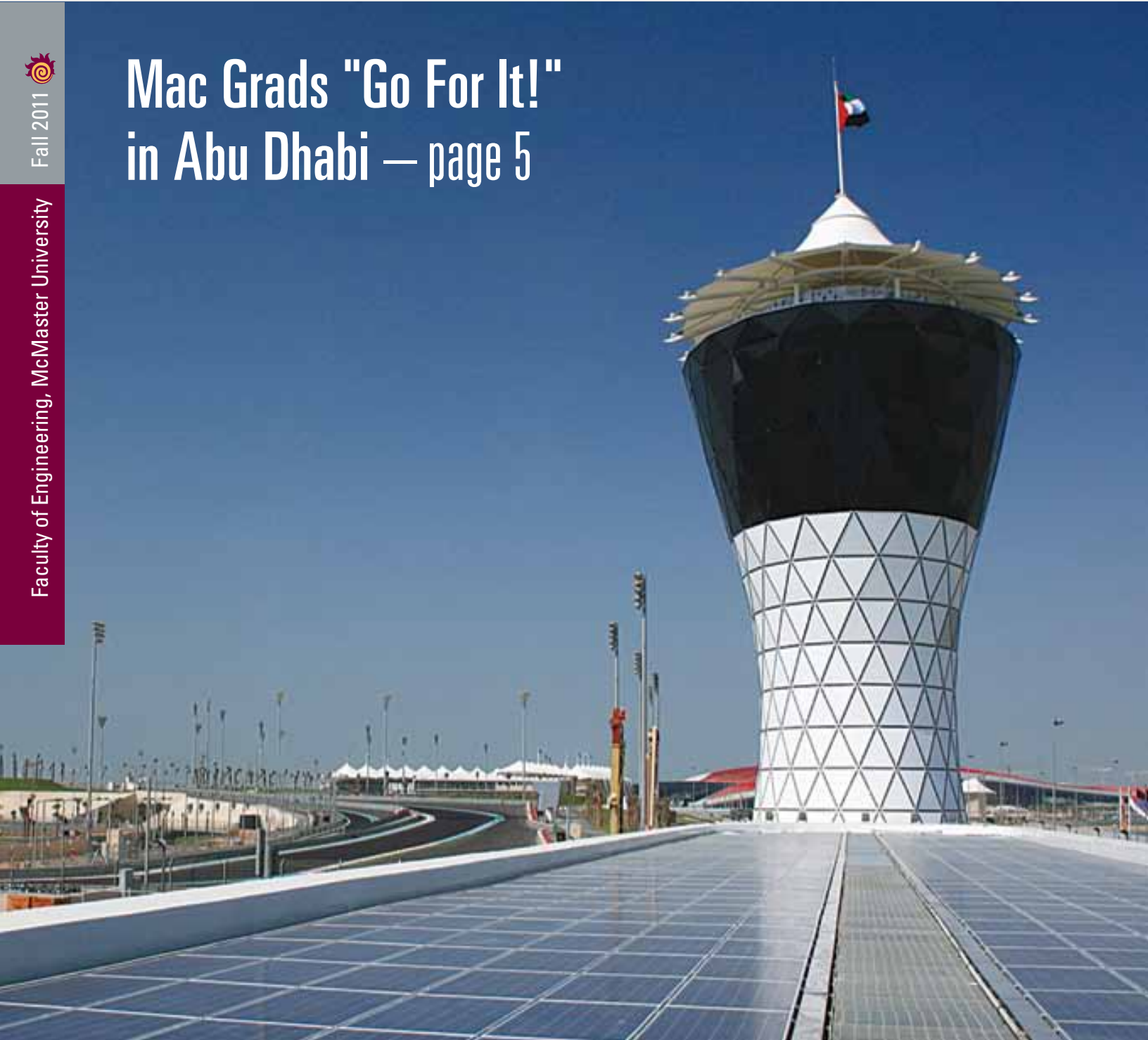


# THE MacEngineer

Mac Grads "Go For It!"  
in Abu Dhabi — page 5

Fall 2011

Faculty of Engineering, McMaster University



50th Anniversary Camp XIII — page 8



## Dean of Engineering — Dr. David Wilkinson

It is always interesting to learn about the exciting things MacEng graduates are involved with and this issue of the MacEngineer covers a few of these. They involve a wide range of disciplines, from toys to IT, and a wide geographic area, from Europe to the Far East. As you read on you will learn about two Ontario companies that have commercialized products related to water, although in a very different way. Oliver Schraa and Spencer Snowling are president and VP respectively of Hydromantis, which provides modeling software to the water treatment industry. This company was originated by Gilles Patry when he was on faculty at McMaster. Dr. Patry is now president of the Canadian Foundation for Innovation. Wyeth Tracy's water business on the other hand deals with the playful nature of water, by designing and manufacturing "architectural presentations of water". Moving further afield you'll learn of Irene Yang's role as director of product management for AMD in Hong Kong and Orest Goricanec's company in Switzerland offering IT solutions to Telecom custom-

ers. Finally, there is the solar energy company based in Abu Dhabi led by four young Canadian engineers, two of them McMaster engineering grads - Erik Voldner and Sander Trestain. I had the pleasure of visiting Erik and Sander in Abu Dhabi this Spring during a swing through the Middle East. I was very impressed by the scale of their facility and by the innovative solutions they had developed to make their business a success.

