memorable years of your life. Each of you will have a different experience, but that experience will be among the most unique. You were all born in different places, went to different schools, had different circumstances growing up. But don't let this divide you. What matters is that you all made it into Waterloo Engineering, the absolute best engineering program in Canada. Waterloo will do great things for you, provided you put the work and effort in. You have a lot to give to Waterloo, if you so choose, and here we accept it all. By the same token, Waterloo has a lot to teach you, in more ways than one; obviously academically, but for many of you, you will learn many things about yourself as well. Just how much you learn depends on how much

you are willing to put in to your classes.

You are all entering a new stage of life's journey. Things work differently here compared to high school. I've only just entered second year, so I remember first year very clearly. Here are some things that really stood out to me, and also some tips:

You will find your days both busier and strangely lighter than the the year before. This is because, while you have a lot more classes, and you have to learn much more much faster, you are also more free. You are not forced to go to any of your classes. You can skip whichever ones you like. This doesn't mean you should skip any classes, but the choice is yours.

Another aspect of this new found university freedom is that you will be able to stay up as late as you want. And by that I mean there is literally nothing stopping you. You won't have to hide the fact you're up at 2:00 in the morning from your parents. There is nothing stopping you. This is both a blessing, and a curse. You will find you want to stay up until 3:00 in the morning every night. Don't. Fight it, because at least three days out of five, you will have 8:30 a.m. lectures, and the human body cannot get by on four hours of sleep every night.

Good study habits. I CANNOT stress this enough. Hard work is important, but efficient work is even more important. You can spend hours trying to study for something, and someone you know will get the same amount done in an hour. Why? Well they might actually be smarter than you, but also they just might have more efficient study

habits. Experiment and see if you can find a way to study that works for you.

University life does not leave much room for a social life. With what little time you'll have, you should join something on campus. We have a plethora of student design teams, and some insane number of interest groups out there. From chess to cheese; you name it, and chances are Waterloo will have it somewhere on campus. And, of course, there's always *The Iron Warrior*! *wink wink, nudge nudge* No, seriously, go join something. Go do it now. As the saying goes, "All work and no play makes Jack a dull boy." Studying 24/7 will burn you out real quickly.

I personally found that my biggest hurdle in first year, and one I'm still not completely around, was the lack of structure in my day. I went to almost every one of my classes; however, it was hard to pay attention in some of them. Try your best to pay attention in all of your classes. If you start slacking off in some of the easier ones, it will be hard to get back into pace for the tougher ones.

Everyone's first year experience is going to be different. What matters is that you work hard but also enjoy it. Study hard, attend most of your lectures, all of your labs, and however many tutorials you think you need. Have fun with friends, and make some new ones. Above all, make the most of your first year. It won't happen again, or at least, the second time won't nearly be as awesome. Life is an adventure, as I keep hearing on those Spence Diamonds ads. No experience is a wasted one, as long as you learned from it.

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Want to reach a wide, intelligent audience which includes students, faculty and staff at the University?

We are the official newspaper of the University of Waterloo Engineering Society representing the entire undergraduate engineering student body of over 6000 students.

Our newspaper is distributed all across campus and is the perfect medium to advertise your event, employer information session, service, etc.

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THE IRON WARRIOR

The Newspaper of the University of Waterloo Engineering Society

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

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

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

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Welcome From the Dean of Engineering

PEARL SULLIVAN
DEAN OF ENGINEERING

Welcome to Waterloo Engineering!

I am very pleased that you have chosen the University of Waterloo to pursue your postsecondary education. Once again, we have attracted an impressive cohort of the brightest students to our first-year engineering programs, and you should take pride in joining our Faculty. You will be in the company of top researchers and teachers, dedicated staff, and motivated undergraduate and graduate students.

The Faculty values the importance of a vibrant, engaged student body and the contributions our students make to Waterloo Engineering, the university and the community.

The success of our students — academically, on co-op work terms and in extracurricular pursuits — is a major contributor to our excellent reputation, and so we look for students who are well-rounded and passionate. The result is an involved student body, home to active

student societies, competitive student teams, service-minded organizations, as well as newspapers, clubs and bands. I encourage you to get involved in one or more group or activity that inspires you and will enrich your Waterloo Engineering experience. Over the course of Orientation Week, you will be introduced to many new faces, a lot of new information and a diverse offering of new opportunities.

During this week and throughout the year, you may feel overwhelmed at times, adjusting to new expectations for academic and workplace performance, learning the ropes of our co-op program and choosing among the abundance of extracurricular activities.

Always remember that there is a strong support system available to you. The First-Year Engineering Office is an invaluable service, here to help with your transition by offering academic and personal counselling, as well as tutor sessions and upper-year mentors. Your professors and teaching assistants are also excellent resources, and upper-year

students can provide important insight.

Waterloo Engineering also has a staff member dedicated to enriching your experience. Meghan Mitchell is our acting Student Relations Officer and your contact in the Dean of Engineering Office. Be sure to get in touch with Meghan to find out about activities that match your interests, to provide feedback about Orientation Week or to share your Waterloo achievements.

But perhaps your most important resource will be the people you meet during Orientation Week. No doubt many of your classmates and other engineering students will become supportive friends that you'll have throughout your time with Waterloo Engineering — and well beyond.

In the next few years, you will be presented with different career possibilities. Whether you aspire to work for a specific industry, get involved in innovative research or start up your own company, or all three, there will be opportunities to pursue your aspirations



within your undergraduate program. Get involved and learn as much as you can. Once again, class of 2018, welcome to our Faculty and enjoy your Orientation Week!

Student Relations Officer

MEGHAN MITCHELL
STUDENT RELATIONS OFFICER

Welcome to Waterloo Engineering! I am excited to see so many new students on campus participating in Orientation Week. The Faculty of Engineering Orientation Committee (EngFoc) have worked tirelessly for almost a year, planning every detail of this welcoming, exciting and fun week for you. I truly hope that your orientation experience makes you feel welcomed and excited to be a part of this incredible faculty!

The role of the Student Relations Officer was created in 2008 with the goal of enhancing your engineering student experience and improving student relations with the administration. I believe we have made tremendous progress in both of these areas. A large part of my job is to listen to you and to ensure the student voice is heard. I provide regular updates to the Dean from our student body, and likewise, share updates from the Dean to you.

As your main contact in the Dean's Office, I am available to provide support to your activities and initiatives. One of my responsibilities is to serve as the

Faculty Orientation Advisor, so you will see me around during Orientation. Hopefully you will be motivated by the energy of this week to get involved in one or more of the many extra-curricular engineering activities. And of course, we love to boast about our students, so please share your stories and success with me and others in the Faculty.

I hope you have an awesome Orientation experience and I look forward to meeting you at some point during the week and throughout your time as a Waterloo Engineering student.



Welcome From CECA

CECA
CO-OPERATIVE EDUCATION
& CAREER ACTION

Co-operative Education & Career Action (CECA) manages the co-operative education system and career-related services for the University of Waterloo. CECA provides students with everything they need to know when it comes to employment. For co-op students in Engineering who are looking for Winter 2014 employment, the first job postings go online September 21 with interviews starting on September 30. With those dates fast approaching, check out some ways that CECA can help you out with the job process.

The Centre for Career Action hosts a variety of workshops throughout the semester. From Working Internationally to Resume Building; these workshops are the perfect tools for students looking to improve their professional skills. For the full schedule and to RSVP, visit our website: uwaterloo.ca/career-action.

CECA also hosts Employer Information Sessions. The sessions allow students to hear about job offerings and network with prospective employers. Don't delay; sessions begin the first week of classes! For the full schedule of Information Sessions, visit: ceca.uwaterloo.ca/students/sessions.php.

Don't forget to attend the Career Fair on Wednesday, September 25, 10:00 a.m. - 3:30 p.m. at RIM Park. This annual event is the perfect opportunity to network with potential employers, investigate and research career options, and obtain information from employers. For more information visit the Partnerships for Employment website at partners4employment.ca/home.

If you're a first-year students looking for more information, our career advisors would be happy to help you. They provide advice such as helping you fit together skills to land your first job, and answering your questions about the co-op process, etc. Appointments can be made online or in person at the Tatham Centre.

Entrepreneurship and You

VELOCITY
UNIVERSITY OF WATERLOO

So you've just finished high school. You got into the University of Waterloo (congrats!), you enrolled in all of your classes, you've moved in to residence or figured out how you're going to commute from home or off campus, and you're ready to hit Orientation Week head on. There are so many events that you don't even know where to begin.

Take it one day at a time, this week is going to tire you out! You'll meet so many people and go to so many events, from Masquerade to Black and Gold Day, that you'll completely lose track of time. But maybe you can handle that. Maybe you'll love the busyness of Orientation Week and you'll want more. You love the constant rush, meeting people and always being engaged and involved.

Have you considered entrepreneurship?

The University of Waterloo and the city of Kitchener-Waterloo are renowned for their constantly growing entrepreneur and startup culture. Day after day, there are startups emerging from the University of Waterloo — startups run by students. They're proving that entrepreneurship is a viable option for students and that now is the perfect time to get involved! People all over this city are coming up with innovative ideas and figuring out ways to start a company however they can. They are tapping into the many local resources available in K-W, like the Accelerator Centre and the Communitech Hub.

If you're interested in learning more about entrepreneurship in Waterloo or have totally been bitten by the startup

bug, here's what you need to do:

Check out the Communitech hub in downtown Kitchener. This is one of the central locations for startups and entrepreneurship in K-W. You can spend some time at the hub, get to know some of the startups working there and take in the atmosphere.

While you're there, stop by the VeloCity Garage. The VeloCity Garage houses University of Waterloo students and alum who are working on startup companies. Feel free to walk around and get more of a feel for how you could start a business while you're in school and how there's value in it.

VeloCity also has programming for entrepreneurial students right on campus. Check out velocity.uwaterloo.ca for more information on their campus events as well as the VeloCity residence, a living space where 70 student entrepreneurs coexist and innovate every term.

The UW Entrepreneurship Society has many events through out the term as well that will let you see what entrepreneurship is all about. Check them out at uwesociety.com.

If you're in a program that includes co-op, look into Waterloo's Enterprise Co-op program. It gives students the unique opportunity to earn a co-op credit while figuring out how to start a company.

If you find entrepreneurship compelling, or you've always wanted to work for a startup, or you want to start your own company eventually, you've definitely come to the right university. Take advantage of this awesome space and dip your feet into the entrepreneurial world. Who knows? You could be the next Mark Zuckerberg.

The Volunteer/Internship Fair

Come and visit the volunteer/internship fair organized by the Centre for Career Action. You can meet with representatives from a variety of local agencies to find out about volunteer opportunities. Volunteering is a great way to develop new skills and gain practical experience, meet new people and connect with your community.

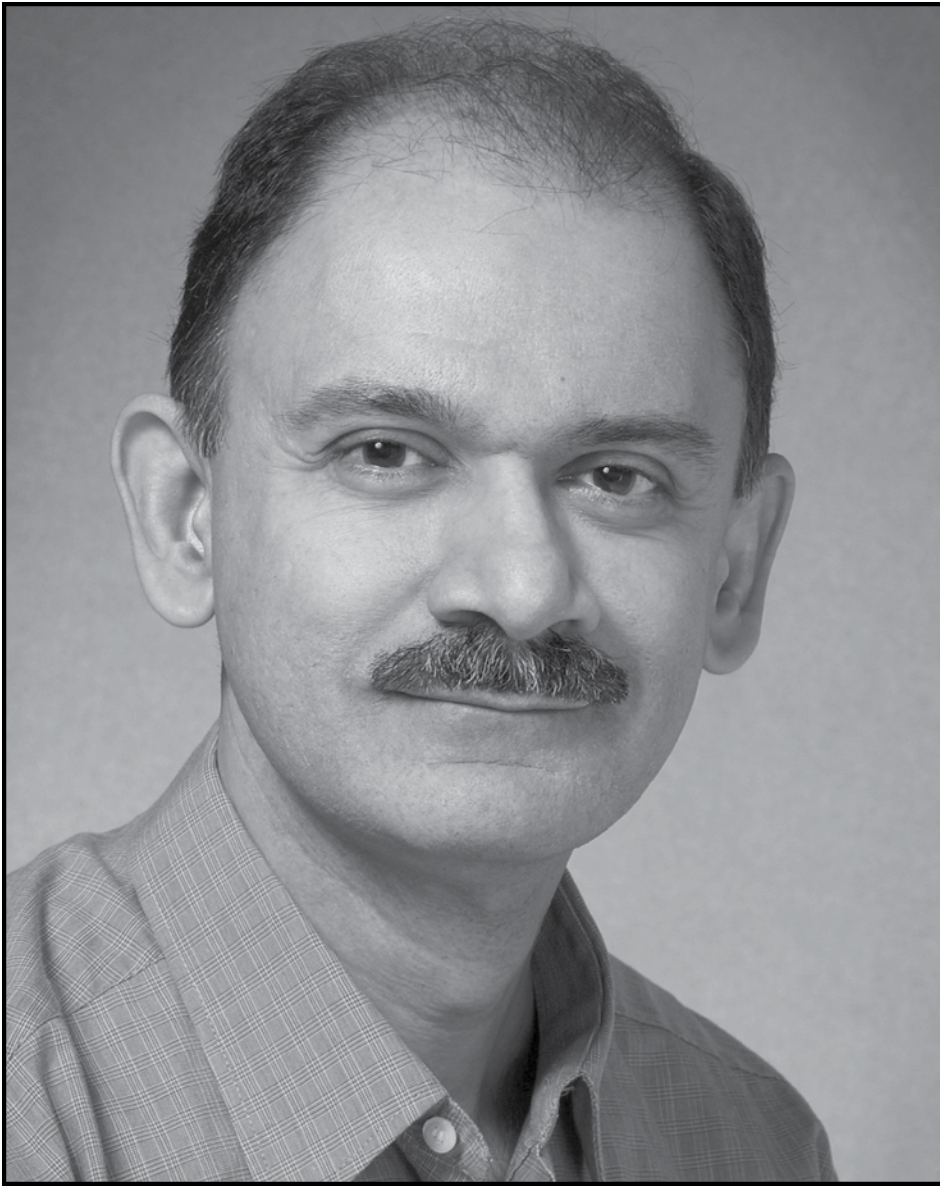
Talk with representatives from over 40 local organizations about opportunities that may include: administrative work, event planning/fundraising, marketing, boards and committees, special events and recreation — just to name a few.

This event takes place in the Student Life Centre in the Great Hall on

Wednesday September 18, 2013 from 11:00a.m. to 2:30p.m.

uwaterloo.ca/career-action

Welcome to First-Year Engineering



AJOY OPAL
DIRECTOR, FIRST YEAR ENGINEERING

A warm welcome to all first-year engineering students and congratulations on joining one of the finest universities in Canada. Starting university will provide many opportunities for personal and academic growth: to make new friends, to visit new places, to develop critical analysis skills, gain valuable work experience and to develop a career of your choice. Your undergraduate degree will take approximately five years to complete and it is important that you start this process with care and planning. The First-Year Engineering Office is here to help you plan and manage the transition from high school and home to a new environment in the university.

Starting university is also synonymous with becoming an adult. You have the freedom to do what you like and also the responsibility of taking care of yourself. It is your choice to attend classes, complete assignments or write exams; however, we highly recommend that you participate in all of these activities, as they will benefit you greatly. The decisions that you make now will have far reaching consequences later in your life. So, choose wisely!

Let me give you some tips on what to expect and on how to succeed in engineering at Waterloo.

What to Expect in Your 1A term

Each one of you will have approximately 30 hours per week of scheduled lectures, tutorials and laboratory periods during the 1A term. In addition, you will have to put in 20-30 hours per week to study, review concepts and to finish assignments and reports. This adds up to 50-60 hours per week of work; it is more than a full time job! To manage this workload you may have to change your study habits and how you manage your life. Let me give you some tips on things that work, and some that do not work:

Attend classes. Follow along with what the instructor is teaching in class. Ask questions. During classes do not be distracted by Facebook, Twitter, movies or games on your computer or smartphone.

Review your course material and complete assignments on a regular weekly basis. Do not try to cram the day before exams.

Understand the underlying concepts that you are studying in class, instead of memorizing formulae. Solve problems to evaluate your understanding of concepts.

Balance your Life

Your first thought when you join university may be at either end of two extremes: either study-study-study, or possibly, party-party-party. Neither of these extremes is the ideal choice and, as usual, the best choice lies somewhere in between. Let me suggest that everyone is made up of three major parts: mind, body and soul. To be successful in life you need to nurture all of these parts because they depend on each other for survival. For your mind you need to spend time studying and developing critical analysis skills; for your body you need to eat, sleep and exercise regularly; and for your soul you need to relax with friends or take part in extra-curricular activities. Not only do you have to nurture all three parts, you need to balance the amount of time spent on each activity, without ignoring any aspect of your life.

You will also find that time will become an important resource that is in short supply during your undergraduate career. There will never be enough time to complete all the tasks to the degree of satisfaction that you would like. Thus, you will have to set priorities and spend an appropriate amount of time on each task. To help you with this process it is important that you make a schedule for all your activities. Not only should you make a schedule, you must follow it and make adjustments to it as you go along.

In summary, there are three major things to consider during your undergraduate studies, they are neither study-study-study, nor party-party-party. Instead, they are mind-body-soul, and the balance between them.

Ask for Help

All engineering programs are demanding and have heavy workloads. The workload may result in limited time to understand a concept, finish an assignment or project, or prepare for an exam. The lack of time may also cause stress in your life. In these situations you will need help with your studies or personal life. Keep in mind that asking for help maybe the better choice in many situations, as opposed to, doing everything yourself or doing nothing.

There are many sources of academic help available at the university. First will be your classmates and friends studying the same or similar subjects. It will be beneficial to form study groups with other students taking the same course. Help is also available from your course instructors and teaching assistants during lectures and tutorials, and outside class hours by making appointments to see them in their office. Additional help is available through special staff and tutors hired by the First-Year Engineering Office to help you with your courses. The First-Year Engineering advisors are available to provide academic counselling, for example, in case your academic performance is not meeting the standards we expect of all students. Please make use of all these resources.

To get help with stress, personal issues, and to learn study and time management skills you can come to Counselling Services. There are Engineering Counsellors available within the First-Year Office, or you can go to Needles Hall for additional university Counselling Services. For your physical health you have access to doctors and nurses on campus at Health Services.

Information and access to all these kinds of help can be obtained by coming to the First-Year Office in CPH 1320, or by calling extension 84761 during normal working hours.

Be Professional

Engineering, like many other programs, such as, medicine, law and accounting, are called professional programs. The reason is that the work done by these professionals can, and does, affect the lives of other people. As a result, professionals are expected to adhere to high standards in their dealings with other people and amongst themselves. To help you develop as a professional, we expect you to behave in a professional way with everyone, including, your fellow students, teaching assistants, instructors and university staff. Any unprofessional behaviour during your university career can have serious consequences and, depending upon the seriousness of the misdeed, it can lead to loss of marks in a course, or all the way to expulsion from the university.

Being a professional means being ethical, courteous and considerate in all your dealings and communicating your ideas and thoughts clearly. Being professional in a classroom will mean not disturbing your fellow students or the instructor by talking in class. Being professional to your fellow students will mean treating everybody equally and without prejudice, regardless of their race, colour, creed, sex or religion. Being a professional means not to lie, cheat or copy on assignments and exams. Being professional means giving credit where it is due, without misrepresenting somebody else's work as your own. Being a professional is all about doing the right thing at the right time. If you are ever in doubt about if an action is professional or not, ask someone in a position of authority to help you decide.

