The Inside sCo-op is an e-publication that is released bi-monthly by Co-operative Education & Career Services. This term’s editor is Jennifer Pepper.

**Feature Articles**

- **Weathering the Economic Storm**
  An exclusive interview with Larry Smith about what students need to consider .......................... 03

- **Joel Spolsky Speaks at MC**
  A co-op employer & software expert talks about the battle between suits and geeks................................. 04

- **Powered by the Sun, Fuelled by Co-ops**
  The team of the Midnight Sun chat about their recent trip to the Canadian Auto Show.............................. 07

**Student Profiles**

- **Co-op Student of the Year 2008**
  Profiles of the exceptional recipients................................. 05

- **Working in the Tatham Centre**
  Meet the new set of faces working for you!....................... 08

**Credits**

**CONTRIBUTORS**

- Pam Waechter, Career Services

**STAFF EDITOR**

- Olaf Naese

**PHOTOS**

- Dianne Naughton, UW Audio Visual Dept.
- Mohab El-Hakim. UW Audio Visual Dept.
- Chris Hughes, Campus Graphics
- Joel Spolsky, Fog Creek
- Andrea Lam

**INTERVIEWED STUDENTS**

- Nahir Khan, 2B Computer Science
- Branden Shepherdson, 3B Computer Science & Business
- Rashid El-Ladki, Leah Osterhoudt, Cody Bryant, & Wesley Leong, University of Waterloo Midnight Sun Team

**Special Thanks:** Lisa Ter Woort, Sue Johnston, Lily Lo, Andrea Lam, & Aleena Khan
You may be thinking about applying to professional or graduate school and typically you apply to these programs a year prior to your anticipated start date. However, some programs require prerequisites or experience and this can take several years to acquire. Unfortunately, too many students leave researching, requirements, or gaining experience too late.

Remember, if you are considering applying to faculties of Education, most institutions consider classroom experience an asset and it is important to have experience with the age group that you wish to teach. If you want to become a doctor, optometrist, pharmacist, physiotherapist or occupational therapist it is important that you have done some volunteer work and/or job shadowing prior to your application. Being able to write or speak about these experiences when completing your application and in the interview will be an asset.

Many applications require that you write an admission test as part of the application process. You may need to write the following depending on the application requirements:

- **MCAT** – Medical college admission test
- **DAT** – Dental admission test
- **PCAT** – Pharmacy college admission test
- **OAT** – Optometry admission test
- **LSAT** – Law school admission test
- **GRE** – General Records Exam (required by some graduate programs)
- **GMAT** – Graduate management admission test

You may also be interested in joining the UW Pre-Med Club, UW Pre-Optometry Club, UW Pre-Dental Club, UW Pre-Pharmacy Club, or Legal Studies Society in order to help gain volunteer experience. You can get involved with these clubs through their attendance at Club Days which are held in September and January at the Student Life Centre.

Career Services has resources to guide you through the process of applying to professional or graduate programs. Check it out at: careerservices.uwaterloo.ca.
Facing a harsh economic reality, co-op students are now being asked, more than ever, to increase their flexibility in regard to employment. Unfortunately, many misinterpret this message to mean that you are now on your own in a giant job pool without any water wings for support. This sense of anxiety presents a serious problem, says Economics Professor Larry Smith. He’s seen too many students behaving in ways “dangerous to themselves”.

Having been responsible for teaching ten per cent of the university’s alumni, Smith, a distinguished economics professor, has seen three economic recessions in the past and has much to say concerning how students need to approach their careers.

In terms of the severity of the situation Smith says, “they are right to be anxious...I’m anxious on their behalf...But some students are falling into the trap of thinking, ‘Oh well life sucks I’ll do the best that I can.’” This is not a career strategy, insists Smith. Instead of focusing on their feelings toward the market, it is more important for students to begin to discover the structural changes underway in the economy. If you do not see the changes taking place, you put yourself at risk.

Adaptability is a key component in an ever changing market, Smith says, “It’s the flexibility that CECS is absolutely totally right to hammer away at as it is the essential skill. Being flexible does not mean ‘take anything that comes along.’ That’s not what CECS said. We have never said that, nor are we about to say that. We ask that you be realistic.”

“The nature of work itself is changing and more work is becoming contract or contingent,” he says and, frankly, contract work may not be a student’s preference. But Smith reminds students respectfully that, “The market doesn’t care what you prefer.” Moreover, long before the recession had occurred, the process further accelerating contract work had already begun.

