Embracing the past and Inventing the Future: Celebrating 25 Years

This year, the Faculty of Engineering celebrates its 25th anniversary. When it was founded in 1983, the Faculty consisted of just one department – electrical engineering. In 1987, the Department of Mechanical Engineering came into existence and, a year later, the department of computer science joined the Faculty. The first graduating class in 1988 had only 27 students. As of 2006, the Faculty offered accredited bachelor of engineering programs in electrical, computer, and mechanical engineering. It also offered Bachelor of Science degrees in computer science and Master’s and doctoral degrees were available in all these disciplines.

Dr. Peter Wild is a professor in Mechanical Engineering and the NSERC Chair in Sustainable Energy Systems Design Engineering. In 1994, he was a recent graduate of UVic’s Mechanical Engineering program. “It was exciting to be a graduate student in the early days of the Department of Mechanical Engineering. I was one of a small but enthusiastic group of graduate students who had the good fortune to work with a dynamic team of faculty members, many with newly minted PhDs. Today, the Department is much larger in all respects, but the excitement of those early days persists.”

In 2003, a full degree program in Software Engineering was created. Susan Perkins is a Software Engineering graduate now working for BMW Victoria. “I found the staff and instructors to be warm and helpful. I loved my time at UVic. My degree is very valuable, and in my experience of job-seeking, many employers are seeking applicants with this kind of degree.” As of July 2007, this program was among the first of its kind in Canada to be accredited and we have graduated seven software engineers. Ron Desmarais is one of those graduates. “The Software Engineering program at UVic has prepared me for the complexities of current issues with IT systems we have come to rely on. I personally feel that this first step in my own growth as a Systems Engineer is the best thing I could have ever done.”

In the past 25 years, the Faculty has thrived. In 1988, there were 16 faculty members. Now there are 85 across all disciplines. This is significant growth for such a young faculty and proof that when we say that we are going to invent the future, we have the resources to do just that.
Message from the Dean

Not only has it been a busy winter, it has been a busy 11 years. In June, I will complete my term as Dean. There have been many exciting changes in a little over a decade. I am honoured to have been part of the amazing growth that has taken place with respect to the creation of new programs and degrees, increased research activity across the Faculty, and the opening of the new ECS building. But, most of all, my colleagues and I take great pride in the students who have studied in our Faculty and the success of our alumni.

I am also pleased with the increase and diversification of our outreach initiatives. Within our Faculty, strategies for recruitment and retention are ongoing. We have organized many engaging outreach opportunities for youth from K-12. As an example, faculty members and graduate students in the department of Computer Science have offered outreach workshops with the Tsawout, one of the First Nations bands in Saanich. After an initial offering of workshops, the off campus children came to visit UVic in February to do some computer programming. They also visited a fuel cell lab and learned about alternative energy and the environment. This same group of students came back during March Break for two days to participate in a CSI camp where they also got to learn about biomedical engineering.

In February, we hosted the latest of our semi-annual day-long high school outreach visits. 188 students representing 13 schools came to visit UVic Engineering. They spent the day visiting booths highlighting the diverse activities in the Faculty, eating pizza at Nibbles n’ Bites, listening to presentations and participating in lab tours hosted by each department/program.

Science Venture wrapped up its Saturday morning kids clubs in early March. They held all boys, coed, and all girls’ camps. Campers had the opportunity to become engineers for a day when they designed their very own elastic powered vehicles. We are now gearing up for Science Venture summer camps for which registration begins in April. If you have a son or daughter in the K-12 school system who would be interested in Science Venture, please email sventure@engr.uvic.ca or check out the Science Venture website at http://scienceventure.uvic.ca/home/ for more information. Science Venture also has a volunteer program for students in grades 10 and 11. Information about junior counselor opportunities can also be found on the website.

This summer, I begin a year-long sabbatical after which I look forward to continuing on with the Faculty of Engineering as a faculty member. I look forward to watching, with pride, as the Faculty continues to thrive and expand.

- D. Michael Miller, PhD, PEng

Climate Change, Fuel Cells & The Beginning of a Fantastic Career

Aimy Bazylak is destined to be part of the climate change solution. She earned her engineering physics degree in 2003 at the University of Saskatchewan and in 2005 she completed her Mechanical Engineering Master’s Degree at the University of Victoria. Currently, she works under Dr. Ned Djilali and Dr. David Sinton in pursuit of a PhD in Mechanical Engineering at UVic.