I wish you all a successful career in engineering and a enjoyable time at the University of Waterloo.

Your first thought when you join university may be at either end of two extremes: either study-study-study, or possibly, party-party-party. Neither of these extremes is the ideal choice and, as usual, the best choice lies somewhere in between. Let me suggest that everyone is made up of three major parts: mind, body and soul.

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UNIVERSITY OF
WATERLOO

Engineering Exchanges

See the World While Earning Your Degree!

PETER ROE

DIRECTOR OF INTERNATIONAL EXCHANGES

Welcome frosh, to Waterloo Engineering, where we try to help your career, long term, to be the best possible for you. And what has international exchange got to do with this? If you have lived most of your life in Canada, with just a few trips overseas for holidays or to visit relatives, you can really win by going on exchange to a foreign country and being totally immersed in their environment. The experience is often life-changing; it can open your eyes to the outlook, traditions and culture of your host country and to many peoples around the world. You will meet other exchange students from all the continents when you are at one of our partner universities for your 3A or 3B term (or both!). You will make life-long friends

and contacts from around the world.

International Exchange is a privilege which we offer to students who have completed 2B and satisfy a number of other criteria. So why think about it at the beginning of 1A? It's a great opportunity that deserves to be high on your list of things to plan for. It needs preparation, organization and forethought. If you plan ahead you can be among the 15% of your class who can go on this major adventure and learning experience.

We have exchange programs with almost 80 top-tier universities in about 30 countries around the world. You need to evaluate which best suits your needs; some of our exchanges are restricted in numbers, some are open only to certain disciplines of engineering, for some you need to learn the language spoken in the country and used for instruction. In some of our exchanges it's easiest to go for a

one-term exchange; in others two terms, or even a full year including a work term is best. All this is a part of planning for your future career, which could take you anywhere in the world. To get started, visit our website (search for "Engineering exchanges" from the Waterloo home page) for a wealth of detailed information and all the contacts you need to help you in the process.

If you're concerned about money, more and more scholarships and bursaries are becoming available to help. Normally exchange students lose no time on exchange and graduate with their class.

Finally, exchange is great for fun, travel and adventure. You will visit parts of the world that stay-at-home students may never experience. Don't take my word for it; talk to students who've gone, or read what they have to say. For example:

"I wouldn't have traded my experiences

for the world. My time on exchange was great: I got to go traveling and backpacking, got to meet some fantastic people from all over the world, and I graduated on time with my class and my friends! ...If you are even just considering an exchange, I recommend without the slightest reservation that you go. Waking up and looking forward to every day in a new country... that's just not a feeling that you get [if you stay at home]!" (Matthew Lee, SyDe)

"Doing an exchange was probably the best decision I have ever made. I learned so much about engineering (of course), but also about European culture and history, and simply interacting with people of an entirely different background. The time and distance away from home, and the completely different lifestyle was definitely not easy to adjust to, but these aspects made the whole experience worthwhile." (Winnie Tse, MechE)

Engineering Students Societies' Council of Ontario

LEILA MEEMA-COLEMAN
VICE-PRESIDENT EXTERNAL 'A'

The Engineering Student Societies' Council of Ontario or ESSCO, is a student run organization that facilitates communication between 16 different Engineering Societies across Ontario. ESSCO represents over 24 000 undergraduate engineering students to organizations such as Professional Engineers of Ontario (PEO), the Ontario Society of Professional Engineers (OSPE), and the Council of Ontario Deans of Engineering (CODE). The focus of ESSCO is to be the voice of the engineering students in Ontario. ESSCO also communicates with the Canadian Federation of Engineering Students (CFES) and is responsible for providing the Ontario student's opinion to the national council.

How can you get involved?

As a first year student there are many ways you can get involved with and contribute to ESSCO! Here are just a few to get you started:

First Year Integration Conference

ESSCO runs four different conferences throughout the year and invites delegates

from all over Ontario to come and learn from each other. The First Year Integration Conference (FYIC) is a conference for first years who are looking to get more involved with their Engineering Societies or in the school community. It focuses on leadership development, building on engineering traditions, and provides an introduction to ESSCO and other groups within the Engineering profession. The conference provides an opportunity to network with other motivated and engaged engineering students from Ontario and allows first years to interact more closely with involved students like the VP-External. This year the conference is being held at Carleton at the beginning of February. Waterloo 'A' (Eight Streams) and Waterloo 'B' (Four streams) both bring delegations of first years students, so keep an eye on the EngSoc mailing list in late November for application details, or talk to one of the VP Externals!

Rube Goldberg Project

Every year ESSCO facilitates an Ontario wide Rube Goldberg machine that connects over ten schools and for the past few years has culminated in lighting up the CN tower purple! The Waterloo Engineering



Engineering Student Societies Council of Ontario

Society has constructed a machine each of the three years the project has been running, and is looking to make it even better this year. The build happens in the Winter term during National Engineering month (March), so if you are an eight-stream or a four-stream on co-op in Waterloo and interested, come out and volunteer to help with this province-wide engineering awareness event. Details will be available on the EngSoc mailing list in February.

Wonderland Math & Science Day

Math and Science day happens in May at Canada's Wonderland, and gives high

school students a chance to experience first hand the engineering principles and concepts demonstrated by rollercoasters. ESSCO needs volunteers to help run the event and it is a great leadership opportunity and a way to help inspire the high school students involved. This happens in the summer term, so four-streams in their 1B term should watch the EngSoc mailing list in May for more details.

To find out more, check out the ESSCO website, or e-mail or talk to one of the Waterloo VP Externals, Leila and Kristina!

Website: essco.ca
E-mail: executive@essco.ca

Canadian Federation of Engineering Students

KRISHNA IYER
4A NANOTECHNOLOGY

The Canadian Federation of Engineering Students (CFES) is a national organization that represents engineering students all across Canada. CFES provides a platform to facilitate the sharing of knowledge and to further the engineering profession from a student perspective. Due to its national appeal, it is a bilingual organization. The CFES represents students on the Canadian Engineering Accreditation Board (CEAB) which decides on the legitimacy of various engineering programs across the nation. Historically, CFES was instrumental in effecting change in the engineering student body. Following the École Polytechnique incident, CFES was instrumental in advocating for more rigorous gun control laws as well as assisting students in coping with the tragedy.

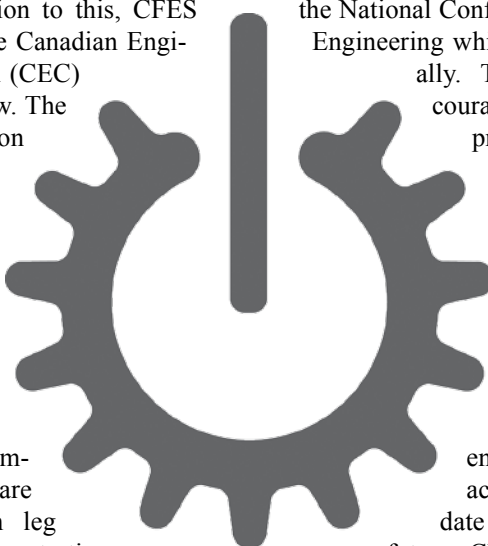
The CFES also conducts several events and services for your benefit. These include the yearly CFES President's Meeting, which serves as a platform for VP Externals from across the country to discuss best practices and understand what challenges could potentially arise from the

various activities conducted by individual engineering societies. These meetings are attended by representatives from almost all of the 45 member schools and thus representing almost 60 000 students across the nation. In addition to this, CFES has been running the Canadian Engineering Competition (CEC) for several years now. The CEC is a competition between 150 of the brightest engineering students from across Canada vying for titles in each of the six categories including design, consulting, presentation and debate. The competitors for CEC are distilled from each leg of local competitions starting with the Waterloo Engineering Competition (WEC) and then the Ontario Engineering Competition (OEC). CFES is also currently running the Shell International Engineering Competition that pits the best talents from across the globe in various

engineering challenges.

Additionally, CFES has been working hard to promote the needs of women in engineering and identify lacunae that need to be addressed. For this purpose, CFES runs the National Conference for Women in Engineering which takes place annually. This conference encourages the interaction of professional engineers with the students and thus hopes to address problems arising from gender issues in the engineering profession.

Additionally, in order to keep the engineering students across Canada up to date and relevant in the future, CFES organizes Complementary Education courses in a wide variety of subjects ranging from "The Engineering of Beer" to "Sustainable Engineering". These courses are heavily subsidized and provide an opportunity for students to gear up to be the engineer of



tomorrow. CFES also holds a "Lean Six-Sigma Course" in partnership with Canada Post to provide the opportunity for Canadian engineering students to get certified in these career advancing qualifications.

Waterloo's involvement with the CFES is quite extensive. Last year, Waterloo was the host of the biggest event organized by the CFES; Congress. Congress provides a platform for almost 200 students from over 40 different schools to interact. Furthermore, there are several sessions held by industry professionals to empower the national transfer of knowledge. Congress also serves as the annual general body meeting of the CFES and policy changes are often made here.

Additionally, Waterloo is also the host and producer of the official publication of the CFES. Under the helm of Waterloo Engineering student, Lisa Belbeck, who serves as the President, CFES is striving towards better understanding and providing the services expected from it to member students

Despite all the acronyms and cryptic sounding titles, CFES strives for a better tomorrow for the Canadian engineering profession.

Welcome From Your Colour Group Leaders

**MIKE, BRANDI, MEL,
CODY & ANDREW**
PINK HUGES

MUUAHAHAHAHAHAHAHAHAHAHAHA!!! We've done it! We've finally done it! The engineering professors told us that a Six-Legged, Pink-Spotted Death Ray would be impossible to build, but this year's Pink Team finally pulled it off!

Of course, it's not completely finished...

**ANIA, SANTIAGO, JACOB,
AMMAR, KEVIN & PRARTHANA**
YELLOW HUGES

OMG we are so excited to be on your team! You guys are like totally the best team ever! We are going to win this thing so hard, for real. We love you!!!

Alright... seeing as how FOC doesn't read past the first few sentences, we can

**SHIPING, VERA, LEILA,
JILLIAN & HEATHER**
LIGHT PURPLE HUGES

Good evening froshlings... welcome to our lair. We are vampires, the lords of the night. Originally hailing from Transylvania and infiltrating popular culture as Count Dracula, we are now best known

**BOGDAN, GORDON, CODY,
NIKITA, CAITLYN & NIKOLA**
DARK PURPLE HUGES

Once upon a time, a team of engineers set out to deconstruct the popular myths surrounding the world's most lame and cheesy fairy tales, bringing back their startling and gruesome origins in order

**VANNA, RYAN, PETE,
MATTHEW & SEAN**
DARK BROWN HUGES

AWOOOO!!! The full moon hangs low in the dark and empty sky. Deep in the hallowed woods a bone-chilling howl pierces the silence. One by one, the cries

**KISSAN, DYLAN,
BRIAN, RYAN & ANNA**
LIGHT BROWN HUGES

Fe Fi Fo Fum! Watch out because here the Giants come! That's right fellow future engineers, your first task as part of the LIGHT BROWN GIANTS for Orientation Week, 2013 is to stomp the competition. Do you have what it takes? (We know you do, you're a Waterloo Engineering Student!) Throughout the week, your skills and knowledge will be tested, but with the help of your Bigs and Hugues, we can guarantee that we'll be head and shoulders above the rest! From the tiniest

**ANDREW, ALLYSON,
SARAH & CHARLIE**
LIGHT BLUE HUGES

Hello children! I see you're getting ready for bed. Look at you in your onesie, teddy bear, water in your Hello Kitty mug. You seem so prepared for a night of dreams,

**BRENDAN, ANN, NICOLA,
BRENT, CHANNA & YU-CHEN**
DARK BLUE HUGES

Under the sea,
Under the sea.
Darling it's better,
Down where it's wetter,
Take it from me.
Up on the shore they work all day,
Out in the sun they slave away.
While we devotin',
Full time to floatin',

ished... we still need to make the final adjustments to the binary flux capacitor. And those other modifications to the cerebral cortex bifurcator, and the primary quantum cheese grater. Oh! And we can't forget about the plasma velociraptor cannons. Those will be the most impressive part.

Alright, so maybe the Six-Legged Pink-Spotted Death Ray isn't fully functional, but I'm sure that with the help of the clever

start being honest. It is a testament to the ubiquity of this theme that when someone brings up one of the greatest civilizations in the history of humanity, the first thing that comes to mind is second-rate horror movies. In this spirit, we welcome you to our second-rate Frosh Week theme: The Curse of the Pharaohs. (Don't worry, the rest of these losers are fourth or third-rate at best, with the obvious exception of Team Black!)

for making girls swoon as the frighteningly charming Cullen family who only come out to suck (animal) blood, prey on high school girls and apparently... play baseball. We need your help to prove that we are the deadliest, most bloodsucking, sparkliest creatures out there. You can prepare for the week by jumping off things and pretending you are a bat, biting

to allow a new group of first-year engineers to survive the horror of All Hallows' Week. We require all of your wit and cunning to face the tasks ahead of us, and be the scariest fairy tale character of them all in order for our team to be the very best, like no one ever was! Your team will be led by a pair of German twins, a durple wolf, a lover of bears, my

of the pack join in a ghastly chorus. Dark Brown, let the hunt begin!

Engineering students by day and wolves by night, we're ready to shapeshift into a fearsome beast to rule the darkness. Once confined solely to myth, we will rise to vanquish our enemies with long claws and razor-sharp teeth. We are

est ogres to the mightiest giants, we shall unite as one and defeat that pesky Jack! SO, get pumped up, get LOUD, and get out your inner GIANT! All Hallows' Week will bow down to the power of the Giants!!!

sweet and undisturbed. You're expecting to be safe and sound underneath the covers of your bed, as if hidden away from any evils in the world. I'm sorry to say but the world doesn't work that way. We seek joy in hiding in your room and disturbing your peaceful slumber; scaring you is not only a joy, it's a way of life. What's that? You saw the curtain

Under the sea!

Welcome to the best team to have ever graced the seas! We are your hugues and have hand-picked you from a "pool" of applicants (just like how you pick a goldfish out). Get ready for a week of "swimming" through obstacles and learning just what it takes to be an engineer here at Waterloo. We are the Creatures of the Deep, the giant squids lurking on the bottom of the ocean, the Otopogon's and Nessie's of a variety of lakes around the world. Imagine the most incredible sea creatures

new first-years, it will be working by the end of Orientation Week. And then, my minions... then, WE CAN TAKE OVER THE WORLD. Huehuhuehuhuehuhueh...

Whether you're a Mythbuster, an evil doctor, a wacky inventor — or even if you saw *The Human Centipede* and thought: "hey, that's not a bad idea" — this year's Pink Team is looking forward to meeting all of you and getting our science on. As a great man once said: "Science Rules!"

This week we will draw upon Ancient Egypt, mummy movies (from the genre-defining 1932, *The Mummy* to the direct-to-DVD 2012, *The Scorpion King 3: Battle for Redemption*), and *Oedipus Rex* (don't worry, not too much). But most importantly, the secret to a successful frosh week, and first year, is to balance social life, hard work, and belief in the heart of the cards. We do love you.

into strawberries and pretending the juice is blood, and rubbing baby powder all over yourself to get that "undead glow."

We need you at your immortal peak for the week so we can take home the gold and prove, once and for all, that the brighter you sparkle, the brighter you shine.

Suck you later.

pretty girl engineer, a prince, and many other mischievous fairy tale characters, all of whom have been working tirelessly to make your introduction to university a most spook-tacular event. We invite you to join us as we harness the horrors of the Brothers Grimm, so put your scary face on and get ready. Hi-ho, hi-ho, it's off to O-Week we go...

more intelligent, dangerous, and fearsome than regular wolves, fit for devouring the oh-too-sparkly vampires — Team Jacob! Come into our wolf den for a howling good time. Dark Brown unite! Will you join our pack as we, the werewolves, take back the night?

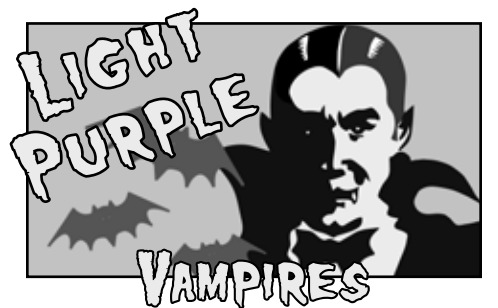
AWOOOOO!!!!

est ogres to the mightiest giants, we shall unite as one and defeat that pesky Jack! SO, get pumped up, get LOUD, and get out your inner GIANT! All Hallows' Week will bow down to the power of the Giants!!!

We're Big, we're Tall, Light Brown will win it all!

twitch? Silly child, It's probably just the wind outside. A creak beneath you? Oh now that's just your bed. No need to be afraid of some regular old household noises. That's right, nothing to be frightened of here... just close your eyes... and keep them closed because there is no guarantee you won't be terrified of what is in front of you if you open them.

you've ever imagined and then look up Aoxotlotl. Get ready for your ingenuity to be put to the test, to reach out and succeed more than you could have ever imagined. You, with your wonderful team of bigs and hugues will be introduced to not only a week of fun but the very lifestyle of engineering at Waterloo. This week is about testing limits, reaching out, and making friends. So, get ready, get excited, and sharpen your teeth, cause we are going to rule All Hallows' Week with Poseidon's trident in hand.



Welcome From Your Colour Group Leaders



**CHARLOTTE,
CHAD, KRISHNA,
KRISTINA & GINETTE**
RED HUGES

Shiver me timbers, who goes there?
Yo-ho-ho, ahoy matey and welcome to

our grand beauty of a crew. The sun be shinin' and the sea beckons ye. Ye don't have a black spot on yer hand now do ya? Good, we want to find as much booty as we can this week, so let's use ingenuity to pillage and plunder all the treasure this week! We be the Red Crew, made up of

the Cap'n Huges and our Big crew! We be sailing the seas night and day looking for loot and fighting any of the scallywags we may encounter, but watch out for the ones dressed in black! Aye, raise yer Jolly Roger and let's set sail towards the swaggy!



**NICOLE, IAN, ARIANA,
RYAN, MATTHEW & RAIN**
ORANGE HUGES

Boys and girls of first-year age.
Wouldn't you like to see something strange?

Come with us and you will see,
This, our team of Halloween...
This is Orange Team, and we welcome you to Orientation Week, 2013 where we will rule Halloween as Pumpkin Kings and Queens and further take over the Christmas holiday as well. Our theme

is the Nightmare Before Christmas and we hope that you will help us to reinvent Christmas in a much more spooky fashion that will be described as the greatest nightmare Orientation Week has ever seen.

Spook you later.



**GABE, SHERYL, DEREK,
KATE & ROBERT**
LIGHT GREEN HUGES

Six feet under we now lie. Six feet under hear our cry. Bar the windows, guard the door. On this hollowed week, we rest no more...

Walkers, biters, infected, demons and ghouls, we've been given many name. This time, we are known as team Light Green, the unstoppable force of The Walking Dead.

late night TV marathons were nothing but child's play. We will bite, claw, and shred our way to victory. You may have read a horror story, but we are the ones that made them.

Some of you say you are prepared, even eager for our arrival, this you shall quickly regret. Your *Call of Duty* high score or

For all the undead on the amazing Light Green team, be ready and have no fear. If death couldn't stop us, nothing ever will.