As students, we need to be aware that we can no longer plan our careers around our parent’s work search strategies. What has been successful in the past is no longer applicable as competitive pressures have risen. To simply mimic the last generation’s approach is ill-advised.

It is also important to recognize that this is no small challenge for CECS. Smith points out that, as the nature of work changes, the nature of how we help to find work must also change. While CECS is working proactively to initiate new approaches to the job market, it is imperative students work with the process and meet CECS half way.

As the largest co-operative education program in the world, the focus remains supporting young people and helping them rise to the challenge of responsibility. Yet workshops at Career Services are often underwhelmed with demand and, in a time like this, Professor Smith insists students become self motivated and accept responsibility as to how prepared they are to weather an economic storm.

“The student who has done it correctly, that has taken advantage of the services, a more focused individual...okay, that person has to struggle a bit...but that person is still standing. The other guy is sitting on the floor whining”.

“It is also important to recognize that this is no small challenge for CECS. Smith points out that, as the nature of work changes, the nature of how we help to find work must also change. While CECS is working proactively to initiate new approaches to the job market, it is imperative students work with the process and meet CECS half way.

As the largest co-operative education program in the world, the focus remains supporting young people and helping them rise to the challenge of responsibility. Yet workshops at Career Services are often underwhelmed with demand and, in a time like this, Professor Smith insists students become self motivated and accept responsibility as to how prepared they are to weather an economic storm.

“The student who has done it correctly, that has taken advantage of the services, a more focused individual...okay, that person has to struggle a bit...but that person is still standing. The other guy is sitting on the floor whining”.

#1) Take jobs that contribute to your credibility
In other words, don't brand yourself with “any job will do” types of positions. While it is OK to accept a job working as a bartender, it is not okay to stay there for more than nine months and let the wave of the next year’s graduating class advance on the job market. Your skills become stale and opportunities you are still a candidate for will pass you by. Although you may explain to an employer why you worked a certain job, such as bartending, due to the economic recession, you need not get stuck in that position too long because you are then seen through the eyes of an employer as lacking in ambition or purpose.

#2) Find your passion and avoid narrow jobs that limit exploration of your interests
“"If you are to be competitive you must do what you love. What does an employer want from you? Excellence. How can you possible deliver this excellence if at the same time you do not enjoy what you are doing? It has nothing to do with you diligence. If you do not enjoy what you are doing, you will never compete with the person who does”. Choose a job that lets you explore many aspects of a potential career.

#3) Work with the Process @ CECS
Update your résumé and skills inventory; attend employer information sessions, and Career Service Workshops to hone your skills. Make a habit of checking JobMine daily for re-posted jobs. Opportunities are still available; it’s up to you to remember the key: be flexible.
Joel Spolsky, globally-respected software developer, author of four books, and Yale Computer Science graduate, spoke recently on Computer Science Education and the Software Industry in the MC. Organized by the UW Computer Science Club, with funding provided by Mathematics Endowment, the room was packed to capacity with students looking to hear about Joel's perspective on the current state of CS education.

In his experience, there are two approaches to quality software that come from the "geeks" and the "suits." While the geeks want to establish logic and testing in order to maintain quality, the suits don't care about "buggy" software as long as people are buying it.

The suits are winning the battle now, but their win is not necessarily a bad thing says Joel, because they recognize diminishing returns once people are happy with the level of quality provided.

Where the problem lies is that there is no automated way to see if a program looks good, so the aesthetic appeal the suits are after is not tested by the geeks. These two ways to define quality create the problems we can see in some of today's popular software.

The outcome of the Battle between both parties results in two distinct management styles that Joel refers to East and West coast management.

East coast management is all about "command and control" while West coach management allows programmers to do their jobs as they please, as long as they are providing bug free, quality software. This style provides an environment for programmers to thrive, and serves as the philosophy behind Fog Creek Software.

Two University of Waterloo students, Nahir Khan and Branden Shepherdson, both shared amazing experiences at Fog Creek last summer and attended Joel's talk. Both students confirmed the company's philosophy to provide for their developers. They felt the developers truly do get the star treatment at Fog Creek.

Nahir advises that those applying should, "be interesting on your résumé. Marks? Yes, they matter, but the number one thing they are looking for is passion, explain that you love what you do." He warns that interviewees are presented with problems to solve on the spot so they need to be prepared.

Perhaps Spolsky's most important remark was about how to have influence as a programmer. He looks for co-op students who can write code very well and very clearly.