Aimy is passionate about both her fuel cell research and the opportunities she has to connect with people beyond campus. She enjoys talking to middle and high school kids, civic organizations and business associations about energy and climate change. She, herself, is dedicated to supporting locally grown foods and a lifestyle defined by waste reduction and recycling. Aimy also believes in encouraging girls and young women to considered engineering as a career.

Aimy Bazylak
Photo: Photo Services
Full Circle: From Outreach Participant to Senior Vice President of Power Monitoring and Control at Schneider Electric

Have you ever questioned whether or not outreach to kids works? Well, it does. An innocuous grade 9 career day visit marked the beginning of Jacques Van Campen’s journey towards becoming an electrical engineer and a Senior Vice President for Schneider Electric. In 1988, Jacques Van Campen was one of 26 engineers in the first graduating class from the Faculty of Engineering.

When asked why he chose to study at the University of Victoria, Jacques explained that he had originally enrolled in a program at the University of Waterloo, but came back to UVic when the Engineering Co-op Program was put into place. In his mind, UVic was a great school and the addition of a co-op program convinced him to move back home. At the time, UVic’s class sizes were small, there were brand new sparkling labs, and there was superior one on one support from professors. Jacques remembers many of his professors, most of who are still actively teaching. He recalls that Vijay Bhargava, who is now an Adjunct Professor at the University of British Columbia, was a wonderful student advocate and, that Adam Zielinski had a great passion for undergraduate learning.

Jacques Van Campen has come full circle. A teenage participant in outreach in the 1970s, today he is a father of four and an executive in a prominent company. He is an advocate for scientific literacy and outreach to kids from grade school through to UVic. He believes in nurturing and supporting UVic grads so that they stay in the community and he feels that we all have a responsibility to engage kids as soon as they show an interest in engineering and technology.

It was her passion for sharing her research, her outstanding academic record and her commitment to improving the environment that earned Bazylak the 2007 inaugural Bullitt Environmental Fellowship in November 2007. This prestigious award comes out of the Seattle-based Bullitt Foundation which supports responsible human activities and sustainable communities in the Pacific Northwest and is worth $100,000 US over two years.

A perfect 9.0 GPA student, a marathon runner and an individual involved in her community, Aimy Bazylak does not limit her passion to school and public speaking. She is also a member of UVic’s H2Drive team who are currently designing and building a fuel-cell hybrid vehicle to compete in the Shell Eco-Marathon at the California Speedway in Fontana in April.

The License to Engineer, have you got yours?

Whether working on attaining an engineering degree or you’re now ready to start building your career or you’re looking to hire a someone with the right education, the right experience and the right attitude—a P.Eng. is the right move. Only a Professional Engineer is licensed to practise engineering in Canada. Professionally accountable to their licensing body for the work they do, Professional Engineers offer the ingenuity, hands-on experience and commitment to continuous professional development you require to help your business build business.

For more information see: http://www.apeg.bc.ca
From the first blip that ‘pong’-ed its way across the screen in the 1970’s to the immersive 3-D gaming worlds of today, video games have provided inspiration for more than a generation. We love to play them; however have you ever asked the question, “How are they designed?”

The first ever Video Game Design Challenge (VGDC) hosted by the Faculty of Engineering and the Design Engineering Office (DEO) ran in February 2008 to help students answer that question.

36 video game enthusiasts hailing from four different faculties across the UVic campus created 13 original video games. On February 29th the video games were exhibited and judged in the Engineering Laboratory Wing Lobby based on concept, graphics, sounds, game play, and lasting appeal by a panel of judges. The panel included a faculty member, a video game industry professional, the participants themselves, and guest judges from Stelly's Secondary School.

First prize went to Carl Sverre, Karen Campbell, and Jon Yellowlees for their game Rebound Extreme. Honourable mentions went to Devin Lumley, Sean Gordon, and Mohammed Alwahibi (Limbo); Jack Sun, Torben Werner, and John McIntosh (Crescendo); and Jason Wynja, Andrew Herriot, and Tom Nute (Classic Arcade).

Praise was high for the quality of the video games including praise from Mike Rayner, Chief Technology Officer of Electronic Arts Black Box Studios and keynote speaker for the event. Mike, along with others at the event marvelled at the quality of the games that students were able to produce in only nine days. Don’t take our word for it; the games are posted on the DEO website (see below). Try them out and we hope to see you at the next VGDC!