**LEAH, CATHERINE, STEFAN,
SOFI, ALVEE & JUSTIN**
DARK GREEN HUGES

It is easy to type cast swamp monsters as those stinky, dirty entities lurking in the bog near you, but don't be dismayed. Like our

favourite swamp dweller Shrek, and our less favourite foods, onions, WE HAVE LAYERS! No one-dimensional scaring for us, we can use our craftiness and inventiveness to out shine all those other teams despite our protective coatings of swamp grime. Now is the time to get down and dirty, leave your

sense of decorum behind for the exciting journey that will be Waterloo Engineering. Whether you like to bathe in mud before hugging your victims, or are more of the ethereal swamp gas type, there is something for everyone, dirtiness optional. We can't wait for you to join our swampy domain!

About the Hardhats

Yellow

The Yellow hardhat is reserved for incoming new students who complete the Principles of Engineering during the Earn Your Hardhat event on the Tuesday of Orientation Week. It symbolises the incoming student's dedication and hard work during their life so far, their Orientation Week, and the years to come. An estimated 1,600 Yellow hardhats will be awarded this year.

Who gets one: Every first-year student entering the Faculty of Engineering (this includes Software Engineering and Architecture) who completes the Principles of Engineering and takes the Plummer's Oath during Orientation Week.

What wearing it means: That the wearer is a plumber (a student in the Faculty of Engineering at the University of Waterloo).

Orange

The Orange hardhat is awarded to the few Media Gurus during Orientation Week who prove their ability to handle a camera, manage media, and compile videos which are considered by most to be works of art. It symbolises the hard work they put into the week in capturing the special memories of an amazing week for all. Only six Orange hardhats will be awarded this year, so when you see one be sure to smile and wave for the camera.

Who gets one: Every 'Media Guru' student leader that participates in Engineering Orientation Week and captures the moments of Orientation week. All of these people have earned their Yellow hardhat, completed Orientation Leader Training and can't wait to see you smile :).

Toolbearer

The Toolbearer hardhat is worn by the protectors of the Engineering Society Mascot, The Tool. This mysterious group only appears when the The Tool is on display and then disappears when The Tool leaves. It is unknown how many exist or where they come from.

Who gets one: Toolbearers.

Green

The Green hardhat is awarded to the Bigs during Orientation Week that prove their ability to dedicate and sacrifice themselves to their colour group and the new students they lead. It represents that leader's ability to be a leader and their dedication to Orientation Week. An estimated 300 Green hardhats will be awarded this year.

Who gets one: Every 'Big' student leader that participates in Engineering Orientation Week that completes their challenges alongside the first-year students in their colour group. All 'Bigs' have earned their Yellow hardhat and completed Orientation Leader Training.



Avalanche

The Avalanche is awarded to the organizers of the Architecture Engineering specific Orientation Week. It signifies they are a member of the Federation Orientation Committee, a top student leader, and possess the dedication to organize an Orientation Week between both the main Waterloo campus and the Architecture campus in Cambridge. The wearers also deserve your utmost respect for the dedication they've shown to Orientation Week. Only two will be awarded this year; one to Dan Abad and the other to Michelle Bullough, the HighArchs.

Who gets one: The Federation Orientation Committee members for Architecture.

What wearing one means: That the wearer was selected to be part of the Federation Orientation Committee to represent Architecture, completed FOC training, developed and organized all Architecture Orientation Week programming, leads all Architecture student leaders, oversees their events, has completed Orientation Leader Training, Huge Training and Education Committee Training and is deserving of your respect for the sacrifices they've made to Orientation Week.

Red

The Red hardhat is awarded to the few Huges during Orientation Week who have the ability to organize their colour group, motivate their leaders and lead their team to victory. It symbolises the hard work they put into the week through organizing and leading their team, as well as their proven abilities as student leaders. Only an estimated 60 Red hardhats will be awarded this year, so those that wear one should be trusted and looked up to.

Who gets one: Every 'Huge' student leader that participates in Engineering Orientation Week, organizes and runs their colour group and participates in the Huge Hardhat Ceremony. All 'Huges' have earned their Yellow hardhat, completed Orientation Leader Training, completed Huge training and are trusted leaders of their respective colour group.

The Roughrider

The Roughrider hardhat is awarded to the two organizers of Engineering Orientation Week itself known as the Superhuges. They are members of the Federation Orientation Committee, leaders of the Huges, and have worked with the Headcom (see below) and the HighArchs since last year to produce the best Orientation Week possible. It symbolises the sacrifice they've made to Orientation Week and that they are to be respected. They, and the Headcom, are responsible for a bulk of what you experience during Engineering Orientation Week. Only two will be awarded this year; one to Elizabeth Foran and the other to Christina Shum.

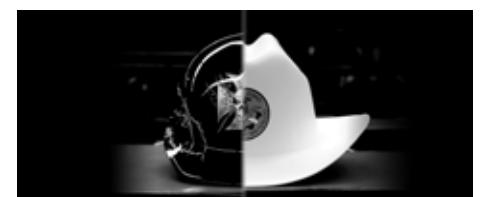
Who gets one: The Superhuges.

What wearing one means: That the wearer was selected to be part of the Federation Orientation Committee to represent Engineering, completed FOC training, developed and organized all Engineering Orientation Week programming, leads the Huges and Bigs, oversees their events, has completed Orientation Leader Training, Huge Training and Education Committee Training and is deserving of your respect for the sacrifices they've made to Orientation Week.

Black

The Black hardhat is awarded to the few students who are part of the Education Committee. It symbolises the hard work they put into the week setting up, running events, moving materials, and ensuring safety to all the new students. Only an estimated 40 Black hardhats will be awarded this year.

Who gets one: Every member of the Education Committee that participates in Engineering Orientation Week and participates in the Education Committee Hardhat Ceremony.



The Hellraiser

The Hellraiser hardhat is awarded to the two organizers of Engineering Orientation Week itself known as the Headcom. They are members of the Federation Orientation Committee, leaders of the Education Committee and have worked with the Superhuges (see above) and HighArchs since last year to produce the best Orientation Week possible. It symbolises the sacrifices they've made to Orientation Week and that they deserve your respect. They, and the Superhuges, are responsible for a bulk of what you experience during Engineering Orientation week. Only two will be awarded this year; one to Lisa Belbeck and the other to Chris Vandeveld.

Who gets one: HeadCOM.

What wearing one means: That the wearer was selected to be part of the Federation Orientation Committee to represent Engineering, completed FOC training, developed and organized all Engineering Orientation Week programming, leads the Education Committee, oversees their events, has completed Orientation Leader Training, Huge Training and Education Committee Training and is deserving of your respect for the sacrifices they've made to Orientation Week.

Engineering Programs at Waterloo

MICHELLE BULLOUGH & DANIEL ABAD 2B ARCHITECTURE

As you have already discovered, we don't reside in Waterloo but rather in a historic building located in the heart of the old Galt neighborhood of Cambridge. The restored Riverside Silk Mill situated right along the banks of the Grand River will soon become your home sweet home.

In your first year, you'll be tossed into a whirlwind of learning. The program chal-

lenges you to develop knowledge in architectural design, building science, cultural history, and visual communication. Expect to become immersed in the world of architecture, indulge in all things design at Musagetes Library, travel to the sprawling urban organism that is New York City, and maybe get an exacto knife cut or two.

While academics are important, first year also is a time to explore your interests. Our campus has a lot of extracurriculars to choose from including the Waterloo Architecture Students Association (WASA),

BRIDGE, *Mole Magazine*, coffee houses, yoga maornings, and hockey nights. We get together with other Engineering students for Archineering events, Off Term Parties, and the Engineering Ambassador Team.

The school has a dynamic and tight-knit community, and your peers will be your best resource. The third floor studio is where ideas spark, people collaborate, and friendships form.

Best of luck, and much love from your new family at Waterloo Architecture!



KEVIN LIANG 4A CHEMICAL

Chemical engineering involves very little chemistry. This is only one of the many incongruities one will find at university. Chemical engineering involves mass and energy balances, unit operations, thermodynamics, and process control to name a few. Only a small portion of a chemical plant will consist of the reaction vessel. The rest will consist of separation systems. A chemical reaction will always produce undesired products mixed in with the desired products.

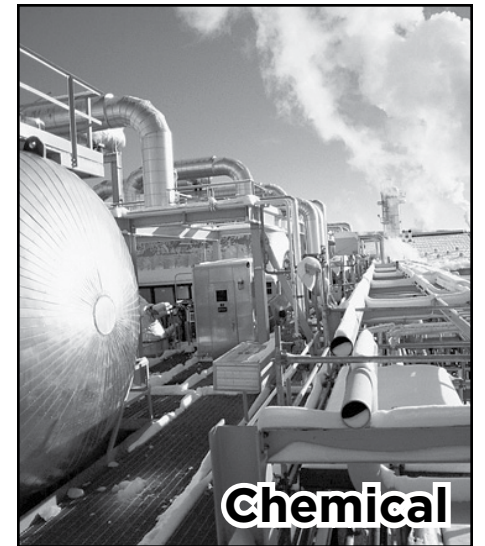
A large part of chemical engineering is designing systems to separate the desired products from the waste components. Of

course there are a myriad of other topics in chemical engineering such as bioprocess engineering.

Chemical engineers scale up the chemical and physical processes discovered and studied by chemists. No chemist is interested in the amount of heat released during an exothermic reaction; or the amount of work required for the stir plate to keep solution homogeneous. When the system is much larger, heat exchangers with proper coolant flow rates are required to keep the reaction vessel at optimal conditions.

First-year of chemical engineering is, for the most part, the same as every other engineering program here at Waterloo. Calculus (MATH 115), physics (PHYS 115),

chemistry (CHE 102), and linear algebra (MATH 116) are the core first-year engineering course and will be mainly a review of high school. The chemical engineering concepts course (CHE 100) will be the one course that differentiates chemical engineering from the rest of engineering. This course will consist of both a lecture and lab component. This course will introduce you to mass balances, unit conversions, process, and process variable. These basic concepts will be the building blocks of chemical engineering, and will be studied in more depth in future courses. The lab component is essentially a MS Excel course. This will be useful for practically every other course in the chemical engineering degree.



JON MARTIN CIVIL '13

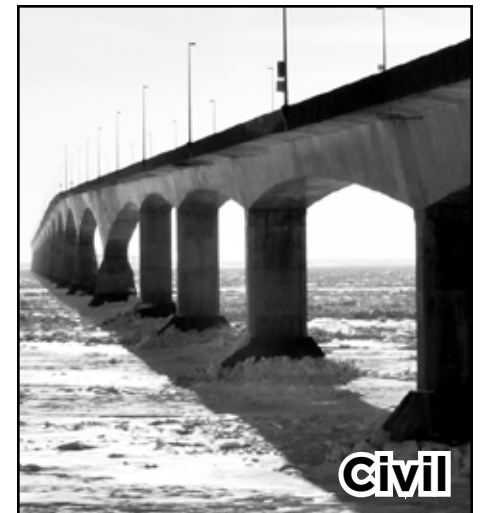
Welcome class of 2018! You have just made your first big step into the world of engineering at the University of Waterloo. The undergraduate Civil Engineering program at the University of Waterloo will provide you with a well-rounded, learning experience that you will get to develop with various classes and labs (The first surveying labs are out at Columbia Lake). Not only will the program challenge you to develop your knowledge in physics, calculus, and chemistry, you will get to apply your knowledge within numerous aspects of Civil Engineering: structural anal-

ysis, geotechnical engineering, sustainability, earth sciences, hydraulics, water quality, material sciences, transportation, pavement design, airport planning, economics, and programming.

In your first year, expect to develop the knowledge you learned in high school even further, especially when it comes to physics and calculus. Expect to be introduced to some exciting work such as surveying in the fields along Columbia Lake and testing rocks in the earth sciences lab. Keep in mind what kinds of things you enjoy because in later terms you start choosing 'technical electives' to shape your degree towards the field you are most interested in. In third and

fourth year you will get the opportunity to really shape your education by choosing the technical electives that lead to the field within Civil that you want to focus on — Structural, Transportation, Water, and Geotechnical.

All in all, be sure to get help from your TAs or professors when you need it, build strong relationships within your class, and never hesitate to talk with upper year classes — we have all gone through what you are dealing with now and we'd be happy to lend a hand. Beyond class, participate in extracurricular activities that interest you, and manage your time so that you can have an enjoyable and successful first year. And remember, Civils Always Win!



STEPHEN HOLIDAY 4N COMPUTER

Congratulations on choosing CompEng at Waterloo!

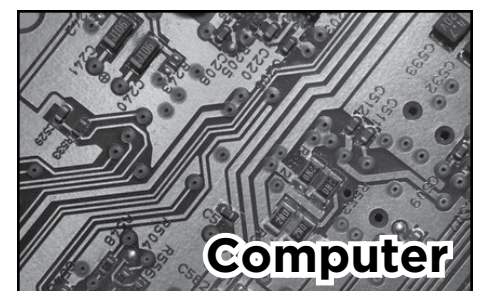
With students coming from different educational backgrounds, first-year works on getting everyone on the same page and used to university life. In first-year you

will have courses on software engineering, linear circuits, digital circuits, physics and lots of math. Keep an eye on the math, calculus has an annoying habit of appearing in courses you wouldn't necessarily expect in upper years.

Spend time learning how you learn best. This will save you lots of wasted painful hours and understand better.

This program can set the foundation for excellent co-op and full-time jobs in some really cool places like Silicon Valley, New York, Seattle and overseas. Make sure you get your resume reviewed by as many people you can. This document is key to getting that interview at that cool company.

Enjoy your frosh week and embrace the opportunities available!



AJ ROSEWARNE 4A ELECTRICAL

Welcome Electricals to the University of Waterloo and to the Department of Electrical and Computer Engineering.

First-year Electrical will be an eye-opener for most of you. You need to buckle down

and create good study skills fast if you want to make it out in five years. In first-year, you will be bombarded with a myriad of different topics. The most important will be your circuits courses, and probably your four calculus courses. These are the backbone for electrical engineering, so study them well.

Don't forget to take a break from studying,

otherwise you will go insane. A great way to do that is through extracurriculars. There are many different groups on campus that will have what interests you. Be sure to check out the engineering society to meet some new friends in different programs.

Welcome and may you have the best five-seven years of your life!



BREANNE O'GRADY 4A ENVIRONMENTAL

Hello there first-year Enviros! Many of you are still probably wondering what it is exactly an environmental engineer does. Despite what your family and friends may think,

it has nothing to do with trees. This field mainly revolves a more chemical, physical and biological side of the world around us.

In your first couple of years you will be taught the fundamentals of engineering. They may seem really unnecessary right now, especially linear algebra, but trust me

the concepts will continue to pop up throughout your years. In 1A you will learn a lot from your concepts course such as surveying, technical report writing and how to always wear weather appropriate clothes. The important thing to remember is to try and get out and have fun. Good luck!

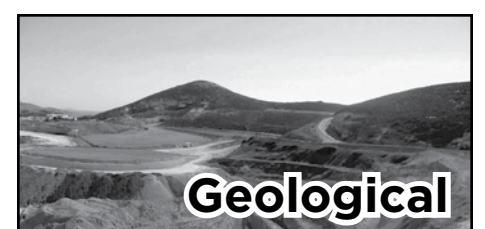


MIDORI TELLES-LANGDON 4A GEOLOGICAL

Welcome to Geo! You may have picked this program because you just love geology, or because you just love money. Either way, you're in the right spot! With

this degree you can work in consulting, environmental remediation and protection, exploration, mining, and more. Geo is a joint program hosted between the Faculty of Engineering's Civil and Environmental Department and the Department of Earth Science under the Faculty of Science.

Your courses will be a mixture from both degrees, giving you a solid understanding of civil engineering principles and many aspects of geology from geophysics to hydrogeology. The geo students, faculty, and staff will become your family for the next five years of your life!





NIKITA KUMAR
3B MANAGEMENT

Welcome to the club, Class of 2018! We are so glad to have you join us! For the new incoming students, the next few lines will help you better understand what you've just signed up for, for others it'll help you understand what Management Engineering is really about.

Management Engineering is using mathematical models and software to optimize and improve systems. That would be the fancy way to say things.

Putting it simply, Management Engineers takes systems, any system: A railway transportation system, a computer network, a soccer league, anything. Then using mathematical techniques to reduce extra costs, inefficiencies, time, etc, we find an optimal output. This is just one of the many features of our program.

There are a number of other things that we also get to work with such as telecommunications networking problems, forecasting and scheduling, design and implementations of information systems

being just a few. To assist with all the problem solving and designing involved Management Engineers study Statistics, Algebra, Programming, Software Design and some Business-related concepts.

Management Engineers are not learning to manage engineers, they take on business concepts to help provide solutions to problems that are critical to the management level of a company.

It is a great program to be a part of and we look forward to you being a part of it!



LEILA MEEMA-COLEMAN
2T MECHANICAL

Congratulations 2018 Mechanicals on starting the five most exciting years of your life! So what can you expect in your first year? Well you will learn a little bit of everything. Mechanical is very general in first-

year learning lots of physics, calculus, and materials then specializing in upper years.

First-year Mechanical Engineering will provide you with opportunities to learn about design principles, AutoCAD, NX, and basic programming. You will meet your WEEF TAs who are fantastic upper years there to get to know you and help

you succeed in your ME 100/101 course (best course ever by the way!). Lastly, even though school and grades are important, first-year is about trying new things so get out there and join some clubs, student teams, WEEF, the Engineering Society or one of the other millions of opportunities Waterloo has to offer!



ALROY ALMEIDA
MECHATRONICS '13

Welcome to Tron — the smorgasbord of engineering programs! There is something here for everyone... Don't be surprised if you suddenly realize that your interest in one aspect of the program suddenly shifts to something completely different. After

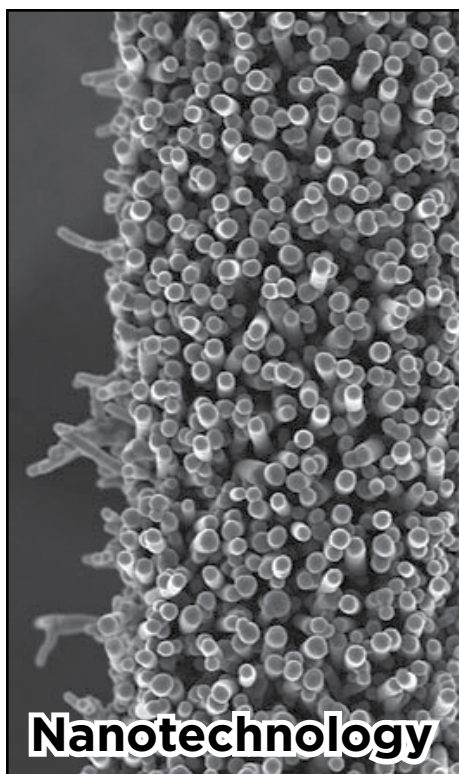
all, university is all about discovering what you want to do with your life.

Concepts will be pulled from the darkest corners of ME (material properties, heat transfer), ECE (circuit analysis, microprocessor interfacing) and SYDE (no one is really sure...). Never programmed before? Better get help and learn quick, there is going to be a lot. Don't run in fear just yet...

learning to code will land you jobs and make you a better engineer!

The best advice you will receive: Get through the first two years. It gets better... it gets real!

2B and 4A Tron students will also be on campus in the fall so come out to events and introduce yourself. You'll thank yourself later.