Starting up Fog Creek in 2000 with the intent to treat programmers with respect, run the company on original ideas, and solve customer problems, Joel's honest policy and talented team have led to a success that you can be apart of. Visit http://www.fogcreek.com and look for postings on JobMine in the fall ♦

“The number one thing they are looking for is passion; explain that you love what you do”
As Gaurav Jain, the Vice president of Polar mobile describes, “I interact with many employees and leaders of all ages...Ray is among the most impressive individuals I have come to know.” Securing clients such as Toronto Maple Leafs, Elle, and TheStreet.com through business proposals, Ray used his skills to propel Polar Mobile, a leader in end-to-end mobile solutions to publishing companies throughout North America, into a highly competitive market. Ray single-handedly founded the Marketing and Quality Assurance and Consumer Marketing divisions which increased consumer subscription over 450%. Ray’s firm belief in youth is evident in his leadership as president of Impact Entrepreneurship Group, which is the largest non-profit, youth-run organization in Canada promoting the importance of entrepreneurship. Recently, Ray was awarded with the University of Waterloo’s President’s Circle Award and the Waterloo Record’s Top 40 Under 40 Award for his achievements with Impact.

As a Research Assistant at the Ontario Cancer Institute at the Princess Margaret Hospital, Safia examined the effects of cancer therapeutics in conjunction with a pharmaceutical company. Appointed to lead a project, Safia designed, built, troubleshoot and quantified a tissue microarray and developed a protocol designed specifically for her lab’s use. Instead of using single histological slides per patient, a single slide can now be used for 100 patients, saving the lab more than $5,000 per protein it tests. Safia’s work will lead to her co-authorship of manuscripts in the future. Safia is a residence Don at Mackenzie King Village, has attended the National University of Singapore on an academic exchange and travelled to Cambodia last January to work with underprivileged children.

Employed at the Ministry of Energy and Infrastructure, Dafne read lengthy bilingual documents and compiled research of the history of past projects, province-wide, to prepare a Minister’s briefing notes about the Quebec Infrastructure Plan and for an intergovernmental presentation. Dafne also compared the documents, both French and English, regarding the $6-billion agreement Ontario signed with the Federal government for infrastructure funding. Finding errors within the French document, Dafne’s edits were sent to the Assistant Deputy Minister and sorted out with the involvement of lawyers, translators, and federal bureaucrats. Dafne was selected to represent the University in Cork, Ireland in the 2009 World University Debating Championships and is now President of the Debate Society.
As a Clinical Research Assistant at the Odette Cancer Centre in Toronto, Amanda explored the prevalence of pain flare after palliative radiotherapy for painful bone metastases. She was instrumental in the development of an international Phase III double-blind randomized control trial with the National Cancer Institute of Canada (NCIC) for prevention of this phenomenon. Within the past five months, Amanda has continued to add to her list of publications in print with first authorship of four newly submitted manuscripts. With the support of the American Society for Therapeutic Radiology and Oncology (ASTRO), Amanda has become the first undergraduate student to present at the premier scientific meeting in radiation oncology in the world for two consecutive years. In April 2008, Amanda received the Best Oral Presentation Award at the Provincial Palliative and End of Life Conference in Toronto and travelled to Edinburgh, Scotland and Liverpool, England to present at two prominent international medical conferences in oncology. This year Amanda has won the provincial Co-op Student of the Year Award and received an honourable mention from the Canadian Association for Co-operative Education.

Prior to Elyot’s employment at Semacode Corporation, the company’s barcode recognition software for camera phones would fail almost two thirds of the time. Elyot made monumental progress in three months by redesigning the entire image processing algorithm using original mathematical models he developed. Elyot’s new decoding routines succeeded over 98% of the time and ran faster than their predecessors, making Semacode’s software the best among its competitors. On his fall work term, Elyot was equally impressive as he performed research in theoretical computer science under the supervision of UW Professor Jeffrey Shallit. Having solved several open problems concerning formal languages and infinite words, his resulting manuscripts are awaiting publication in academic journals. Extensively involved within the UW community, Elyot enjoys intramural sports and has lead the Campus Crusade for Cheese as “Commander in Cheese”. Elyot is also an amateur DJ and musician, performing at local nightclubs and parties.

Hired for two work terms as a Junior Policy Analyst for the Strategy, Policy and Planning Branch of the Ministry of Government Services, Ontario (SPPB), Renee conducted research that would save both money and energy through a “green” information technology approach. Renee helped to establish the emissions impact of activities and develop a conscientious IT strategy. She became the “resident expert” on a technical issue concerning desktop computer power management and has aided in the SPPB adopting a pilot project which is estimated to reduce power consumption by 40 million pounds of C02 emissions each year if implemented. All the while, Renee volunteered in the sustainability office at the University of Toronto and organized a toy drive for the Salvation Army.