Event Website:

Video Game Entries:

According to recent road safety surveys, fatigued driving is a common problem amongst Canadian drivers. According to a 2004 Traffic Injury Research Foundation study titled Drowsy Driving, 17.8% of all fatal crashes and 25.5% of crashes causing injury were fatigue related. Recent statistics reported that 20% of drivers in Canada (an estimated of 4.1 million drivers) admitted to falling asleep or nodding off at least once while driving in the past 12 months. Just like drugs or alcohol, sleepiness slows reaction time, decreases awareness, and impairs judgment. Just like drugs or alcohol, it can be fatal when driving.
In January 2005 Nicholas Negroponte, founder of MIT’s Media Lab, stunned the globe at the World Economic Forum in Davos, Switzerland, by announcing his intent to spearhead the development of a $100 laptop for students in third-world countries. This effort was named the “One Laptop Per Child” (OLPC) program and the proposed $100 machine the XO. Fewer than three years later, mass production of this new and innovative technology has begun and, in December 2007, children in Peru, India and Uruguay were among the first to begin using the XO’s.

As part of UVic Software Engineering’s mandate to explore and investigate new technologies in collaboration with students, the Software Engineering Program is in the process of acquiring four XO machines through a recent promotion offered by the OLPC foundation called the “Give One Get One”. In this program, individuals or institutions can purchase laptops in pairs, with the caveat that one laptop from each pair be donated to a third-world country while the individual or group received the other.

To explain the motivation behind this acquisition, the director of the Bachelor of Software Engineering Program, Dr. Jens Weber, made the following comment with regard to the laptops: “These machines represent an impressive combination of both hardware and software engineering, all to meet the goals laid out by the OLPC foundation with regard to durability, functionality and usability in the developing world. By bringing these machines into the program students and faculty alike will have the opportunity to make use of them in courses and projects. In addition to the exciting prospect of working with these latest examples of new technology, the very nature of the OLPC program also affords engineering students the chance to make real world contributions by giving the software or ideas they develop into the emerging global community of OLPC users.”

The main concern related to fatigued drivers falling asleep is their high crash rate, as well as the type of crashes that they are most likely to get involved in. Indeed, up to 20% of serious crashes in the US are sleep-related; such crashes occur during both night-time and day-time.

Ben Widsten, Tiange Wang, Julie Lan, and Jordana Mah are four electrical engineering students who, under the supervision of Dr. Alexandra Branzan Albu, completed their ELEC 499 capstone project which designed a sleep surveillance system that could be used to monitor drowsy driving. The project’s aim was to detect in real-time a precise event, namely sleep onset. The team’s goal was to show that real-time tracking of a single visual cue (closed versus open eye state) would yield good detection performances. Once completed, testing showed that there was good accuracy for the eye-blink detection.

For more information on the Software Engineering Program, please visit: http://www.software.engr.uvic.ca
Long-Term Student Recruitment: 
Women in Engineering and Computer Science (WECS)

The office for Women in Engineering and Computer Science, started in 2003 and lead by coordinator Anissa Agah St. Pierre, reaches out to elementary, middle and high-school students, particularly girls. WECS uses school-visits, on-site visits at UVic, and LEGO Robotics workshops to introduce kids to engineering and computer science. Through this program, Anissa has reached approximately 2000 students in BC, 65% of which were girls. In addition to outreach, WECS aims to retain female students in our programs. This is done through community-building events, workshops with relevant themes, and offering a point of contact for the students.

In a typical LEGO Robotics Workshop, students build Lego robots from the LEGO Mindstorm robotics kits. They program their robots to complete various challenges including obstacle courses, a river rescue mission, bowling competitions, sumo robots, ducklings that follow a mother duck, robots that behave like dogs, and robots that dance. This year WECS has opened up some workshops to boys as well and is proud to announce our first Mother’s day and Father’s day festivals.

Recently, WECS, together with SPARCS (Solving Problems with Algorithms, Robots, and Computers), an outreach initiative in the Department of Computer Science, launched an After-School Club. The aim of the club is to teach children in grades 3-5 and Grade 6 and up about programming, robotics, theoretical concepts, and problem solving using LEGO Robots, PicoCrickets, the programming environment Scratch, and Computer Science Unplugged activities. Computer Science Undergraduate Steven Lonergan started the Club as a pilot project in May 2007. The program is now taught in blocks of six consecutive weeks, with the next block starting April 2nd (Grades 3-5).

For retention and recruitment purposes, WECS calls all alumni to support the initiatives in providing accessible examples about the life of an Engineer or Computer Scientist in Industry, in particular in interdisciplinary settings. Currently, WECS collects profiles for a new web presence as well as contacts of alumni interested in contributing in workshops for middle and high-school students.