STUART LINLEY
4A NANOTECHNOLOGY

Arise, young Nano Engineering initiates, and begin your journey into the depths of cutting edge chemical synthesis, microfabrication techniques, electronic circuit design, nano-bio systems, quantum physics, and... math! Let me be one of the first to congratulate you on your acceptance into one of the most interesting programs available to undergraduate students! If you are anything like me, you chose nano-eng because you wanted to keep your mind open to many disciplines of science, continue your education at one of the best academic institutions in the world, and learn from some of the top professors in their respective fields. That, and 'Oh, I'm in nanotechnology engineering at the University of Waterloo.' sounds super bad-ass when you're meeting new people (especially if you're all nonchalant and stuff). Well, if these are some

of your reasons for accepting your offer to Waterloo, I assure you that you won't be disappointed. From biochemistry to semi-conductor physics, you'll get amazing exposure to some of the most important technologies in today's world, and a good overview of the science behind all of it. Your first year in the program will introduce you to calculus, numerical techniques, and some basic chemistry, physics, and materials science to give you a good knowledge base to build upon for your future years in the program. The real fun starts in your 2nd year with biochemistry, electromagnetism, device physics, and quantum mechanics.

Some small pieces of advice I have for you as you enter this next stage of your life are as follows:

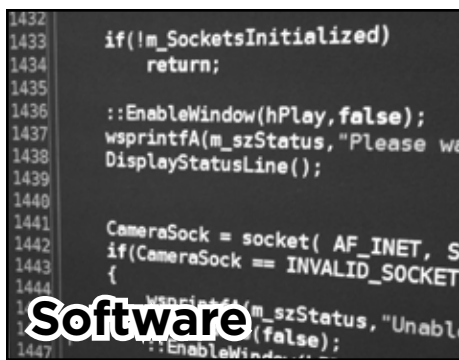
Talk to upper-year students (mainly 'cause they're lonely) because we love to answer your questions and might even be able to help you with something!

Don't spend ALL of your time study-

ing. Believe me, I love grades, but don't focus so much on school that you miss out on everything else that you could be experiencing. Come out to EngSoc events, get involved on a design team, talk to a professor about doing a URA (Undergraduate Research Assistantship), join the Eng Jazz Band, or play on an intramural sports team. Whatever your interests are, university is a place to explore them.

Don't slack off. Contrary to my last point, make sure you keep up with your studies. One way to really ruin a term is to try and cram all of that information into your head the night before the exam.

I could go on, but I think you get the gist of it. If you have any questions about the program, or student life in general, talk to your orientation leaders, and come out to our Nano barbeque held every term to meet more of the upper years. I look forward to seeing you around and I know you'll love your first-year in Nanotechnology Engineering.



GURJANT KALSI
3B SOFTWARE

Q: How is software engineering like a softball?

A: Neither is soft.

Welcome to Software Engineering (SE), the program that's half math, half engineering, and all of both! Here you'll learn about everything from the design of complex software systems down to the

XOR gates that make them possible.

First-year will consist of a healthy mixture of engineering and math fundamentals. You'll notice that your classes will most closely resemble electrical and computer engineering's lineup with a little more focus on programming and math. As you progress through SE, you'll find that your courses become more distinct.

As a member of a stream eight program, you'll have a full eight months to

get comfortable in Waterloo before starting your first of (approximately) six co-op workterms — don't worry, JobMine usually has a healthy portion of software jobs.

If you have any questions, feel free to ask an upper year student and remember to check out all of the Software Engineering resources in the second level of the Davis Centre (labs, offices, lounge, etc.). Good luck, and have fun!



OWEN COUTTS, MYLES TAN & MEGAN MCNEIL
4A SYSTEMS DESIGN

In your first week of school, you will be taught to memorize the "definition" of Systems Design Engineering (SYDE). This definition involves key words like holistic, multidisciplinary and global approach, but at the end of the day, the definition of Systems Design Engineering is what you decide it to be. SYDE is "choose your own adventure engineering" with the most options of electives and specializations within the engineering faculty. With a solid technical background, Systems gives you the ability to

go places only limited by your imagination. Welcome to the adventure of a lifetime!

For your first-year, you will be learning the traditional engineering basics, but you will also have two specialty design courses. Be aware that all core courses are SYDE specific, which means that most outside sources of tutoring won't be applicable to your course load. With that being said, your best resource for help is your classmates. You will meet the most amazing people in your class from different backgrounds and interests with whom you will be spending the next five years together on the sixth floor of E5. Systems is known as a tight-knit program

for a reason!

With a wide selection of co-op jobs, SYDE students have worked in ergonomics, project management, software development, user interface design and even abroad with fellowships within EWB. Systems students excel in finding the best jobs in fields across engineering.

All in all, the engineering is tough and Systems Design presents its own challenges. If you don't know what you want to do, don't worry. You will figure it out through your co-op jobs, your courses, and

your experiences over the next five years. Good Luck!

The History of Orientation Week at Waterloo

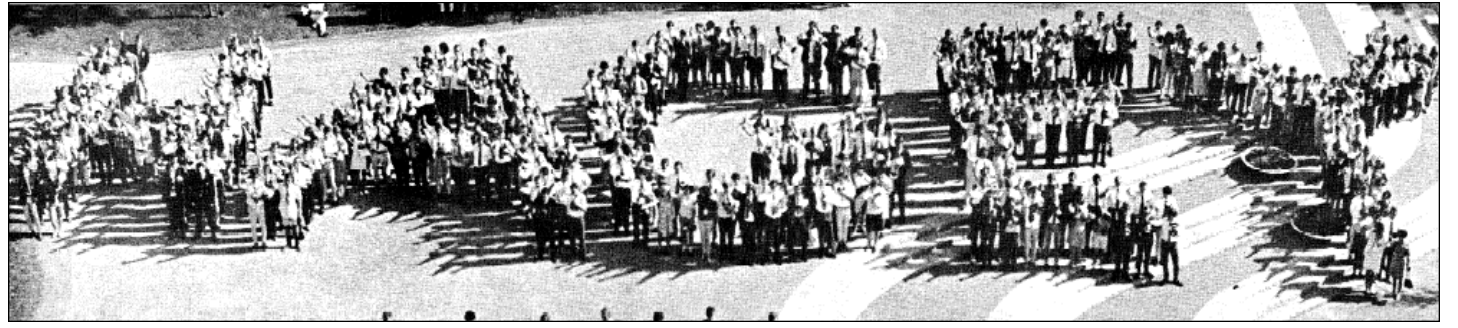
ROSS RICUPERO
CIVIL '09

The oldest recorded discussion of Orientation Week at the University of Waterloo is from the October 13, 1961 edition of *The Coryphaeus*, the University of Waterloo's first student newspaper. It's a simple article that welcomes freshman engineers to the school and the Engineering Society. It also gives thanks to Dave Smith, chairman of the Initiation Committee (Orientation used to be called initiation) and announces the Initiation Dance as part of WA-WA-WEE '61 (The old name of Warrior Weekends, an event that ran up to 2011).

The September 27, 1963 edition of *The Coryphaeus* gives even more details on "initiation" with an article discussing the school-wide scavenger hunt (apparently they acquired things like wagons, tractors, hay bales, snow fences and pictures of someone named Brigitte Bardot), a game to measure the length of a city block with hotdogs, a challenge to make a line of pennies stretching from Kitchener City Hall to Waterloo City Hall (which is apparently approximately 140,000 pennies), the (seemingly) annual 'Froshman Hop' dance, and some unknown event called the 'Hootenanny'. Each faculty organized their own Initiation program and worked with the Orientation Committee, which ensured the individual programs worked across the school.

In '64, '65, and '66 even more traditions had started to form. First year students from Arts, Science and Engineering (the only faculties at Waterloo at the time) were all awarded 'beanies' or caps at the beginning of (the now called) Orientation and the cheer of "I'm a dirty rotten dead horse and I stink!" was used throughout the week, accompanied by students falling to the ground, laying on their back and sticking their arms and legs in the air. The Frosh Queen competition, in which 'Freshettes', or female first-year students, competed to be elected to the position complete with sash and crown, became a major event. The penny-drive also became Slave Day, where first-year students would be sold to members of the community to help them with whatever they choose, or for charity purposes.

In 1967, Stewart Saxe, a political science student and head of the Orientation Committee, re-imagined the entire week and introduced the big-brother concept. All first year students (there were only 2,200 in 1967, a third of the 6,000+ we expect this year) were divided into groups of ten which were overseen by Archons, a single upper-year student leader, which stayed with the group the entire week. This year continued the method



of each society running their initiation programs, and the Orientation Committee overseeing the entire thing.

1967 was also the first year that an aerial photo from Orientation Week was published. The 360 strong group spelled "Hagey" across the Arts quad to salute then-president J. G. Hagey (the same Hagey that Hagey Hall is named after).

It was during the late 1960s that the bulk of Orientation Week was moved to the control of the Federation of Students (FEDS). While the student societies still planned and ran programming for their specific faculty, many of the larger events would be planned by FEDS. It's from this point throughout the 1970s that FEDS took the Orientation Week of the 1960s and made it into a month long Orientation program with varied social or educational events each day from the start of September to the end. This included many high-profile concerts such as Meatloaf, Gordon Lightfoot and Ike and Tina Turner, as well as speeches from major political figures, cabinet ministers, MPPs and radical leaders.

While the much expanded programming offered more choices for incoming students, it was during this time that student apathy and low attendance began to take its toll. Concerts lost money (the Ike and Tina Turner concert lost \$6,000 in 1972, which is over \$30,000 today accounting for inflation), speeches went unattended and acts cancelled or simply didn't show. Reviews of the Orientation program varied wildly from condemnation to enthusiastic.

It was during this time that the Engineering Orientation program moved away from the Slave Day charity and began running the Bus Push charity (which has continued annually since then in the Winter term). 1969 also saw the Engineering Stag event of Orientation Week, which was little more than a drunken strip-tease for first-year students.

It wasn't until 1978, when the LLBO took dispute with the University's 'beer tents' that programming needed to be reduced and concerts rethought. The LLBO refused to license the outdoor tents that were part of Orientation Week in years past, reducing the amount of money that the Orientation program had

to use, preventing headline concert acts and major guests.

Then began the dark years (or the years where written records become spotty). It's expected that Orientation Week continued this way for the 1980s and early 1990s. Student societies continued running programming for their faculties, and the Federation of Students continued running the overall program. It was during an unknown Orientation Week during the 1980s that the Education Committee was founded, and that the engineering hardhats became a major symbol. These have stayed as key components of Engineering Orientation Week since then. The oldest record of the Education Committee is an Orientation Week video from 1988 and hardhats could be over a decade older than that.

At the end of the dark years, Engineering Orientation Week was a tight, multi-day program packed with events. Incoming students would go through a program similar to the program we have now, but that had very distinct differences. In 1993 a Waterloo Orientation Manual was produced and distributed to the groups running the faculty programming and soon after a major part of Orientation Week today was founded; the Federation Orientation Committee (FOC). The goal with FOC was to have better collaboration between the independent groups running various Orientation Week programming and the Federation of Students, allowing a more efficient Orientation Week overall. This started the process of Orientation Week becoming more regulated and controlled, something that would take the unorganized month-long Orientation programs of the late '70s and '80s, to the smaller, week-long programs of the '90s. By 1996, a schedule that resembles the modern day Engineering Orientation Week began to emerge: Aerial photos were taken (these can all be seen in the POETS lounge), they earned their hardhats, and they all met the Dean. However, they also competed in chariot races, paraded through town and had organized off-campus parties, events long since banned or modified.

It was during 1997 and 1998 that a new program started to address major concerns highlighted in an Orientation Student Survey



conducted in 1994 and 1995. This survey concluded that there was a dangerous undercurrent of behavior across all Orientation programs. From discriminatory chanting to exclusive programming and a dependence on drinking, it was seen that there was a fundamental problem with Orientation Week; the leaders themselves. There was no formalized Orientation Leader training program for leaders to go through, and there were few checks and balances on the actions of these leaders too. People simply ran Orientation Week like it had been run for the year they went through it and every year before that.

It was because of this that the Provost's Advisory Committee on Orientation (PACO) was founded, and PACO training was implemented in 1998. This training, mandatory for all Orientation leaders, covered things like drinking and drugs, inclusivity and non-discrimination. While some students cried out that this was gutting the Orientation Week they knew and loved, it ultimately led to the modern Orientation Week we have now, which many believe to be better than ever before.

With the double cohort of 2003, a large percentage of students were now entering university at age 18; younger than the legal drinking age. This became a problem as many planned events during Orientation Week were 'wet' events where alcohol was served. A controlled environment was implemented, with 'beer gardens' allowed at certain events and each organizing group allowed to have a single 'wet' event for their faculty or residence.

By 2004, PACO was dissolved and we were left with Orientation Leader Training, the modern version of PACO leader training. 2004 was also the last year that Orientation Week officially included alcohol with a beer garden at the Saturday night Toga party. Once Orientation Week 2004 closed, alcohol wouldn't be part of the week again.

In 2012, Orientation Week is over 50 years old, involves over 8,000 first-year students, 1,000 upper year students, has a budget in the hundreds of thousands, and the support of countless sponsors and contributors. While it may be completely different from the Initiation of 1961, Orientation Week 2012 has built upon the past decades; all of the conflicts and problems, changes, successes and failures have been rolled into the week.

While it may not be perfect, it is a continuation of a tradition started soon after the University of Waterloo was founded, and it represents the unconventional history and future of this school.

(Editor's note: Some minor modifications made to the original article by Ross to keep the article current.)

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Don't Let Schooling Get in the Way of Your Education

ROB REID
EWB JUNIOR FELLOW

First year explorers of the engineering faculty at Waterloo: Welcome!

My name is Rob, and I'm now starting 4A Environmental Engineering. I'm currently writing this article from Kumasi, Ghana, where I've been working this summer for the tech startup/social venture *votomobile.org*, a co-op placement coordinated through Engineers Without Borders (EWB) Canada. I won't spend too much of this space advertising EWB, but I'll encourage you to check out our information booths that will be around this week, our first General Meeting which we'll have posters for as well as try to advertise in your classes, or stop by our office in the Student Design Centre in E5 Room 2000.

If you've ever seen the movie version of Pink Floyd's *The Wall*, you'll recall the play-dough machine school/factory scene during *Another Brick in the Wall Pt. II/Happiest Days of Our*

Lives. Although Waterloo isn't exactly like this, and I can name off a lot of really great profs I've had who are into learning, in a lot of ways our education system does a better job of preparing you for a pretty conventional, establishment job than encouraging you to do something truly original. Some students in Quebec got pretty upset about this last summer (I happened to run into the march on the way home from a bike polo tournament, and it was incredible: parents with babies, old people, people in wheelchairs marching, people waving flags and cheering them on from their balconies, ah, solidarity!)

The point is, you're young, you have your whole lives ahead of you, and a great jumping point to make basically anything happen at Waterloo. This town is in the top 20 in the world for startups according to the Startup Genome's Startup Ecosystem Report 2012, has a great art scene, awesome nature closeby, packed full of energetic and optimistic young folks like yourself. Whether engineering is the place you want to do something incredible, or

you're into art, or politics, or whatever, there are opportunities and supportive communities all around you. It can be easy to forget when you're on you 53rd consecutive hour of wakefulness under a crust of Doritos dust and your own nervous sweat, but accomplishing something remarkable should be what it's all about. As my cool uncle Greg, puts it: Don't let your schooling get in the way of your education! (I'm sure he ripped this off from somewhere, which is not okay. Note Policy 71 well, first-years!)

Try to think of someone you really admire for a minute. Now ask yourself, did they get there by avoiding conflict and doing what other people told them? No! They had some spark of craziness which they were able to carry through all the normative effects of society to forge something that improved people's lives, gave people hope, and lit a corner of human possibility for us to peer into. Did Nikola Tesla work hard to get on the dean's list, get the Queen Elizabeth II scholarship, and always get

enough sleep? Did Martin Luther King, Jr. tip-toe around politicians? Did Occupy Wall Street pack up because people didn't get what they were all about? Your officially required and institutionally recognized accomplishments are nice, but probably won't make you feel like yourself or spur you on to do something truly innovative.

As someone passionate about learning about the systems we've created to allocate productive resources and political power, I'm passionate about spending a lot of time with EWB working on that, but I know it's not for everyone. In whatever way you find, I would urge you to challenge yourself to think beyond the classroom in your years here, do something that scares you, do something you think is maybe just possible, do something you're bad at, do something that makes you feel like yourself, and do something that contributes to the sustainability of humans as a creative community that accomplishes amazing things. Have a great first term, and keep the dream alive!

WatPD — Your Online Co-op Courses

KEVIN LIANG
4A CHEMICAL

WatPD is a series of online courses all co-op students must take during their co-op terms to develop professional skills. Both PD20: Developing Reasoned Conclusions and PD21: Developing Effective Plans must be taken by engineering students during their first two work terms, respectively. PD20: Developing Reasoned Conclusions is an introduction to critical thinking and communication in the workplace. PD21: Developing Effective Plans is an introduction to workplace problem formulation and problem solving strategies. After the core PD courses are completed, students will be able to choose three additional PD courses, out of seven options. These options are:

- PD3: Communication
- PD5: Project Management
- PD6: Problem Solving

- PD7: Conflict Resolution
- PD8: Intercultural Skills
- PD9: Ethical Decision Making
- PD22: Professionalism and Ethics in the Workplace

These courses are designed to improve students' employability and their workplace productivity. For example, PD3: Communication covers many types of communication from proper behaviour during team meetings to effective email writing. PD5: Project Management introduces students to basic management science concepts. Topics in this course include basic project management techniques and practices such as planning, proposing, scheduling, budgeting, supervising, delegating and setting priorities. Full course descriptions can be found at uwaterloo.ca/professional-development-program.

Since these courses are to be taken during the work term when students have full time

jobs the work load is light. Every course is a little different but they typically consist of weekly readings, audio, and/or video presentations with an associated quiz or assignment. Each week's work can typically be completed within two hour. Most PD courses also offer a set number of late days which can be used to submit assignments past their scheduled deadlines.

The entire course will be available at the start of the term and working ahead of the set deadlines is not uncommon. Some students opt to complete the entire course in a single weekend and forget about it. In order to pass most PD courses, a student must achieve a final grade of 50% or greater. This may not be true for all PD course, you

can check the passing requirement with the course's staff during your work term. These courses are pass/fail and will appear as CR (credit) or NCR (no credit) on a transcript. Engineering students have six work terms and have to complete five PD courses, so in the unlikely event that a student does fail a PD course, they will have another chance to make it up.

These courses try to be very broad in their scope and thus will apply to a variety of work environments. PD courses augment the transition from the classroom to the workplace. A majority of the topics can be naturally picked up after long exposures in a professional environment; these courses accelerate this appreciation.

Engineering and Co-op

ERIN MATHESON
CHEMICAL '13

Now if there's one thing about Waterloo you've heard about — it's the co-op program. Waterloo has the largest post-secondary co-op placement program in the country, and it's often the reason why so many students choose Waterloo over other university programs — I know that's one of the reasons I originally wound up at Waterloo! Although everyone's co-op experience varies greatly, here are some tips and tricks I gathered over my five years.

Starting out in the co-op system can be a really intimidating experience, but that's okay! During your first round of applications, you and your classmates will be (for the most part) applying to your very first engineering-related jobs. It's a pretty daunting task! I know when I graduated from high school, I had worked at a Second Cup making lattes, and had a summer of work at a summer camp teaching kids how to rollerblade. Needless to say, when I was applying to research jobs in environmental and pharmaceutical fields, I had NO relevant experience. If you can relate to this, no need to worry, there are tons of resources that can help you!

When you first apply for a co-op job will depend if you are in a four-stream or an 8-stream class. If you're in an 8-stream class, you'll be applying for jobs in the Winter term and be working next Summer. If you're in four-stream, hold on to your hats because you'll be applying for jobs in a few weeks! First step to getting a great job: a killer resume. In your concepts class, they'll usually

cover some basics regarding how to put together a good resume and how to upload it to our online job matching system; JobMine. I'd recommend spending a little more time on it beyond your class though. The Engineering Society runs resume critiques the week before applications open, and it's a great opportunity to get experienced upper years to check out your resume and give you some job hunting tips. Check out the Engineering Society website for more information about this awesome service.