Congratulations also goes out to those selected to receive honourable mentions for this year’s award including…

Michelle Cho, 2A Environmental Engineering
Cailin Hillier, 2A Geological Engineering
David Liu, 2B Mechatronics Engineering
David Zhu, 3B Actuarial Science, Finance Option
Shaelyn Culleton, 3A Biology
The team of the Midnight Sun recently took to Toronto’s Roger’s Centre on reading week to display their solar creation at the Canadian International auto show.

An interesting factor of the Midnight Sun project is that a few of the team members are on work terms. Cody Bryant, an arts major and team outreach manager, says, “I think there are a lot of students who believe it’s solely an engineering project. I thought that myself for the longest time…but as soon as I got here I realized how much this is open to everyone.”

The top Canadian team for ten years running now, the group has students from nearly all faculties including arts, environment, and math, all enhancing skills in project management, event planning, improvisation and presentation.

While the Midnight Sun may run on solar power, team member Rashid explains the reaction from the crowds at the show was what kept him energized. “The one thing I took from it was to see everyone’s faces on seeing the car. To explain to people that it wasn’t a UFO or a submarine…people were amazed.”

In fact, due to the strong exposure the team has received from the Canadian media, which includes a documentary on the Discovery Channel, people were actively searching for the group’s display.

Leah Osterhoudt, a member of the business team, was surprised by the amount of people who recognized or had previously engineered the car, “I had a number of alumni come by and say, ‘Oh yeah I worked on that when I was in Waterloo.’ ”

“I think there are a lot of students who believe it’s solely an engineering project”

To make the project more applicable for the future, each year there are new stipulations for the races. This year for instance, the team must incorporate headlights and upright seating. Additionally, they will lower the vehicle and move the driver’s cockpit from the front end to the rear for better air flow.

The team is currently working on restoring the Midnight Sun IX for the Formula Sun race in June. Meanwhile, the Midnight Sun X, estimated to be completed in November, is in the design phase which should be complete at the end of this term.

In true UW spirit the team said that while it’s easy to get caught up in the “racing” aspect of the project, “We tend to have good relations with all the teams and help each other out.”

Although the team competes against private companies, UW’s goal differs, Rashid explains, as it is not simply to create a solar car. “The main intention is to raise environmental awareness, promote energy efficiency and the applicability of renewable resources, and so, on a whole, we are gearing toward a greener tomorrow.”

The hard working group reminds everyone to start checking the weekly updates on their website (http://www.midsun.uwaterloo.ca/www). The next few events for the Midnight Sun, such as the open house, will occur on campus and they would love for students to stop by to show their support for UW’s historic DIY project.

Many UW generations have left their mark on the Midnight Sun
Customer Relations/Special Projects Associate
Andy Al-zaghawi provides support at the Information Centre and conducts graduate interviews

The WatPD Tutors and Program Assistants include Emily Fitzpatrick, Kriselle Fernandez, Mark Tse, Mansien Wu, James Lam, Vince Pileggi, Delia Garrido, and Andrew Blakey. These employees facilitate students’ learning through feedback and peer mentorship. They are responsible for marking your PD assignments and also have the opportunity to undertake a special project that will develop and manage the future improvement of the course.

JobMine Technical Support Representative
Sheharyar Hyder, provides assistance with JobMine for students and employers. He also sets up new hardware and software and assists during interviews with technical setups.

Marketing Assistant
Chantelle Bilodeau, assists in the development and coordination of marketing campaign tactics and researches potential employers to expand the CECS network.

Media and Publications Associate
Jennifer Pepper writes and designs publications, contacts media outlets, and co-ordinates the co-op student of the Year Awards.

Co-op Advisor & Faculty Relations Assistant
Pauline Peng, corresponds with students and employers on behalf of Co-op Advisors and gathers statistical data as required to prepare reports.

Employer Services Advisors
Tory Baskerville and Jessica Jackson are the primary on-campus contacts for employers as well as the field co-ordinators. They are responsible for all aspects of the employment process from the initial contact to the recruitment process.

Web Developer and designer
Amanda Etherton assists with the maintenance, support, and improvement of the CECS web spaces and Access databases.

You can work as a co-op for co-op! Many of these jobs are featured on JobMine each term so be sure to apply! Please note that for all jobs (excluding the Marketing Assistant, Media & Publications Associate, Web Developer/Designer, and WatPD Tutors) you will need to have received OSAP funding in the term prior to apply.