I am in fact constantly inspired by the many successes of our alumni in a wide range of fields and endeavours. I have learned a lot about ingenuity, creativity and leadership by listening to the stories alumni tell me about how they made their way in the world following graduation. It is of course gratifying to learn how much they appreciate their McMaster education, but it also helps me evaluate how we might do better. This has led to a new initiative to provide more formal leadership training to our current undergraduate students, particularly those engaged in the many extracurricular clubs and teams sponsored by the Faculty.

A simple analogy I like to use - imagine you are starting a new business and want to recruit your team. But there are two serious constraints. All of the employees up to and including the president must be part time (in fact they have less than 10% of their time to spend on your business) and even the most accomplished employee has to retire within

4 years of joining the company. Now imagine trying to establish a stable business under those constraints. But this is exactly the way our clubs and teams operate. This makes it all the more remarkable how successful they are. What I have realized though is that by offering some help early on, they could achieve even more. So two recent McMaster grads, Kyla Fisher and Matt Wright, have been working diligently over the summer to establish the SELECT program - SELECT standing for "Student Engagement, Leadership Education, Career Training". The program will help provide student leaders with a toolkit they can use to jumpstart their careers while still at McMaster. We have developed a solid program outline and curriculum and have begun searching for young alumni and friends who would be willing to serve as facilitators. If this interests you please let us know. I am very excited about this endeavour, which is really a first step towards establishing ExCEL - the Engineering Centre for Experiential Learning that I discussed in the last MacEngineer.

Before closing, I would like to invite all of you to the gala in honour of the 50th anniversary of Camp XIII of the Ritual of the Calling of an Engineer. The gala will celebrate all of our successes, and will be capped by an address from alumnus Stephen Elop, CEO of Nokia. It should be wonderful evening of fun and celebration. ■

## Mac Grad Named to North American "40 Under 40"

MechEng & Management grad **Braden Kurczak** ('03) has been named to North American "40 Under 40" lists by each of *Consulting-Specifying Engineer Magazine* and *Building Design + Construction Magazine*. He is specifically recognized for his impact on Canada's green building industry.

Currently, Braden works at Enermodal Engineering in Kitchener, Ontario, a consulting firm specializing in creating green buildings, where he is one of the company's LEED experts and head of its Green Buildings division. Included in Braden's noted projects is the new Engineering Technology Building at McMaster, which is LEED Gold certified. ■





## Reducing Wastewater Treatment Guesswork



Spencer Snowling



Oliver Schraa

There are huge costs associated with planning and building facilities for wastewater treatment. Suppose planners and designers could determine, before construction, whether a proposed plant will operate effectively and efficiently. Well, they can by using the services of a Hamilton, Ontario-based company whose two top principals are McMaster grads.

Hydromantis Environmental Software Solutions, Inc. ([www.hydromantis-software.com](http://www.hydromantis-software.com)) offers a variety of options for achieving design, operational performance and planning improvements for clients looking to build, upgrade and/or monitor maintenance and operations in wastewater treatment facilities. Founded in 1985 by former McMaster Civil Engineering professor Gilles Patry, the company develops simulation/optimization and design & costing software programs, and provides consulting services and training. Hydromantis has clients around the world in government, in planning, engineering and construction firms, and in universities and research facilities.

"It's certainly an interesting field with many exciting challenges," says **Spencer Snowling (CivEng & Mgmt '93)**, the company's VP of Business & Product Development. Dr. Snowling (PhD, McMaster University '00), studied under Dr. Patry while at McMaster. "I really learned a lot about modelling from him. Originally, I thought I'd be a groundwater engineer, but I was persuaded to join Hydromantis."

The company's hallmark product is GPS-X, a software application that creates a model of a wastewater treatment plant. It runs simulations on various configurations, for both new and existing facilities - to test the design, assess potential bottlenecks, and identify areas for improvement. All of this helps the client achieve capital and operating cost benefits.

Company president **Oliver Schraa (ChemEng '92, M.Eng. '95)** got excited about modelling during Prof. Tom Marlin's third-year Process Control course. "He really got me interested by providing good practical examples. Plus, he made it fun."