The next big step in the whole process: the interview. There are lots of different schools of thought on how to interview well, but my rule is always dress well, make sure you don't have bad breath, and be yourself! Interviews are always a lot easier when you're relaxed, and your interviewers get a better idea of the type of person you are. If it's been a while since your most recent interview, check out the Engineering Society's interview skills workshop to brush up!

Finally, the last piece of advice I can give is to take chances when it comes to co-op. If I could have changed anything about my co-op experience, I would have been more willing to try working in a new city earlier on. It wasn't until my third year that I left Ontario to work in Calgary, Alberta, and I loved every second of it! Moving to a new city where you don't really know anyone, or going after a new job in a different field can be really intimidating, but it can also lead to an unforgettable experience. This is the only time when you can truly sample jobs and cities on a four-month basis, so why not be daring and try something new?

IT'S YOUR LAST CHANCE!

Frosh Mentor applications close SEPTEMBER 15TH!

Get matched with
an upper year
student in your
program to guide
you through your
first year as a
Waterloo Engineer!



Have your questions answered,
attend special events, and more!

YOU WONT WANT TO MISS IT!

bit.ly/froshmentor

engsoc.uwaterloo.ca/firstyearwelcome

Frosh Week Event Schedule

Engineering schedule for On-Campus Residence. Software differences noted below.

2
MONDAY

3
TUESDAY

4
WEDNESDAY

9:00 a.m.

9:30 a.m.

10:00 a.m.

10:30 a.m.

11:00 a.m.

11:30 a.m.

12:00 p.m.

12:30 p.m.

1:00 p.m.

1:30 p.m.

2:00 p.m.

2:30 p.m.

3:00 p.m.

3:30 p.m.

4:00 p.m.

4:30 p.m.

5:00 p.m.

5:30 p.m.

6:00 p.m.

6:30 p.m.

7:00 p.m.

7:30 p.m.

8:00 p.m.

8:30 p.m.

9:00 p.m.

9:30 p.m.

10:00 p.m.

10:30 p.m.

11:00 p.m.

11:30 p.m.

MOVE-IN / CHECK-IN
Residence and Physical Activities Complex

* Also on Sunday, September 2.



WARRIOR WELCOME
Various Locations

RESIDENCE PROGRAMMING
Various Locations



HQ TIME / MEET THE DEAN / VIRTUAL TOUR
Colour Group Headquarters



DEPARTMENT LUNCHES
Various Locations

EARN YOUR HARDHAT
Various Locations



AERIAL PHOTO
St. Paul's Green

TRICK OR TREAT / SINGLE & SEXY
Grad House Green / Hagey Hall



CHOOSE YOUR OWN ADVENTURE
Various Locations



SE 101
Math and Computer 1085



ELPE (A-Q)
Physical Activities Complex



ELPE (R-Z, SOFTWARE)
Physical Activities Complex



FACULTY MIXER
Student Life Centre



Engineering

Aerial Photo

This is one of the only times until graduation that the entire class of 2018 will be in the same place for a photo. The photo design will reflect the theme, All Hallow's Week, and the finished product will hang in POETS for the duration of your undergraduate career and beyond!

ComEng

Hosted by EngSoc, join in for a night of hilarious comedy by professional comedians as a way to relax before class the next morning. Meet your new upper year friends and watch the Orientation Week awards show where we announce the winners of the week.

Department Lunch

This is a great opportunity for you to meet your fellow classmates, upper year

students in your program, as well as your TA's and Professors. This is a great chance for you to learn more about your department, get useful tips on how to succeed, and have any questions about your program answered.

Software: Faculty Lunch is held in place of Department Lunch during the ELPE A-Q timeslot.

Earn Your Hardhat

Earning your Hard Hat is one of the oldest traditions in Waterloo Engineering Orientation. The Hard Hat is a prestigious item awarded to incoming Engineering Students and is worn with pride by all. This is an event you won't want to miss out on, you'll be needing that hard hat for the rest of the week.

Eng 101

This is your chance to be introduced to the academic world of Engineering at the Univer-

sity of Waterloo. Faculty members along with a student panel will provide information and answer any questions you have about academics, co-op, counselling, and the fine balance of school and socializing.

EngSoc Day

The Waterloo Engineering Society will play host to a fun afternoon of low-key activities. Come to POETS, the engineering student lounge, and see what the Engineering Society can do for you!

HQ Time & Meet the Dean

During this time you will get the chance to come in to your teams Headquarters and meet your fellow first-years as well as your leaders. You will get an intro to the week as well as a chance to meet the Dean of Engineering, Pearl Sullivan. You will also get the chance to participate in fun icebreakers to get the day started and to see a virtual tour of the Engineering Campus.

Junkyard Wars

Our flagship event, Junkyard Wars, is exactly what its name implies. Colour groups are challenged to solve problems and complete challenges using only recycled materials and scrap parts. This event is the true test of ingenuity, creativity and plain old smarts.

Meet the Tool

This is a must see event where you will get to meet the Engineering Mascot 'The Tool'. Live it. Love it.

Software: You will partake in the first Meet the Tool session, followed by Earn Your Tie.

Scavenger Hunt

The infamous Engineering Scavenger Hunt is where the colour groups have their last chances to try to gain points and win the overall competition of the week. This is the final flagship Engineering event and is sure to not disappoint!

■ ELPE

■ Software

■ Engineering

■ Cross-Campus

5
THURSDAY

JUNKYARD WARS
Village 1 Green



STUDENT TEAMS LUNCH
Village 1 Green



ENG 101 / MEET THE TOOL / DEPARTMENT HANGOUT
Various Locations



TRICK OR TREAT / SINGLE & SEXY
Grad House Green / Hagey Hall



THE NIGHTMARE BEFORE FRIDAY
Various Locations



6
FRIDAY



BRUNCH

EXPERIENCE WATERLOO



SCAVENGER HUNT
Colour Group Headquarters



7
SATURDAY



GRAND FINALE: BLACK AND GOLD DAY
Warrior Field / Columbia Icefield



GRAND FINALE: MASQUERADE
Student Life Centre / BMH Green



8
SUNDAY



ENGSOCC DAY / CHARITY HEADSHAVE
Carl Pollock Hall Courtyard



COMENG
Hagey Hall



Trick or Treat

During Trick or Eat you'll learn about all the resources on campus while completing a variety of games and earning points for your team.

Cross-Campus

Choose Your Own Adventure

This evening provides a wide range of activities, all across campus. Check out some hip-hop moves or ballroom dancing; play soccer or Ultimate Frisbee, and be sure to stick around for the showcase events — a hypnotist, a bonfire concert, an improv performance, and a dance! Don't forget to visit the event where we have all the supplies needed for you to create your mask for the Masquerade party at the Grand Finale of Orientation Week!

Faculty Mixer

Meet students from all six faculties at the

Faculty Mixer.

Grand Finale: Black and Gold Day

Our Grand Finale Saturday kicks off Black & Gold Day, an annual Waterloo tradition. Come dressed in Black & Gold to show your school spirit and start the event off at the pre-game party. Join us for a carnival featuring inflatable games, a BBQ, and a chance to out-cheer the other Faculties! Move on over to Warrior Field to cheer on the Waterloo Warriors Varsity Soccer teams as they take on the McMaster Marauders — Women's at 1:00 p.m. and Men's at 3:15 p.m.

Grand Finale: Masquerade

Finish Orientation in style, and join us for a night not to be forgotten: Masquerade! This casino-themed Masquerade features live entertainment including acrobats, magicians, and caricaturists, a dance party, mocktails and a mock casino. Play your cards right, and it could be the best night of your life!

Move In / Check In

It's time to get settled into your new housing community. If you're living off campus, take some time to move in, then head over to campus. If you're on campus, let our Orientation leaders help move your belongings into residence. Bring your family along and send them to the Tips for New Waterloo Families session while you pick up your WatCard and check-in for Orientation.

Residence Programming

Meet your fellow floormates and your Don as you learn more about your residence community and take part in your first floor dinner.

Single & Sexy

An original drama production by the University of Waterloo, this hilarious play deals with the challenges of living away from home and out from under the parental eye for the first time. Issues explored include sexual harassment, orientation, sexual assault, trans-

mitted infections, pregnancy, love and succeeding in University. With several TV and music video farces, the play promises not only a humorous view of student life, but also delivers crucial information about the topics discussed and how to find help regarding those issues.

The Nightmare Before Friday

Thursday night is a multifaceted evening of entertainment, with varying levels of "haunting". There will be a spooky themed dance, a coffee house where you can show off your talent, a comedy show, and for a true scare check out our haunted house!

Warrior Welcome

Kick off Orientation and celebrate your first day at the University of Waterloo at Warrior Welcome, your official welcome to the University of Waterloo! Enjoy live performances, special guests, and learn more about what the week ahead has in store!



Engineering Society 'A' Executives (from left-to-right): David Birnbaum, President; Brendan O'Hanlon & Annamaria Reda, VPs Internal; Leila Meema-Coleman, VP External; Kevin McNamara, VP Finance; Drew Dutton, VP Education.

What is the Engineering Society?

DAVID BIRNBAUM
PRESIDENT 'A'

The University of Waterloo Engineering Society (or EngSoc as it is commonly referred to) is the official representative body for all 6000 engineering undergraduate students at the University of Waterloo. It is comparable to your student council in high school, except it has much more to offer.

Headed by a set of executives, it works on your behalf with the Faculty of Engineering, student union, external engineering groups, and many more. It is their job to make sure that you are getting the most out of your five years here.

In addition to the representation, the Society offers many different services and events. More information about those can be found in this issue of *The Iron Warrior*, as well as on the Society website.

The Engineering Society executive consist of a President, VP Internal, VP External, VP Education and VP Finance. They are all introduced in this paper as well, but as a whole the executive team functions to make sure the Engineering Society runs effectively and efficiently, to serve you all as best as possible.

More important than the VPs and the

President is the Council. The Engineering Society Council is the group that makes all of the decisions for the Society, whether that be a stance on how the engineering students feel about a given topic, or how to spend the \$60,000 budget each term.

Council is composed of two representatives from each of the engineering classes in school, together sharing one vote.

Their job is to attend the Council Meetings (every other Wednesday) and vote on their class' behalf. They also are to report back to their class about what is going on in the Society, including the awesome events and services that are coming up. Council meetings are open to everyone! And showing up at the meetings is definitely the easiest way to get involved in the Society.

Interested in being a class rep? The EngSoc executives will be coming around during the first two weeks of class to run elections for the position. It is a great way to get involved and gain some experience early.

The Society is always looking for new initiatives and improvements it can make, so please do get involved, or just let us know what you would like to see! Drop by the EngSoc office any time and pitch an idea, or just say hi!



Engineering Society Services

DAVID BIRNBAUM
PRESIDENT 'A'

Come out and show off your Engineering pride.

Student Deals/Discounts

The Society is very proud to offer student deals and discounts in partnership with local restaurants. Come on by the EngSoc Office, CPH 1327, and pick up your FREE student deals sticker. All you have to do is show the sticker at participating restaurants, and get discounts! It really is as good as it sounds!

Resume Critiques

Each term there are thousands of students at Waterloo looking for co-op jobs, but not to worry! The Society runs numerous resume critiquing sessions where you will get one-on-one time with an upper year student and they will go through your resume with you to make sure it is tailored to the type of engineering career you want. Keep an eye out for advertisements of dates and times, this is one service you do not want to miss!

Exam Bank

Midterms may be a stressful time, but we try to limit that stress by having an enormous online exam bank, where you can browse and search hundreds of past exams to help you study. The online bank makes it super easy to get a sense of what your first university exams will look like, and will enable you to earn that 100%.

The Engineering Society is proud to offer as many amazing services as it currently does, and here is just a brief summary so you know how to get around and fully utilize everything that is offered.

C&D

The Society runs a coffee and doughnut shop, with the lowest prices on campus. Just head over to Carl Pollock Hall (CPH) for low cost coffee and treats! Please note that it is cash only.

EngSoc Office (a.k.a. "The Orifice")

The Engineering Society Office, also located in CPH, is a great place to get cheap printing, photocopying, and report binding. Trust us when we say that cheap report binding will be a great thing for all of you in the near future. Please come by and check out what else the Orifice has to offer, and to say hi to all of the lovely Engineering Society executives.

Novelties

Engineering Novelties is your one stop shop for all you could want in Waterloo Engineering SWAG. Located between the C&D and POETS, it is typically open Monday to Friday from 11:30 a.m. to 1:30 p.m. We have everything you need from keychains to apparel to glassware.

Welcome From the Engineering Society Executive

KEVIN MCNAMARA & PETER ROBERTSON
VICE-PRESIDENTS FINANCE

Hey Class of 2018!

We are Peter Robertson and Kevin McNamara, the Vice-Presidents Finance (VPF) of Engineering Society 'B' and 'A', respectively. Our main jobs include allocating the \$15.01 Engineering Society Fee that every undergraduate engineering student pays per term ("the budget"), allocating EngSoc Sponsorship for student teams and clubs, allocating the Engineering Society Capital Improvement Fund (ECIF), and managing the Engineering swag store, Novelties. All of you will get to know Peter in the Fall term, as VPF of 'B' Society, and for those of you in 8-stream programs, you will meet Kevin in the Winter as VPF of 'A' Society.

The primary goal of the VP-Finance is to manage all of the Engineering Societies funds, which includes creating a termly operating budget based on the Engineering Society Fee. This budget goes towards

running all of the awesome events and services that we have to offer, many of which are outlined in this newspaper. Each term, directors (the people who run all of our events and services), submit budget proposals to us, and it is then our job to create a budget that will allow all of these events and services to run smoothly. This budget is typically presented at EngSoc Meeting 2, and must be approved by our Council.

Another thing that the VP-Finance is in charge of is Sponsorship. Each term, a certain percentage of the operating budget is allocated towards Sponsorship. Any student club or team on campus is able to apply for sponsorship. This can be for just about anything, such as parts to build a cool robot, or money to purchase a stage package for a conference event. The teams and clubs present to a committee made up of the VP-Finance, and six undergraduate students at large. Following these presentations, the committee decides how to allocate the money, and it is then approved by our Council, typically at meeting four or five.

We also chair the Engineering Capital Improvements Fund (ECIF) Committee each term. ECIF is a fund that has a termly amount contributed to it from the EngSoc budget, which is then used to make purchases to improve engineering student life at Waterloo. Items such as new furniture for POETS (our student lounge), or upgrading supplies in the Engineering Society Office have been purchased through this fund. The fund is always taking applications, so if you have something that you think we should purchase, let us know!

Another large part of our portfolios is managing the Engineering Novelties Shop, which is located in the Carl Pollock Hall Foyer, right beside POETS. This shop is open from 11:30 a.m. - 1:30 p.m. on weekdays, and is the only place on campus to get Waterloo Engineering swag. Everything from sweaters, mugs, patches, belt buckles, and even pajama pants can be purchased, and there's lots of selection, so make sure to drop by on your lunch one day. (Note: the shop is cash only, so be sure to stop at the ATM before

you come by!).

There are a ton of awesome events and services that the Engineering Society runs each term, and without the \$15.01 EngSoc Fee that every undergraduate engineer pays, a lot of them would not be possible. We encourage you to check out some of the awesome services that we offer. Head over to POETS on your first day of class, grab a coffee at the Coffee and Donut Shop (CnD), come to the Beginning of Term (BOT) Party, or stop by the Engineering Society Office to see everything that is going on.

Don't forget to check out our website, engsoc.uwaterloo.ca to see all that we have to offer. If you ever have any questions or ideas about anything related to finances, or the Engineering Society in general, don't hesitate to ask one of us. To contact us you can email Kevin at vpfinance.a@engsoc.uwaterloo.ca, or Peter at vpfinance.b@engsoc.uwaterloo.ca. We hope that you have an awesome Orientation Week, and we hope to see you at EngSoc Meeting #1!



Engineering Society 'B' Executives (from left-to-right): Yasser Al-Khder, President; Catherine Declaro, VP Internal; Kristina Lee, VP External; Peter Robertson, VP Finance; Megan McNeil & Orysia Soroka, VPs Education.

Welcome From the Engineering Society Executive

DAVID BIRNBAUM & YASSER AL-KHDER PRESIDENTS

Hello Class of 2018! We are your Engineering Society Presidents: Yasser Al-Khder (B-Society) and David Birnbaum (A-Society.) We are super excited that you are here, and can't wait to meet all of you!

You will be sure to see a lot of us in the coming week, and term, and we encourage you all to come and talk to us whenever you get a chance! We will be around all of Orientation week, please do say hi. We will be the two wearing the white hardhats.

During the term, please feel free to stop us with any questions you may have about school, social events, services we offer, or just the Society itself. We can often be found in Carl Pollock Hall (CPH), especially the EngSoc Office in CPH 1327) and our Engineering Student Lounge, POETS in CPH 1337.

We can also quite often be found at all

DREW DUTTON, MEGAN MCNEIL & ORYSIA SOROKA VICE-PRESIDENTS EDUCATION

Welcome Engineers of 2018! You are about to embark on your journey through a diverse and engaging educational experience on the road to becoming a Waterloo alumnus!

As Vice-Presidents Education of the Engineering Society (A-Society: Drew Dutton, B-Society: Orysia Soroka), we are here to represent the academic interests of the engineering undergraduate student body. This includes student representation on a number of committees: the Co-operative Education Council (CEC), the Co-operative Students Council, the Co-op Working Group, and the Senate Undergraduate Council. As well as representing the engineering student body by attending all of these meetings, we will do our best to relay the information back to you and make it as accessible as possible. To hear about the latest educational news, you can read *The Iron Warrior* for an update, or attend the biweekly engineering society meetings. Also, never hesitate to come and visit us when we are in the Orifice (the Engineering Society Office) or to send us an email. This fall to contact Orysia, the VP this fall, do not hesitate to email vpeducation.b@engsoc.uwaterloo.ca. To email Drew, the VP for the winter term, email vpeducation.a@engsoc.uwaterloo.ca.

As can be seen, a great amount of time is spent on co-op related agendas, since all engineers will spend almost half of their degree on work term. Typical topics addressed are employment rate of the various departments, initiatives to increase these rates, and initiatives to reach new employment markets. Of late, a particular empha-

sis has been placed on the development of 8-month work terms for some departments. This is an example of something that will likely be an on-going topic of discussion over the duration of your stay at Waterloo, and something that we will be working hard towards to improve, and to help the student body see changes that they are interested in.

Earlier this year Co-operative Education & Career Action (CECA) announced the planned release of our new employment screening software with Orbis. Currently, all students have been using the software called "JobMine" to apply for co-op positions. Details of how the software will work are still unconfirmed, but you can expect more information over the next two terms. What this means for you is that you will very likely be familiarizing yourself with our current software (JobMine) and quickly forgetting it to learn the new Orbis software a couple terms down the road. If you have any questions or need help getting things figured out, we would gladly be of assistance in the EngSoc office.

We look forward to working with you, and want to wish you luck for your time here at Waterloo. Have a great Orientation Week, and see you Tuesday!

Co-op aside, we are here to help you with all things academic in any way shape or form. We, along with the Engineering First Year Office, are here to help you with the transition from high school to university. If you have any questions about anything academic related, again, please don't hesitate to come ask! We answer a wide array of questions on a continual basis. From study tips, to issues with grading and due dates, to examination conflict advice, you can ask us anything!