If you are interested in registering your child for a camp or would like to volunteer, please contact Anissa Agah St. Pierre at anissa@uvic.ca or 472-5851.

Are your kids considering UVic? Experience UVic is a campus-wide event on May 24th for prospective students in Grade 11 and 12 and their families. Come and enjoy a free, fun and informative day together! More details and registration at www.uvic.ca/experience.
For many engineering graduates, the most memorable part of their degree was the time spent applying their skills through co-op work term placements. For mechanical engineering student Georg Tuchlinski who travelled to Munich, Germany to work for BMW this past fall, the memories will last a lifetime.

Working for the coveted car company was a long time dream of German born Tuchlinski, who is fluent in the language. But getting the job meant getting over the low salary. “You don’t work in Europe for the money,” says Tuchlinski, “you go for the experience.”

In Germany, an engineering apprenticeship is considered a great privilege, and many students there do it for little or no money. But there are many other incentives. “They let students drive the cars, because they know we love that,” he explains. “I was in a 275 horsepower 1 Series BMW on the second week on the job.”

He also snagged one of the few available spots in BMW staff accommodations, where he could walk to work and not pay more than his monthly wage for rent, as he would have if he had lived elsewhere in the urban centre. Tuchlinski also loved the work place mentality: “My boss just said, show up sometime in the morning and leave in the afternoon. There was a lot of flexibility.” That, and there was great food and, of course, good beer.

Perks aside, the work was challenging and well worth the trip. Tuchlinski’s main task was to assist with vibration tests done on inline 6 Otto-cycle engines to ensure that they would provide the quietest possible ride. “It was awesome because other people aren’t going to see these designs for years,” says Tuchlinski.

Now Tuchlinski has an impressive name on his résumé that he is sure will pay off in the long run. “Not many people can say they’ve worked at BMW. I’m sure this is going to help me next time I’m looking for a job. It was a really, really great experience all around.”

Congratulations to Daniel C. Vanderster who has recently accepted a Post-Doctoral position at C.É.R.N. where he will be working on grid computing for the ATLAS experiment. This experiment involves about 3000 scientists around the world in physics and engineering. Daniel is completing his Ph.D in Electrical Engineering at UVic.
From Power Measurement to Schneider Electric: World Leaders

Until December 2005, the Schneider Electric office located at 2195 Keating Cross Road in Saanichton, BC operated under the company name, Power Measurement. What began as a family-run startup, grew into a global leader in power and energy management. Power Measurement pioneered the revolution from analog to digital metering by introducing the world’s first microprocessor-based three-phase power and energy meter in 1984.

Brad Forth was a UVic co-op student when he first walked in the door of Victoria’s Power Measurement. He became president of the company, leading a group of more than 360 employees with annual revenues upwards of $70 million from products that save money and reduce energy usage. Under his leadership as CEO, beginning in 1999, the company grew by an average of about 30 per cent each year. Power Measurement was twice ranked by Maclean’s magazine as one of the top 100 companies to work for in Canada. Brad was UVic’s 2005 Distinguished Alumni Award recipient and he was responsible for hiring another UVic Engineering Alumni, Jacques Van Campen who took on the role of Vice President.

Today, Schneider Electric develops enterprise level software, intelligent energy meters and a comprehensive range of engineering, training and support services. Schneider also continues to be a leading participant in the Engineering Co-op Program. Since the mid 1990’s, the company has hired more than 200 co-op students at UVic and over 25 per cent of the technical staff are former co-op students. The evolution, growth and progress of Schneider Electric are mirrored in the skill set that new grads offer the company. According to Jacques Van Campen, Senior Vice President of Power Monitoring and Control, the graduates that walk through Schneider’s glass doors have always been exceptional. But, today’s graduates have a more rounded skill set. They are more mature, have greater self-confidence and people skills and their breadth of knowledge has prepared them to meet an ever-changing multi-dimensional environment. They possess the tools required to engage with the challenges and advancements inspired by globalization.

Stay in Touch

Tell us where you are and what you are doing. Send us a photo and we’ll print your bio in our next newsletter. Please email engralum@uvic.ca

Our Facebook Engineering Alumni Group has a membership of 235. Have you joined yet?

Dr. Michael Miller has acted as Dean of Engineering for 11 years. In June 2008, he will be stepping down from this position.

If you would like to honour Dean Miller, you can do so by making a donation to the UVic Chapter of Engineers Without Boarders. Please send your donations care of Christine Roome

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