Hydromantis' CapdetWorks, a wastewater treatment plant preliminary design and costing program, provides a platform for evaluating design alternatives, including their relative life-cycle costs. Another product, WatPro, simulates a drinking water treatment plant's operation regarding its disinfection processes, allowing an operator to observe the impact of adjusting dosage, thereby realizing potential cost savings.

TOXCHEM is a product that can track the fate of metal and organic chemicals through a collection system or treatment process, and provides a clear display of contaminant concentrations, loadings and fate. The program helps clients save money by reducing the number of laboratory analyses required for monitoring. Specifically developed for the industrial wastewater treatment field, potential clients include chemical manufacturers, pharmaceutical companies and refineries.

Dr. Snowling says the company's name combines "hydro", meaning water, and the Greek word for prophet or sage. At Hydromantis, "We see a future where all water and wastewater treatment systems are designed, built, and operated to the highest standards at the lowest cost with the assistance of modelling tools." ■

### On the Cover:

Shams Tower, Yas Marina Circuit, Abu Dhabi



## Do you have something to say or news to share?

We would like to hear from you.

Contact **Carm Vespi**  
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# Wyeth Tracy — Spray 'n Splash Your Way to Success

PROFILE



Many years ago, while watching kids play in the splash pool area at Ontario Place, **Wyeth Tracy** noticed something interesting. The kids, who seemed to be enjoying themselves, didn't have any toys – specifically, toys that

would enhance the enjoyment of water play.

Starting part-time in his basement, Wyeth designed play equipment – or in his words, “architectural presentations of water”. Today, Empex Watertoys ([www.watertoys.com](http://www.watertoys.com)) has its head office in Uxbridge, Ontario and operates a 20,000 sq. ft. manufacturing facility in Toronto. The company employs 25 people and makes over 100 styles of water features such as the aquasphere, splashin' rainforest, fanjet, kid pumpz and watertotter. Made of plastic and fibreglass, the structures offer

different forms and presentation of water, and have become instant successes in shallow water pools and spray parks around the world. Over 90% of Empex structures are exported to out-of-country clients.

“They are very tactile and completely safe,” Wyeth says. “We are very conscious of liability, safety and maintenance issues where play equipment is concerned. Because these items are in shallow water locations, parents can relax and enjoy watching their children enjoying themselves.”

Civic water pools and spray parks are not the company's only clients, though. Toys from Empex have been purchased by resorts, hotels, cruise ships, zoos, and recreation centres. The play equipment is even featured on a shopping mall roof in Singapore.

Creating these designs has been the dream job for Wyeth, a mechanical engineering grad ('72), who enjoyed pulling apart old Volkswagens as a teen and who always felt he had a creative bent.

Although Empex was one of the first in Canada to develop waterplay features, there are now a number of companies in the business, with Canada leading the sector.

After graduating, Wyeth did extensive travelling and worked for a time in South America. Then he settled into the entertainment and parks industry, working for both Canada's Wonderland in Vaughn, and later Ontario Place.

His first sale was a water bike to a client in Japan. His personal favourite design is the new “aquacircus”, which combines almost all of the company's water structures into one. The most challenging installations are on rooftops and cruise ships.

“You can invent this stuff forever,” he laughs. “There will always be a market because kids enjoy it so much.” ■

# Irene Yang — Engineering Degree Means Independence for Female Grad

PROFILE



**Irene Yang** (ElEng & Mgmt '01) has some great advice for girls in high school who might be thinking of entering the field of engineering:

“Do whatever it takes to be financially independent. This is especially critical

for women in the 21st century because the world is becoming extremely competitive. So, find a good balance between your personal interests and global market trends.”

Engineering is a good choice, she adds, because it teaches problem-solving, in addition to providing the technical foundation that a student will learn in his or her specific engineering area.

Irene's interest in electrical engineering was sparked by the development of the

Internet and the proliferation of mobile and PC products in the late 1990s. She chose the combined Engineering & Management course as the result of “a personal interest in the business success of technology ideas”. She specifically chose McMaster because she was intrigued by the general first-year program.

Currently, Irene is Director, Product Management at Advanced Micro Devices (AMD), based in Hong Kong. The company ([www.amd.com](http://www.amd.com)) is a global semiconductor design innovator, and develops graphics and computing technology that power PCs, game consoles, and Internet servers. AMD has extensive engineering, sales, marketing and operations in Greater China. Irene is responsible for Greater China product strategy, planning and business development.

Being a woman in engineering has been an interesting experience, she says. “The technical foundation allows me to be invited and respected in engineering conversations.