We are very excited to have you joining us here at Waterloo. We hope that you'll stop by in the EngSoc office to say hello, even if everything academic is going perfect for you!

of the different events the Engineering Society runs each term. The first event is coming up fast on Sunday September 8. It's ENGSOC Day! Each year we run a Charity Head Shave and free BBQ starting at 2:00 p.m. outside Carl Pollock Hall, followed by ComEng (a free stand-up comedy show.) ComEng starts at 7:00 p.m. in the Humanities Theatre, in Hagey Hall.) We cannot wait for this year's EngSoc day, and look forward to meeting you all then.

The rest of our amazing events can be found on the Engineering Society website, engsoc.uwaterloo.ca, so please head on over to that to check it out. There are a ton of events each term, and it is a great way to get involved in university, or to just have a great time. The Engineering Society is a great thing to be a part of, and we hope that you all will get a good head start.

LEILA MEEMA-COLEMAN & KRISTINA LEE VICE-PRESIDENTS EXTERNAL

Hello, and welcome to the next best years of your life! Orientation week is a crazy blur, but hopefully you will remember some of the things you learned and the amazing times you had. Let us introduce ourselves! We are Leila and Kristina, and are your VP Externals for the year! Kristina is here in the fall term and Leila will be here in the winter term. The VP EX is responsible for many different things within the Society including charities, outreach, external representation and the Waterloo Engineering Competition. We will explain some of the activities involved in each of those in the rest of this article, but the best way to find out more is to come out and talk to us about the ways you can get involved! We promise we won't bite!

Charities are something very near and dear to our hearts. We run many charity events throughout the term and donate all of the money to a charity of EngSoc's choice. Charities we have supported in the past have included Free the Children, Canadian Cancer Society, and the Nation Service Dogs. If charities is your thing, you will definitely want to check out some of our more popular events like the charity head shave, purpling for charity, charity pancakes, charity bottle drives and so much more!

Another major role the VP External plays is making sure everyone gets their volunteer fix and the chance to get out in the community and show their engineering pride while

BRENDAN O'HANLON, ANNAMARIA REDA & CATHERINE DECLARO VICE-PRESIDENTS INTERNAL

Hello 2018's! We're Catherine and Annamaria, and we're your VPs Internal of the Engineering Society for the fall and winter terms, respectively. As VPs Internal, we are in charge of organizing the many events, workshops and services EngSoc puts on throughout the term. There's something to do every week!

One of the things we learned in first year was how to balance school and studying with hanging out and getting involved. While studying is good, it's necessary to get out every so often and let out some steam. The social events EngSoc hosts are a great way to do this. There's an Engineering talent show (TalEng), Engineering play (EngPlay), trivia contest (Genius Bowl), beginning, middle, and end of term parties (BOT, MOT, EOT), and a Semi Formal dance, among many other social events. On top of that, we also run events that promote mental and physical health such as running sessions, therapy puppy sessions during exams, and intramural sports.

giving back. In the fall term, we march alongside the rest of Waterloo in the Santa Claus parade; in the winter term, we pull a bus all the way to Kitchener to raise money; and in the summer term, we organize a group to go to march in the Toronto Pride parade to help raise awareness for the diversity in engineering. All of this, in addition to smaller outreach events, is how Waterloo engineers show how much they care.

In addition to charities and outreach, the VP external also represents Waterloo to the Engineering Student Societies Council of Ontario (ESSCO) and the Canadian Federation of Students (CFES) councils. We voice the opinion of Waterloo students, exchange ideas, and meet engineering students from all across Canada. There are opportunities for every student to participate by attending conferences. A great conference for first years is the First Year Integration Conference in February, which is going to be in Ottawa this year! You'll get the chance to be inspired to become leaders in the Engineering Societies while making friends with students from every Ontario school. Keep your eyes open for applications starting in November.

Lastly, if design and competition is your passion, then the Waterloo Engineering Competition is for you! Each fall and summer term, teams of four compete to solve challenging design problems for the chance to compete at the Ontario and Canadian Engineering Competitions later in the year.

We are so excited to meet all of you and make your time here as fantastic as ours is! Thanks and see you soon!

Check out the EngSoc calendar at engsoc.uwaterloo.ca to see the schedule of events for this term and check if anything grabs your attention!

Additionally, EngSoc runs a variety of academic workshops to help you succeed as a student. Resume critiques is a must for first year students who have a co-op in the winter; it is run at least twice a term. There are also workshops such as Interview Skills, Getting a Job Outside of Jobmine, and Housing 101. Did you know the EngSoc website also has resources to help you out? There's a scholarship bank with over \$1 million in scholarships, and an exam bank with past exams to help you study.

If you're looking to get involved in helping with EngSoc events or have any new ideas, let us know! You could email vpinternal.b@engsoc.uwaterloo.ca, or check out the EngSoc website and look for directorship applications. Directors are in charge of running a specific event. A directorship can be as little or as much work as you want it to be — it's up to you.

We hope your first term as engineering students is very exciting, and hope to see you at some events soon! If you ever see us around, feel free to stop us and say hi.

Engineering Society Directorships and Events

HEATHER SMITH OUTREACH COMMISSIONER 'A'

Welcome to Waterloo Engineering. Please, sit down, stay a while and make yourself comfortable. Your next few years here will be anything but boring; especially with the various exciting outreach events run by the Engineering Society!

For the Fall term, there are lots of events and initiatives that give engineers a presence in the K-W community. For one, a new initiative to the 'B' Society, Engineering A Difference, will allow you all to have a bigger impact outside the school and in the community by volunteering your time at various events around the area. Like earning Girl Guide badges, you will all have something to collect every time you take some time out of your busy schedules to do something for others. Another great time to do something good for the community is an event called Halloween for Hunger. Instead of getting candy while trick-or-treating, you can get spare

ADAM KLETT FORMER WEC COMMISSIONER

Looking for a way to prove to everyone that you know how to engineer? Want to set yourself away from the pack with some hands-on experience? The Waterloo Engineering Competition is the answer. We offer seven unique competitions of which first-years can participate in Junior Design, Consulting and Sir Sanford Fleming Debates. Competitions are usually done in groups of two to four. The main objective of these com-

DAVID BIRNBAUM PRESIDENT 'A'

POETS is the Engineering Society Student Lounge. Located in Carl Pollock Hall, room 1337, just off of the main foyer, it really is one of the hearts of engineering student life here at Waterloo. Whether you want a place to relax after a long day of lectures, or just want a nice

change or non-perishable food items that will go to our local Food Bank. For the month of November, many engineers will be growing their moustaches (male or female :p) and collect pledges for prostate cancer treatment. Finally, the Engineering Society also manages to create a float that will be showcased at the Santa Claus parade in December. Whether you like to collect money from others or want to volunteer any spare time you have, there's always something that you can do that will better our K-W community.

Have you always wanted to get together with a group of friends and push a bus down a main road? If so, then Bus Push is for you! This event has been run once a year since the winter term of 1977, where engineering students would collect donations for a charity by pushing a bus for 6.5 km. Bus Push is a long-standing tradition that Waterloo Engineers are proud of, and is a great way to meet people, give back to the community, and just have an awesome time pushing a bus. On another note, we all have those

petitions is to teach the hands-on design cycle and to allow students to demonstrate innovation, resourcefulness, and technical thinking.

Junior design offers students the ability to design, build and test a solution to an engineering problem. One past example was to move 'mining-ore' down a small-scale mock mountain terrain using basic craft supplies.

Consulting features a figurative solution to a macro-scale problem. Previous examples include solving the problem of annual flooding around Winnipeg due to snowmelt and improving Waterloo's transit initiatives.

place to sit and eat lunch with your friends, POETS is the place to go. Open weekdays from 8:30 a.m. until 5:30 p.m., you can always find it full with people taking a nice break and either watching a movie (three movies each day,) playing a board game (available in the EngSoc office) or having a beer (licensed Friday afternoons.)

It is full of Waterloo Engineering history, in-

cluding pictures of old events and pranks, past Orientation Week winners and photos, and much much more. It really is a great place to put your feet up when you need a break from the daily grind. So next time you're on lunch, or just need a 15 minute power-break, why not grab a bite from the Coffee and Donut shop and come say hi to everyone in POETS? (Just remember, C&D is cash only)

dreary days filled with impossible integrals and vicious vectors where you'd just love to take a break and explore your artistic side. If this sounds like you, perhaps CANstruction would be your cup of tea! This event is run in the winter term and it involves Waterloo engineers collecting non-perishable food and using it to create a beautiful masterpiece! If creating a majestic sculpture of cans wasn't enough to catch your fancy, the structures are then judged, prizes are awarded, and all food collected is donated to the Waterloo Food Bank. Did you hear that we had our own month? That's right, March is National Engineering Month! Celebrate by volunteering with a group of students to construct an over-engineered apparatus to set off a chain reaction, thus accomplishing a simple goal. That's right, a Rube Goldberg machine.

If you have any ideas of your own, feel free to reach out to an Exec or even an involved upper year student so that you can put your engineering skills towards the greater good of our community.

Sir Sanford Fleming debates features a formal head-to-head debate on unresolved issues of importance in society with particular interest to engineers. An example might be to debate energy policy in Canada or the ethical responsibility of engineering as a profession.

More info can be found at wec.uwaterloo.ca. Watch for posters regarding sign-ups in October or contact us directly at wec@eng-mail.uwaterloo.ca. Overall, first year is what you make it, so get out there and try things like WEC!



Waterloo Engineering Endowment Foundation

BEN PRATT WEEF DIRECTOR 'A'

You have probably seen a whole bunch of yellow stickers with "WEEF" strewn about various labs and hallways throughout the engineering buildings. The big yellow stickers are stuck onto everything you see: computers, projectors, tools and high tech machines. As your inquisitive mind ponders "what is this WEEF business all over the place?", you may get the impression that it makes a pretty large impact across engineering. If this is what you're think-

ing, you are on the right track. It's big... it's really big! The Waterloo Engineering Endowment Foundation (WEEF) at the University of Waterloo is one of the most unique student-managed organizations in post-secondary institutions across Canada. This foundation was envisioned by students in 1990 with the goal of influencing and improving the undergraduate engineering experiences for current and future students. Now, 23 years later, we have amassed a fund with over \$11,300,000! WEEF makes use of the interest off the fund and can then provide funding for student teams

and groups, and departments to enable students to use even more hands-on industry level lab equipment, computers, and new methods to investigate the "why and how" of our disciplines. What's the really awesome thing about WEEF? It's up to you, the student, to decide where the money goes. No faculty, no accountants, no parents. The student funding council are the decision makers as to whom and where the funding goes. Now that's cool stuff! Along with the best professors and lab instructors in the country, WEEF provides that extra edge to continue the tradition of making University of

Waterloo Engineering one of the best choices a student can make. Want to know what WEEF has done for your specific class? Talk to your lab instructors and professors about how WEEF has helped out – you'll be sure to find out how good WEEF is to engineering at Waterloo. If you want to make a difference, want to know more or how this student fund is improving your experience, visit weef.uwaterloo.ca or email weef@uwaterloo.ca — we would love to tell you about how awesome you are in making WEEF what it is today. Continue the tradition. Continue supporting WEEF!

Federation of Students — Serve, Empower, Represent

LUCAS HUDSON 3N MECHATRONICS

The Federations of Students (Feds) is the official voice of undergraduate students attending the University of Waterloo. Feds is run by a team of four elected executives who are elected every year in the Winter term. They are the President and the three Vice Presidents: VP Administration and Finance, VP Internal, and VP Education. The executives are held accountable by an 11 person Board of Directors and a Students' Council comprised of representatives from each faculty and college at Waterloo. The executives are also supported by a team of dedicated, full-time staff. The Feds office is located on the main floor of the Student Life Centre, room 1102.

David Collins, the current President, is responsible for overseeing all aspects of student government as well as representing under-

graduates to the University administration, Senate, and Board of Governors. The President also provides leadership and supervision to the Federation of Students. David can be contacted at pres@feds.ca or [@UWFedsPres](https://twitter.com/UWFedsPres).

Devin Drury, Feds' VP Internal, maintains and improves student life programs by supervising Feds services, student services and clubs, by handling accountability of societies, by communicating with colleges and residence councils, and by overseeing projects and commissions. Think there is a club missing around campus? You can start your own! Stop by the Feds Office to chat with Devin or contact him at vpin@feds.ca or [@UWFedsVPi](https://twitter.com/UWFedsVPi).

Adam Garcia, Feds' VP Education, represents students to the University administration and all levels of Government to ensure students' academic experience is affordable and accessible, and that it maintains a high qual-

ity. He also helps the student population with academic and co-op issues. Adam works with the Ontario Undergraduate Student alliance (OUSA) and the Canadian Alliance of Student Associations (CASA) to bring a united student voice to the national and provincial governments. You can visit Adam in the Feds office or contact him at vped@feds.ca or [@UWFedsVPed](https://twitter.com/UWFedsVPed).

Natasha Pozega, Feds' VP Operations & Finance, oversees all commercial services on campus, administers the health and dental plan, and oversees the marketing, account and IT departments of the organization. Natasha also ensures that all employees are properly trained and recognized for any outstanding work, and assists student groups with budgeting. Natasha can also be found in the Feds office or can be contacted at vpof@feds.ca or [@UWFedsVPof](https://twitter.com/UWFedsVPof).

Feds runs multiple commercial services

around campus. These include: The Bombshelter Pub; Campus Bubble, a bubble tea and hot loose leaf tea shop; Feds Used Books store; and International News, a convenience store with a wide variety of products. Feds also runs the Campus Response Team, the Feds Student Food Bank, the Glow Centre for Sexual and Gender Diversity, and The Women Centre. These services, along with many others, provide opportunities for part-time employment. Volunteer opportunities are available with other services such as the Bike Centre, Turnkey Desk, Orientation or with one of the over 160 clubs.

Feds is a great organization to get involved with on campus and gives you the chance to pursue many different facets of campus life. If you want to learn more about Feds you can visit their website, feds.ca, email them at receipt@feds.ca or drop by their office in the Student Life Centre, room 1102.

Engineering Society Directorships and Events



Mental Health Awareness

ANJALI GOPAL
MENTAL HEALTH AWARENESS
DIRECTOR 'B'

All right, frosh, here's some tough love: engineering is stressful. Of course you'll laugh, meet new people, and make memories to last a lifetime, but along the way, you might also panic about your exams, struggle with anxiety about coursework or co-op jobs or relationships (or all of the above), and you might even shed a few tears... but as long as you know how to deal with it, everything will be okay.

As your Mental Health Awareness directors, we're here to make sure you have the resources you need to succeed. Throughout the term, we'll be hosting a ton of events to make sure that you know how to recognize your stresses, and know how to deal with it in a constructive manner. In previous terms,

we've hosted events such as Post-Secret Week (a way to get something off your chest in a confidential way), outreach with Stand up for Stigma (a way to reduce the stigma associated with Mental Health Illnesses), and our ever successful Puppies campaign (we invite Therapy Dogs to POETS that you can play with during extremely stressful times like midterm week). You can also look for our bi-weekly "Engineering Wellness" articles in *The Iron Warrior*. This upcoming fall term, we're also partnering with Counselling Services and the Student Success Office to bring you study skills and stress management workshops.

We are also a huge advocate of Counselling Services at the University of Waterloo. Counselling Services is located all across campus, but the two main locations accessible for first-year engineering students is at the First-Year Office in CPH, room 1320, and in Needles

Hall, Room 2080. Counselling Services is a fantastic resource to help you deal with any personal or academic issues. They can help you in areas such as stress management, anxiety, sexuality and relationship issues, depression, and more. Best of all, their service is completely free to all registered students. You may contact Counselling Services by going to one of their offices, or by phone at (519) 888-4567 ext 32655.

The key thing to remember is that mental health isn't just a luxury; it's a priority. It can have as much impact on your life and your university career as your physical well-being. If you ever find yourself struggling with Mental Health issues, please reach out. Many of us have gone through the same thing, and we're here to help.

Have a wonderful Orientation Week, and good luck with the rest of term!



EngPlay

ANNAMARIA REDA
FORMER ENGPLAY DIRECTOR

You walk into the audition room, the directors' eyes seemingly watching your every move. Did one of them just yawn? Wait... what's my line again? Before you can even open your mouth, one of them yells "NEXT!" Though this may be the idea many students have of auditioning for a play, don't worry... EngPlay isn't like that at all! Before we go on any further, let's first answer the question "what is EngPlay?". Well, it's just as it sounds;

every term the Engineering Society puts on a play consisting of between 8 and 20 engineering students. After weeks of preparation and set building, we put on three performances.

Interested, but nervous about auditioning? No need to worry, the directors are students just like you, and have been in your shoes before. We are simply looking for funny, committed actors who love putting on a show. Rehearsals will typically take place 2-3 times a week at times that work with the actors' schedules. This isn't boot camp, kids! Though EngPlay is a commitment, we're here to have

fun. Once we begin to approach the end of term show dates, crew will be needed to assist with sound, lighting, stage changes, etc — this is a great way to get involved with EngPlay if you're not the acting type. Keep your eyes peeled for more information about EngPlay; there will be posters up during the first or second week of classes advertising auditions — we hope to see you there!

Even if acting isn't for you, that's okay with us as well! Come on out, bring some friends, and enjoy the show instead. We guarantee you won't be disappointed!



@charities

EMILY GRUBER
CHARITIES DIRECTOR 'B'

The Engineering Society supports several charity organizations through their plethora of charity events. The first EngSoc event of the term is the Charity Head Shave which will be on Sunday, September 8, in the afternoon before ComEng. The Head Shave is a barbecue where students bid for the rights to shave Orientation Leaders' heads, all in support of the Canadian Cancer Society.

The next event coming up in the Fall term

will be Color Me Rad! This is a popular five kilometer run on October 6, 2013 in Kitchener/Waterloo which raises money for various local charities. At this event, runners wear all white and during the run they are bombarded with fun "Color Bombs." This is a great event to have fun, get active, and support charities all at the same time.

Next up is Halloween for Hunger! Do you miss the days of trick-or-treating from your childhood? This is the perfect event for you! Students trick-or-treat in costume on Halloween but request non-perishable food items to

donate to the K-W Food Bank instead.

Then, we have Movember! If you are not familiar with Movember, it is an event that takes place during the entire month of November to raise awareness about prostate cancer and to raise money to aid in the search for a cure. Throughout the month, you'll notice many students, faculty and staff growing moustaches (or in some cases attempting to). Feel free to run your own charity events for your classes also! Lastly, look for the charity directors in CPH every Wednesday at lunch to buy your charity-supporting grilled cheese sandwiches!



Women in Engineering

KRISTINA LEE
VICE-PRESIDENT EXTERNAL 'B'

Have you ever wanted to get involved but are unsure on how to start? Have you wondered where to continue your hobbies in university? Wouldn't life be easier if you had a mentor with similar interests who can answer all of the above?

The University of Waterloo has always been one of the best in outreach programs, especially in improving female enrollment

for the Faculty of Engineering. This Fall 2013 we'll be continuing the Women in Engineering First-Year Mentorship Program. The Mentorship Program pairs you up with an upper year student and provides opportunities for you to bond and talk.

In the past Women in Engineering has hosted BBQs, co-op panels, keychain workshops, and campfires. If you have any questions about being a female in engineering or want to hear experiences from other students this is a great way to

do that.

Women in Engineering is not just for women either. Women in Engineering recruits volunteers for a number of female oriented elementary and High school events! One of these events is GoEngGirl; an event that invites grades 7-10 students to Waterloo for the day to partake in fun engineering related activities.

Keep an eye out for these events and more by joining our facebook group at [facebook.com/groups/wie.mentorship](https://www.facebook.com/groups/wie.mentorship).

Entrepreneurship Around Waterloo

AMANDA WATKINS
CONRAD BUSINESS

The founding fathers of the University of Waterloo truly embodied the entrepreneurial spirit of this region — setting out to establish a university where the world's greatest challenges could be solved, with education at the core of this mission. Over 50 years later, thanks in large part to Waterloo's innovative creator-owned intellectual property policy, Waterloo continues to lead the way. This time, it's in entrepreneurship education and the fostering and building of technology companies.

Entrepreneurship is a key foundational pillar in Waterloo's strategic plan, and the Faculty of Engineering is leading the way in entrepreneurship education at the Conrad Business, Entrepreneurship and Technology Centre. Housed in the David Johnston Research and Technology Park in North campus, the Conrad Centre runs programs for entrepreneurs at the undergraduate and graduate level. Our Enterprise Co-op program gives students the opportunity to start their own

business on their co-op term with mentorship from the Conrad Centre. Our Bridging Entrepreneurs to Students program (BETS) connects first year engineering students with local start-up companies for short work placements similar to a co-op term. Conrad is probably best known for our Masters of Business, Entrepreneurship and Technology (MBET), a graduate program that prepares students for careers as start-up founders, consultants at major technology companies, or small business owners. All programs at Conrad take experiential learning to the next level: you don't learn about building companies at Conrad — you actually build them.

The entrepreneurial options at Waterloo don't stop there. All across campus, students have been bitten by the entrepreneurial bug and are participating in different clubs, societies, programs, and award competitions. Here is just a sampling of these options.

The University of Waterloo Entrepreneurship Society: brings entrepreneurial students together through various events throughout the year.

The Norman Esch Entrepreneurship Award for Capstone Design: provides a minimum of six awards, ranging in value from \$5,000 - \$10,000 each, for student teams enrolled in the Faculty of Engineering's Fourth-Year Capstone Design Project. The awards are open to student teams from all departments within the Faculty of Engineering.

VeloCity: students can participate in the VeloCity Campus, live in the Residence, or build their business in the Garage. With varying levels of engagement, entrepreneurially inclined students can meet like-minded peers to develop new companies, work together on innovative ideas, or brainstorm the next big thing! Once a term, VeloCity holds a pitch-competition called "Demo Day," in which student teams pitch their startup companies for a chance to win up to \$1,000 in prize money, or one of four coveted VeloCity Venture Fund (VVF) prizes of \$25,000.

St. Paul's Greenhouse: a new venture on campus launching in the fall, 2013. Greenhouse, like the VeloCity residence, is a residence for social entrepreneurs, where they

can live and work with like-minded peers throughout the school year.

The University of Waterloo's Stratford Campus: entrepreneurship is baked into Stratford's programs, such as the Bachelors in Global Business and Digital Arts, and the Master of Digital Experience Innovation. Moreover, The Stratford Accelerator Centre was recently launched in partnership with Waterloo and The Accelerator Program. The program operates on the same principles as the Waterloo Accelerator Centre, providing infrastructure and mentorship for start-ups and early stage companies.

With an enhanced focus on entrepreneurship, Waterloo is poised to churn out the next round of highly successful technology companies to join the ranks of BlackBerry, Desire2Learn, Dalsa, Certicom, Maplesoft, and more recently Kik, BufferBox, Thalmic Labs, Clearpath Robotics, and Pebble Technology. For budding entrepreneurs, there is no better place to study and live entrepreneurship than in the Faculty of Engineering at the University of Waterloo!

Student Design Centre

PETER TEERTSTRA
DIRECTOR, STUDENT DESIGN CENTRE

The Student Design Centre (SDC), located on the first and second floor of Engineering 5, is home to twenty-two of the Faculty of Engineering's student competition teams. The largest facility of its kind in North America, the SDC pro-

vides work bays for teams as well as special purpose spaces for sanding, painting, engine testing, electronics assembly, etc.

Here are some typical questions that students have about student teams:

How do I join a student team? Simple... email or walk into the team work bay and say "I want to join your team." Recruiting new members is one of their

biggest challenges for a team – so they will be really happy to meet you!

Why should I join a team? Being a member of a student team looks great on your resume — companies are always looking for students with practical, hands-on experience. Also being on a team gives you lots of experiences you won't get in a class room. And it's fun!

Will I be able to handle the extra work load? Absolutely! You can be an active member of a student team by participating as little as 1-2 hours a week. The SDC is holding a Recruiting Open House on Tuesday, September 18 from 3:00 p.m. to 6:00 p.m. Be sure to stop by to visit with the teams and get more information.

Student Teams, Groups and Clubs

DOUGLAS THORNS
UW AQUAPONICS,
RECRUITMENT LEAD

Interested in helping make food more sustainable? Like gardening? Like fish whether they are swimming in an aquarium or on your dinner plate? Want to engineer green technology? Want to make a difference in your community? Then join UWAQ. University of Waterloo Aquaponics (UWAQ) is a launch pad for aquaponics in Southern Ontario. Aquaponics is a biomimetic technology that reproduces the symbiotic relationships between bacteria, plants, and fish. It creates a closed-loop cycle that replaces the need for pesticides and many artificial nutrients used in conventional agriculture.

Our upcoming projects include the

UWAQ Workshop in March 2014. The aim of this workshop is to provide networking opportunities to the aquaponics community, share ideas and experiences, and introduce the general public to the fundamentals of aquaponics. We will continue to improve our current system, Nereus, give lectures to interested parties (past talks have included the Durham Region Aquarium Society), and further expand our knowledge of aquaponics. We are also exploring potential designs for a second system.

We build and maintain structurally sound systems that can sustain their own ecology. This involves a variety of engineering challenges that we face in the design, construction, and maintenance of aquaponic systems. To maintain the equilibrium of the system, water quality and organism interaction must be monitored and controlled.

Collecting this data gives us insight into the health of the system and provides a basis to optimize the design of future systems. Many varieties of engineering are drawn upon to make aquaponics technologically possible.

This technology is just beginning to be implemented in Ontario, so join the wave of innovation! There are opportunities to focus on technical work (e.g. building and maintaining aquaponic systems) and also social outreach (e.g. preparing workshops on aquaponics and giving tours to elementary/secondary school students). We are open to anybody interested regardless of experience or program.

If you are interested in learning more about us, check out our website at aquaponics.uwaterloo.ca or contact us via email at internal.uwaq@gmail.com.



MADS LIDDY
WITH RESPECT TO TIME

The Engineering Jazz Band, also known as With Respect to Time, is a collection of engineering and non-engineering students who love to play jazz, funk, rock, swing and anything in between. From the Brian Setzer Orchestra swing standard As Long as I'm Singing, to the funky back beat of Herbie Hancock's Chameleon, WRTT has something for everyone.

With Respect to Time is student run, student directed, and student played. All students

are welcome. There are typically some graduate students and some students from other faculties who play in the band every term. There are no auditions; we are a laid-back group of musicians who just like to have fun and blow our horns.

We will be playing at the Masquerade event during Orientation week; stop by and say hi to us! There will be a sign-up list for anyone interested. You can also sign-up during the first week of classes at engjazzband.ca.

What if you don't play a "jazz-band" instrument? That's OK! We have regular flute players and in the past we have had clarinet

players, tuba players, violin players, and someone even played bassoon in the band once. If you would like to play, we will work together to make it happen.

We play many gigs throughout the term. We always host a charity concert at the end of the term to raise money for a different charity each term. We are also known to play at grad balls in the graduation season, events for incoming students such as You @ Waterloo Day, Canada Day, and many others. For more information, visit engjazzband.ca or find us on Facebook at [facebook.com/WithRespectToTime](https://www.facebook.com/WithRespectToTime).



VICTORIA SIREGA
UW FORMULA MOTORSPORTS,
ERGONOMICS DESIGNER

You've probably heard that for every hour you spend in class you should study another one – two hours. Now, you've probably also looked at your class schedule, and the hours are adding up. How is all that studying even possible? Well, I'll tell you how: hard work, long days, and maybe most importantly, a passion. Passion for what you're learning gives you the drive to work hard, and the focus to succeed. We understand that there just aren't a lot of people who can find passion in daily 8:30 a.m. classes or hours of calculus homework. So we're offering an alternative. Go to class. Do your homework. Then, build a race car.

Every year, the UW Formula Motorsports team designs, builds, and tests a single seat,

open-wheeled race car that goes 0 – 100 in about 3.5 seconds and sees lateral and braking accelerations up to two g's. This year's car will have a full aerodynamics package and a four cylinder, 600 cc Honda engine that easily makes over 90 HP. In May, we'll compete against 120 other teams from around the world at the Michigan International Speedway.

Team members have the opportunity to implement principles they learn in class in a real-world design challenge. They learn software programs and design principles and manufacturing techniques that a lot of students haven't even seen by the time they graduate. Aside from the intrinsic value of this experience, it also looks pretty good on a resume. Employers know that UW Formula Motorsports team members have:

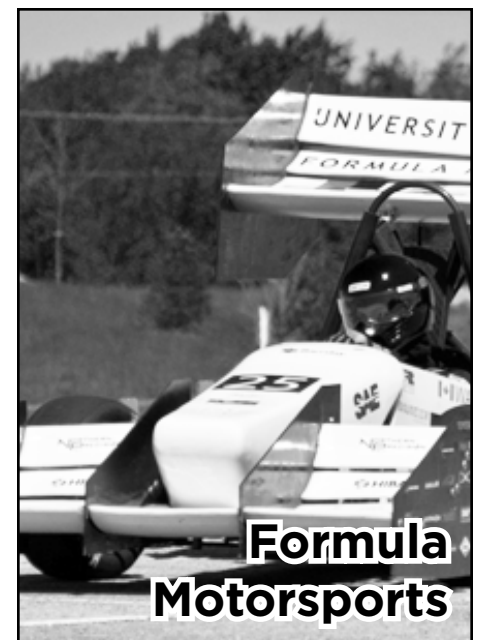
- great time management skills
- dedication and tenacity

- practical skills that complement their theoretical knowledge
- an understanding of the implications of design that can only be gained through hands on experience

Besides all that, the Formula Motorsports team is exactly that: a team. Nobody sails through Waterloo engineering without at least a little strife. Resume critiques, homework help, and tutoring are all examples of how our upper years support our first year members.

So give it some thought. You'll see how what you're learning in lectures relates to the real world. You'll probably have an easier time finding co-op jobs. You'll learn things you'd never see in class. And you'll be part of something incredible.

If you're interested, check out www.uwfsae.ca, email us at uwfsae@gmail.com, or stop by the team bay in Engineering 5.



LAUREN STEPHENSON
GLOW CENTRE,
SERVICE COORDINATOR

The Glow Centre for Sexual and Gender Diversity is a service of the Federation of Students (Feds) geared towards improving the lives of LGBTQ+ students at Waterloo.

Transitioning into university life can be difficult, especially if you are struggling with your sexuality or gender identity. The Glow Centre offers a safe space for queer and trans students, as well as their allies, to gather and socialize. We are open every weekday. You can come in, relax, meet new friends, play a board game, borrow a book from our library, watch a DVD from our collection or try to

study (studying is rarely successful in the Centre, we have too much fun).

In addition to the social hours the Centre holds, we have peer support hours during which anyone can drop in and speak to one of our volunteers one-on-one. Peer support appointments can also be made by emailing glow@glow.feds.ca.

As well, we host a number of events throughout the term. We have weekly events such as board game night and movie night. Some of our other events in the Fall term include our Drag Show, a speaker series, Coming Out Week and Trans Awareness Week.

Additionally, Glow works to advocate for the inclusion of queer and trans students on campus. If you are having any issues related

to your sexuality or gender identity Glow is here to help.

The Centre is located in the Student Life Centre, room 2101 (go up the stairs by the Bombshelter Pub and turn left). Our Orientation Week hours are Monday to Friday 3:00 p.m. - 6:00 p.m. and we will be open later on one day for an open house. During the term the Centre's hours will be longer. Check out [facebook.com/glowuw](https://www.facebook.com/glowuw) for more information.

If you would like to volunteer with Glow we will be taking applications for the Fall term until September 13 and our volunteer training will occur on the following day. Glow volunteers hold office hours and help with events. First years are welcome. You can apply at feds.ca/glow/apply.





KYLE OLIVE
IEEE STUDENT BRANCH

The IEEE (pronounced “eye-triple-E”) Student Branch is a part of one of the worlds largest professional organizations. As a student group, we plan and run several technical talks and workshops delivered by industry professionals every year. Most recently, we’ve had a Waterloo graduate come up from starting a successful Silicon Valley startup to deliver a talk on entrepreneurship. Before that, NVIDIA came down to do a talk on graphics computing in the cloud.

We don’t just set up tech talks and workshops, though. Our members also make up our Warbots Robotics Team. This interdisciplinary team, which started last year, is always looking for smart and engaged people interested in robotics and in software development. The team is working towards designing and building an autonomous team of soccer playing robots to compete in the international RoboCup games (last year, it was held in the Netherlands!).

Whether you’re interested in hardware or software, robots or apps, there’s always a way to get involved. If you’re interested

in keeping tabs on our public talks, workshops, and events, check out the IEEE Student Branch Facebook page at facebook.com/ieewaterloo. You can also stop by our workbay on the second floor of Engineering 5, next to the electronics lab, or our office in EIT 3107 (the room with the IEEE sign above the door), to find posters about upcoming events, or talk to a current team member.

If you are interested in getting more involved in the branch as a leader or volunteer, we’d love to hear from you directly at info@ieeesb.ca.



LUCAS HUDSON
THE IRON WARRIOR, EDITOR-IN-CHIEF

The newspaper you are reading at this very moment was put together by a dedicated team of engineering students and is published five times per term. If you have an interest in being a part of a group of students who want to educate their peers about what’s going on

around campus, developments around town or breaking news from the world outside, *The Iron Warrior* is where you want to be. We are always looking for people to write about news but we also want people who love technology, gaming, arts & culture, politics and more. If writing is not your thing, there are still many things you can help out with! You can lead our advertising team to secure advertisements

from local businesses and employers. We also need photographers and photo editors to capture the right moment to go along with our articles. You can even help layout with Adobe InDesign, no experience necessary! Send an e-mail to iwarrior@uwaterloo.ca or drop by the office located in E2, room 2347. Newcomers are always welcome. Oh, and don’t forget there’s free food at every meeting!



KAMAL RAI
MIDNIGHT SUN, BUSINESS MANAGER

Founded in 1988, Midnight Sun is a student-run organization that designs and builds solar cars to compete in races around the world. As the largest student design team at the University of Waterloo, we welcome students from every faculty. This unique mix of talents and skills results in an ambitious team that showcases the diverse abilities of the students at the University of Waterloo.

With 25 years of experience in building and

racing solar cars, our team provides hands-on experience and opportunities to be innovative, allowing students to develop their creative, technical, and leadership skills. From conception to track testing, every step in creating the solar car allows students to practical experience beyond what can be attained in a classroom setting.

We have been featured on the Discovery Channel, TSN, and many other news programs. Our team also holds a Guinness World Record. In 2004, our seventh-generation solar car set the world record for longest travelled

distance by a solar car. The car travelled a distance of 15 070 km through Canada and the United States.

This fall is an exciting time for our team because our entire car is being re-designed! Our 11th generation car design will be the first to have two seats, and the aerobody will be the first to be built as a carbon fibre monocoque.

If you’re interested in joining the team, contact us at mail@uwmidsun.com or visit us at E5 Room 1002. You can also visit our website at uwmidsun.com or find us on Facebook at: facebook.com/uwmidsun.



MICHAEL LEUNG
UW_NRG, HEAD OF RECRUITMENT

The University of Waterloo NanoRobotics Group (UW_NRG) is an undergraduate team that competes internationally in the annual Mobile Microrobotics Challenge. The challenge is comprised of two separate competitions that utilize a micro-robot less than 400 microns in size: approximately the width of a human hair! In the mobility competition, teams navigate their robot through an obstacle course as quickly as possible. In the microassembly competition, the robot has to organize objects into a densely packed array.

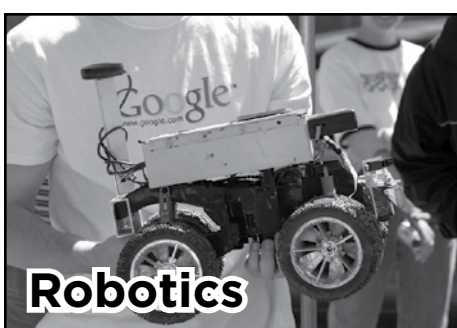
Our team is composed of more than 40 multidisciplinary engineering students. Currently, we are looking for committed students to join our dynamic teams in business, mar-

keting, software, or one of the four technical teams. No experience is necessary. As long as you have the determination to learn, our seasoned members will teach you what you need to excel, all the while providing an opportunity to make some good friends along the way. We are looking for dedicated students that are willing to give it their all. We have opportunities for you to help in robot design, fabrication, and testing. All disciplines are welcome; designing our own apparatus requires both mechanical and electrical collaboration. Controlling the robot is all done in house, requiring clever coding and electrical interfacing. Finally, robot fabrication is all chemistry! The more you put in, the more you will learn, succeed, and enjoy. As a bonus, UW_NRG sponsors a few of its first year members to participate in the International Conference on

Robotics and Automation (ICRA) every year.

UW_NRG annually competes at ICRA, which is hosted by the IEEE at different locations around the world. In the past three years, UW_NRG has placed first in both competitions with its flagship EMMA (ElectroMagnetic Micro Actuation) robot. This year, we are looking to compete with some of our other robots, which are driven by piezoelectrics, microfluidics and quantum locking. We are also participating in numerous conferences to spread the word on nanotechnology.

If you’re interested in learning more, then come visit our booth during Junkyard Wars, and be sure to attend the recruitment information session that we will be hosting in September. Get in touch with us at uwnrg.org or on our Facebook page, facebook.com/uwnrg. We hope to see you soon!



AJ ROSEWARNE
ROBOTICS, TEAM PRESIDENT

The UW Robotics team is an enthusiastic group of graduate and undergraduate students who are passionate about robotics. The Robotics team focuses on unmanned autonomous and tele-operated robotic ground vehicles. This year, the team will be competing in four international robotics competitions for the love of robotics.

The four sub-teams are Robot Racing, Mars Rover, IGVC, and NASA Sample Retrieval.

The Robot Racing team transforms a miniature car into an autonomous high speed racer. The Mars Rover team builds a ground vehicle that is tele-operated to perform high precision tasks in a Martian environment. The IGVC team, or Intelligent Ground Vehicle Competition, builds an autonomous ground vehicle capable of navigating a complex obstacle course as fast as

possible. Finally, The NASA Sample Retrieval team builds a robot that autonomously searches a large, unknown extraterrestrial area for known samples of interest and returns the collected samples to it’s home platform. The team has tasks for all skill levels from those just starting out to the veteran roboticist.

If you are interested in becoming a part of the team, go to robotics.uwaterloo.ca for the mailing list sign up and contact information.

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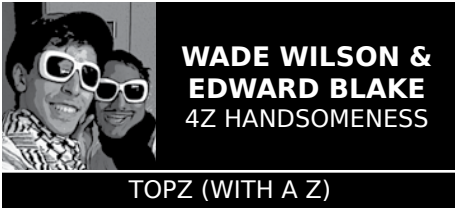
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Top Wayz to Make the Most out of First-Year



Note: Topz (With a Z) is a regular column in The Iron Warrior which employs cynical and absurd sarcasm in a paltry effort to be entertaining. Please do not take anything written below seriously or at face value. If you do, you're kind of stupid.

Love, Wade & Edward, bad boyz for life.

P.S.: We aren't really bad boyz for life. That's an example of the kind of corny shit you shouldn't be taking seriously, stupid. You're the reason we have to write a disclaimer. We hate you. <3 jks

Congratulations! You've made it to Waterloo, and now you couldn't escape if you wanted to... because your parents would disown you. But hey, why worry now? All that stress can wait; right now all you need to think about is making friends so that your entire university career isn't plagued by crippling loneliness. Then after a week you can start worrying about an academic workload the likes of which you've never experienced, unless you were among the top of your class in high school, then you have nothing to worry about ever. Even still, we know that you're abuzz with questions. How do I make friends? Where do I get the best deal on textbooks? Where can I find people who are holding? How do I find those handsome hunks that write for *The Iron Warrior*??? Of course all this would be daunting, except that we have prepared for you a list of the top wayz to make the most out of first-year: academically, socially, and romantically platonically.

You're too cool for Frosh Week:

Frosh week sucks. Yeah, we're with you on this one. Sure, this kind of thing might be "fun" for the plebs, but a patrician like you? You know that you're better off preparing for classes over bottles of beer and bowls of kush. This isn't nearly hardcore enough. How are you expected to have a good time and meet people if you aren't being pelted with eggs and drenched in puke? It's not like you have evenings free to go to parties or anything. Everyone knows that frosh week is a 24 hour commitment. As a prospective engineer you shouldn't waste your time with team-building events at Earn Your Hardhat, Junkyard Wars where you have to design and build projects from scratch with unconventional materials, and a smörgåsbord of events that go late into the night covering almost every niche. No, all this time could be used on more rewarding experiences, like getting stoned all day and drunk all night. Mom and Dad aren't here to stop you anymore!

Party, Don't Stop:

Everyone knows that university is all about "the experience." What experiences, specifically? Heck if we know, we were too busy getting drunk the whole time. Yes, everyone knows that you can't have a good time unless you don't remember it in the morning. After all, you're just being social! There's no better way to win the long-term adoration and respect of your peers than by downing a mickey of Jack Daniels out of a shoe. Don't forget, what's a party without sex? Not a party! Also, don't buy into all the jazz about condoms: if the person says they are clean and on the pill/going to pull out, then that's smooth sailing. It's not like anyone out there would be deceptive just to get laid.

Pay Attention to *Big Bang Theory*:

We're sure that many of you are fans of the smash hit *The Big Bang Theory* and are thinking that now that you're in University your life is going to be just like it. Well you're right! University is dull, repetitive, predictably terrible and exhausting. The first year will make things seem fresh and exciting, but it won't take long to realize that every class is essentially the same. Also, you should totally show-off your nerd-core pride! In Waterloo you will certainly stand-out for reading xkcd, going on *reddit.com*, and having math-inspired t-shirts; it will be charmingly quirky and make all who see it go "Bazoooper! Get a load of this guy/gal! I bet he/she knows when the Narwhal bacons! He's/she's a nerd, but totally owning it! Nerds FTW!" ... but not literally, his (or her?) load is probably saved for anime fanfic. Just don't mention The Game (haw haw, trolled ya!)

Join EngSoc:


We know that you will hear this advice multiple times over the course of frosh week, but we really cannot understate its importance: you must devote your entire life in service to the Engineering Society. Now, some wishy-washies out there will attend or create a handful of EngSoc events that appeal to their pre-EngSoc hobbies and interests, make a few friends there, and use it as a platform to advocate for their class's academic interests. These people are the unfaithful, who think outside of the box of coolness. No, the true way to be part of EngSoc is to be committed. Only make friends within the Society, go to every Society event, and only take interest in the preapproved EngSoc interests (such as beards, Chuck Norris, and Disney). Ignore all other social distractions.


After all, as IngSoc says "Ignorance is Strength."

Hate on the Other Faculties:

As an Engineer, there are a few basic principles for which you must stand: integrity, responsibility, and humility. It is in that spirit of humility that you must make an effort each and every day to humiliate anybody who has chosen a field of study different from your own. As said by Eleanor Roosevelt, "great minds discuss ideas; average minds discuss events; small minds discuss people." We are obviously great minds since we discuss ideas, unlike those small minds that discuss people, like those people in other faculties. Now it's your chance to join the chorus of mockery: jump on the bandwagon since it will never cease to be funny, ever! Especially not after frosh week. There's a reason that Engineers are telling the exact same jokes that they were telling twenty years ago. People who have different ambitions, passions and interests in life are patently wrong to do so, and hence are deserving of our scorn and mockery. After all, it's only a joke and totally cool because it's just jokes: we're just choking your chicken a little, pulling your chain, undermining your goals in life. ERTW (Engineers Rule The World). Bazoooper!

So, in conclusion, University isn't really so scary of a place (until finals). Just follow our helpful guide and you'll be a regular Arthur Fonzerelli in no time at all. At the end of the day, the University experience is entirely up to you and how you feel about things depends on how you chose to perceive them. So, come find us and we'll hook you up with very potent hallucinogens. Good luck with first-year; if you actually read this article to the end, it will likely be your last.





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BY EVAN GOLDENBERG
Waterloo Alumni | Addepar Engineer

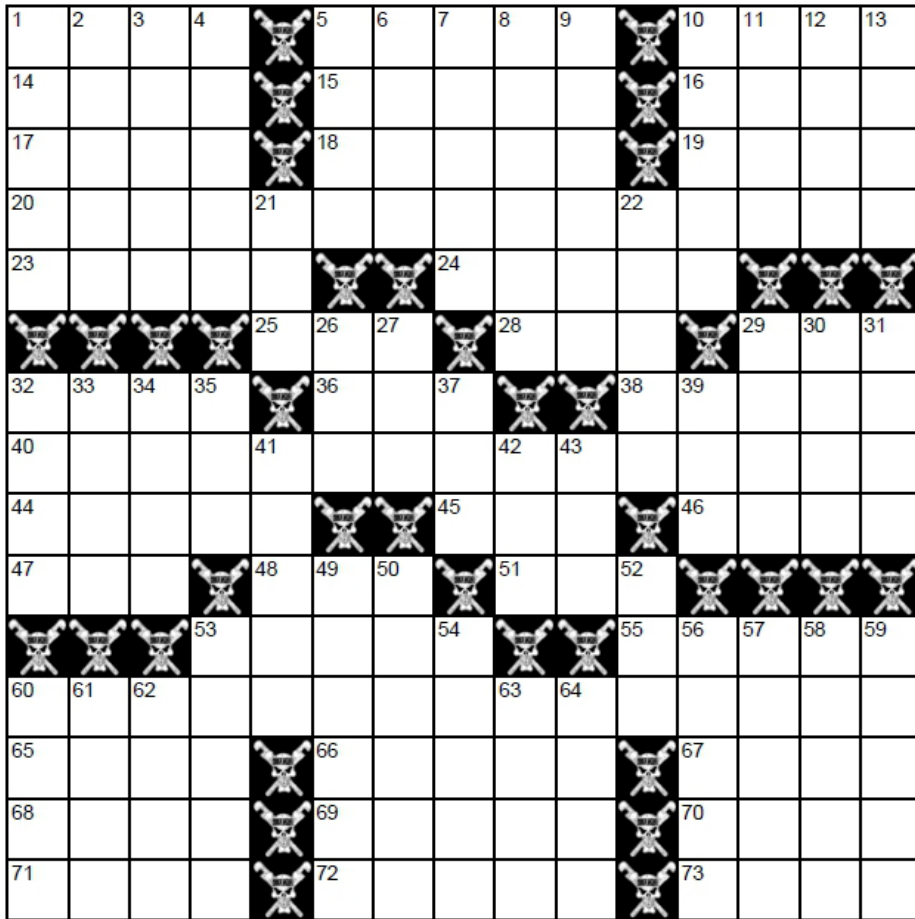
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Interviews to follow 9/27

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STUART LINLEY
4A NANOTECHNOLOGY



DOWN

- 1 Cover up
- 2 Sam _____
- 3 Coax
- 4 Trap
- 5 Taxis
- 6 Plural possessive
- 7 Type of math
- 8 Sparrow
- 9 Out for the count
- 10 Gathers
- 11 Actor Bana
- 12 Fee-Fum linker
- 13 Full of
- 21 Age
- 22 Rub out
- 26 Intensity measurement
- 27 Goddess of the dawn
- 29 Village People hit
- 30 Black
- 31 Mild
- 32 Actor Brad
- 33 Middle-East bigwig
- 34 Lithe
- 35 Raw metal
- 37 Possessive indeterminate pronoun
- 39 Commercials
- 41 _____ Lauder
- 42 Witch
- 43 Greek 'h'
- 49 Hurt
- 50 She won't hold still for pics
- 52 Hospitality corporation
- 53 Sieve
- 54 Castrated bull
- 56 Marketer
- 57 Jolt
- 58 North or South country
- 59 Sully
- 60 As before
- 61 Restaurant handout
- 62 Vet problem
- 63 'O's (sometimes)
- 64 Sword

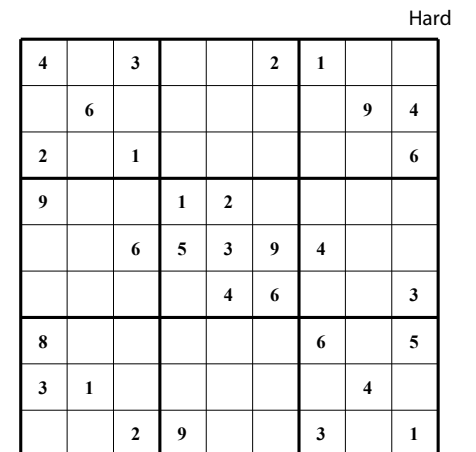
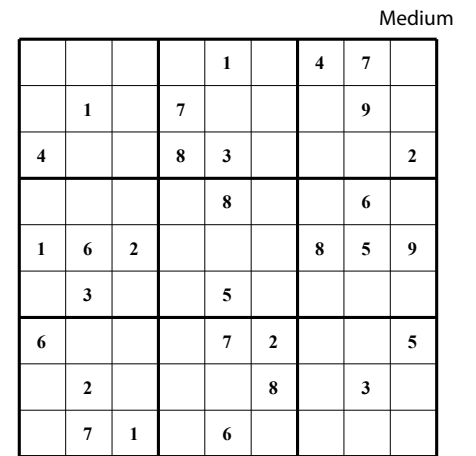
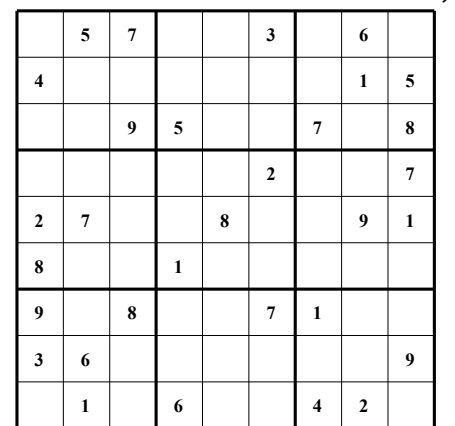
ACROSS

- 1 "Vampire" animals
- 5 _____ Rica
- 10 Lift
- 14 Paradise
- 15 Fords, perhaps
- 16 The 'E' in 'HOMES'
- 17 High priest
- 18 Smash Bros. subtitle
- 19 Teeming
- 20 PURPOSE OF FROSH WEEK
- 23 Organic linkage
- 24 Oracles
- 25 Hole-in-one
- 28 U.S. regulator
- 29 Still
- 32 Mexican buck
- 36 Taro mash
- 38 South American dance
- 40 PURPOSE OF FROSH WEEK
- 44 Runs out of juice
- 45 Rested
- 46 All there
- 47 Score, in Rugby
- 48 Sn
- 51 Diesel, e.g.
- 53 Phenotype determiners
- 55 Revels (in)
- 60 PURPOSE OF FROSH WEEK
- 65 Alpha follower
- 66 Deplete
- 67 Stud partner
- 68 Org.
- 69 Ruler
- 70 Site
- 71 Bridges played one
- 72 Brief
- 73 Close

Sudoku

#2013-FROSH

LUCAS HUDSON
3N MECHATRONICS



Solutions for previous crosswords can be found on *The Iron Warrior's* website at iwarrior.uwaterloo.ca/distractions.

Fall Issue 1 Deadline:
Friday, September 13 at 6:00 p.m.
Send your submissions to:
iwarrior@uwaterloo.ca

THE IRON INQUISITION
Lucas Hudson, 3N Mechatronics

"What is your fondest memory from first-year university?"



"Giving up on studying due to a power outage and having a living room 'campout.'"
Derek Thompson, 4N Mechanical



"Burnt the microwave oven in Village 1."
Yassir Rizwan, Mechatronics '09



"Toga Party!"
Stefan Hall, 2B Electrical



"Trip to Niagara Falls with Feds!"
Venkatesh Vedula, ECE '10



"ECE lab: blowing out a fuse and the class shutting down for the whole day."
Sam Nazarov, ECE '09



"Living in residence away from home."
Ajoy Opal, Electrical '76

Greetings New Architecture Students!

**MICHELLE BULLOUGH
& DANIEL ABAD**
ARCHFOC

This week will be a back-and-forth between Architecture and Engineering, a duel between litterarum monstra, monsters of classical texts, and a battle to see who will rule the night of All Hallow's Week.

During Orientation Week, you'll meet students in your program and faculty, explore both the Cambridge and Waterloo campuses, release creative energy, earn your first hard hat, and receive your drafting kit. We're taking a three-pronged approach to Orientation — the City of Cambridge, university life in general, and Waterloo Architecture in particular.

If you're reading this, you've probably received your Orientation kit. Dig through it and take a look at all your new stuff! It's just a sneak peak of what's going on this week and for the rest of the year.

We're kicking off on Monday at the school with registration and introductions. You're going to meet your future classmates! Soon after you'll meet your leaders, the Bigs and Huges, who will be with you throughout Orientation week and the fall term. Most of your leaders are second-year students who were in your shoes last year, and are there to answer any and all questions you may have about university life. Later on we'll play games in Victoria Park and race cardboard chariots around the school.

On Tuesday, we're making our way up to Waterloo to join the rest of the Faculty of Engineering. To spot Engineering amongst other faculties' Orientations, look past the brightly colored t-shirts and look for purple-dyed skin. We're going to take part in the Engineering tradition of earning our hardhats. You will get your yellow hardhats, and watch your leaders earn their green and red ones.

Wednesday will be focused on acquainting you with Waterloo Architecture and its surrounding neighborhood. You'll meet your IA professors and Cambridge's mayor before embarking on the Great Galt Adventure scavenger hunt. In the evening, it's time to relive Art Attack with a flurry of glue and paint at Art Night.



LITTERARUM MONSTRA

mon·ster /'mänstər/
noun.

From latin 'monstrum'. An aberrant occurrence, a sign of distress within the natural order.

On Thursday, we'll jump right back into Waterloo Engineering. You'll have the opportunity to show off your design skill at Junkyard Wars, where you'll help build a series of contraptions to impress EDCOM. When you participate in m.ARCH, you'll see how we plan on leaving your mark on main campus.

Back in Cambridge on Friday, we'll get you ready for school — school keys and studio set up. Getting your drafting kit is going to feel like the holidays!

Saturday will wrap up the week with the Black & Gold varsity soccer game, our Final Feast, and a Masquerade.

As the Architecture Federation Orientation Committee (ArchFOC) and your HighArchs on EngFOC, we're here to help make this week as worthwhile as possible. Getting adjusted to life in Cambridge is both exciting and challenging. As you and your classmates begin shut-



ArchFOC: Michelle Bullough and Daniel Abad

ting around this week, we hope to acclimate you as best — and as quickly — as possible. If you have any questions, feel

free to stop us or any yellow jackets.

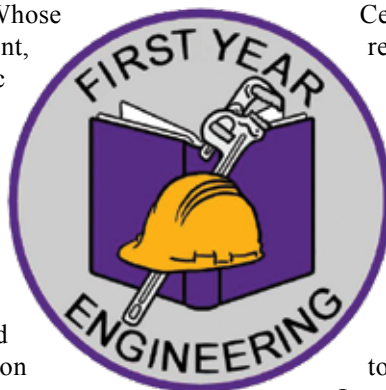
We hope you're geared up for the adventure that is Orientation Week!

Engineering Society First Year Services

SARAH-ROSE LANCASTER
FIRST YEAR COMMISSIONER

This Fall, the Waterloo Engineering Society will be introducing exciting new services designed specifically for first-year Engineering students. These services will include a new mentorship program which will pair incoming students with an upper-year mentor who will act as their guide throughout the term. The first-year students and their mentors will be invited to participate in several social

activities, such as a "Whose Line is it Anyway?" event, and several academic success events, such as discussions on how to succeed during Midterms and Finals. If you would like sign-up to have a First-Year Mentor, please visit: bit.ly/froshmentor and complete the registration form.



Certain services will also be returning during the Fall Term, notably Resume Critiques, where First-Year students can have their resume critiqued by an upper-year student, to ensure they appear desirable to potential employers. The Resume Critiques Directors will also be hosting Interview Skills Sessions in

order to help First-Year students prepare for their first interviews.

Look out for September's Upcoming Events:

Meet Your Mentors & EngSoc 101

Monday, September 16
6:00 p.m. — POETS Lounge

Come and meet your Upper Year Mentor and learn what the Engineering Society can do for you!

Resume Critiques

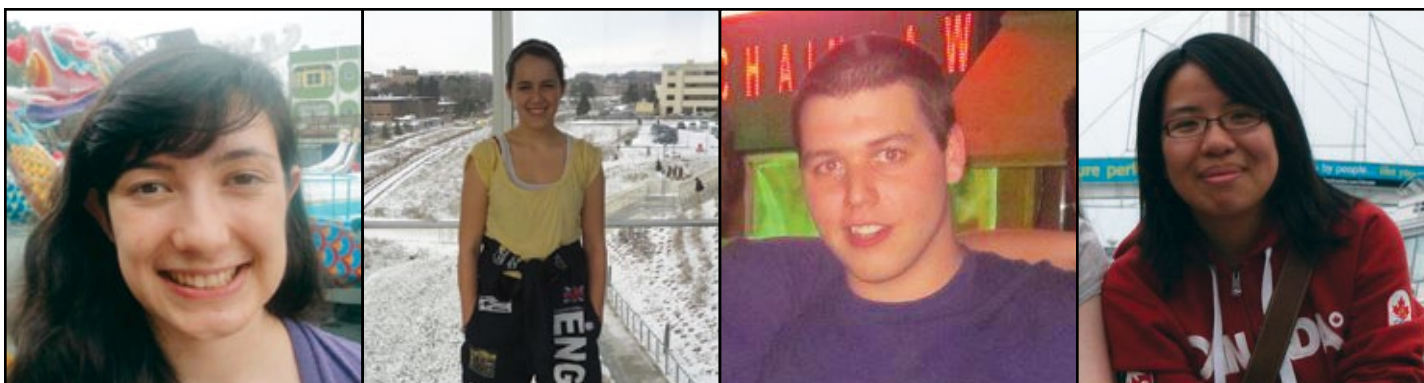
Tuesday, September 17 &
Thursday, September 19
6:00 p.m. — J.R. Coutts Engineering
Lecture Hall (RCH)

Have your resume critiqued by an Upper Year Peer.

JobMine Party

Saturday, September 21
1:00 p.m. — Carl Pollock Hall (CPH)
Multimedia Lab

Come apply to JobMine while gaining insights from upper-years about the job application process.



Fall 2013 First Year Services Team (from left-to-right): Sarah-Rose Lancaster, Allyson Francis, Joseph Dykstra, Christina Shum