The management side has enabled me to grasp financial arguments and discussions.” She does admit that because she now works in the business and marketing side, most customers assume she has no background in electrical engineering.

“When they find out, everyone sits up straighter and acts surprised and more respectful – almost embarrassed.” While this can be amusing, Irene acknowledges that, as a result of having an engineering degree, she is able to develop closer working relationships with customers — something that is crucial to success in business these days.

Irene is married to **Stephen Yang**, also a Mac grad (CompEng & Mgmt '00), and the couple have lived in Hong Kong since 2010. Their favourite pastime is travel. ■

# Mac Grads "Go For It!" in Abu Dhabi



What would you do if you were presented with what appeared to be a once-in-a-lifetime business opportunity? For two newly-graduated Mac engineers, the answer was easy: "Go for it!" Especially when it meant moving around the globe to a country they had never visited and where the sun always shines.

**Sander Trestain** (MechEng & Mgmt, '03) describes how it happened. While working in Toronto after graduating, he and his good friend **Erik Voldner** (MechEng, '03) met two grads from the University of Western Ontario, Sami Khoreibi and Foad Mardukhi. All four, it turned out, were interested in renewable energies. In 2007 they learned of an opportunity for a company to build a solar power plant in a city in the United Arab Emirates (UAE) which, given the country's many glorious sunny days, seemed like a sure thing.

In a matter of months, between October 2007 and June 2008, the four entrepreneurs formed a company, quit their Toronto-based



jobs, moved to Abu Dhabi and secured their first contract. By 2009, the 10-megawatt, \$50-million solar power plant in the desert city of Masdar was complete. Covering 55 acres in size, it's the largest such plant in the Middle East.

"It all happened quickly," Sander, 31, acknowledges with a laugh. "But we wanted to be the first."

Their company, Enviromena Power Systems ([www.enviromena.com](http://www.enviromena.com)) is a

"solar integrator", finding opportunities for governments who want to build large solar power plants. After a contract is awarded, the company handles the design and construction phases. Erik manages the business development and engineering side, while Sander supervises construction. Enviromena has grown to a staff of 29, and has over one dozen projects to its credit, having expanded into North Africa. It's won a number of awards, and in 2009 Sander was the recipient of the "Engineer of the Year in the Middle East" award by MEP (mechanical, electrical and plumbing sector in the UAE).

"You learn how to learn in Engineering," Erik, 30, notes. "We learned on the fly."



The biggest challenge has been working through the country's business-related bureaucracy. "It took us five minutes to register our company in Canada over the Internet," says Erik. "Here, it took seven months to get registered." Part of that, he explains, was the issue of finding a category under which to place the company. "We were the first here to do this type of work. We had to work with the government to create the (solar energy) category." Talk about a challenge!

On the whole, though, both confirm that the experience has been a positive one. And, they add, the location is ideal for two sun-loving bachelors.

Sander's advice for budding entrepreneurs: "Be sure you want to do it, then jump at the opportunity."

Erik agrees. "There are lots of opportunities out there. There's a huge demand for engineers and engineering skills. Go for it." ■

# Orest Goricanec — Eng Grad Finds Success in Europe

PROFILE



For a young engineering grad with a knowledge of telecommunications, a love of winter and a passion for skiing, moving to Switzerland would seem to be a brilliant career choice. While all of these are certainly

true for **Orest Goricanec** (CompEng '85), he admits the move was really prompted by love.

"My wife is Swiss. Since Switzerland is a great place to live and work, my wife and I decided to move here in 1985, after my graduation from McMaster."

Orest immediately got a job with Ascom, the country's largest telecom solutions and equipment manufacturer. "I applied to 15 companies for work and, thanks to my degree and the education I received at McMaster, all 15 offered me an engineering

position!" The engineering degree has been "essential" to his career, he adds.

Orest started at Ascom as a software developer, and later worked as both a project and product manager, then sales engineer. In 1999 he left the company to start his own firm with friend and colleague Bruno Pini. SunTiS, which now employs 20 engineers, develops and implements turnkey IT solutions for telecom customers and other IT industries worldwide. Services include project management from the feasibility study period to design, turnkey engineering solutions for the telecommunications, security, military, traffic and marketing industries, and software and systems development, installation and maintenance. The co-owners have divided the corporate responsibilities: Orest handles customer relations, external partnerships and project issues, while Bruno looks after finance and personnel. SunTiS is based in Bellinzona, in the Italian-speaking part of Switzerland

When deciding on a field of study fol-

lowing high school, Orest knew he wanted something that would be challenging and that would offer good opportunities in the years after graduation. The McMaster program, which combined computer technologies and electrical engineering and which was new in the 1980s, caught his attention. So, too, did the fact that the telecommunications courses being offered were given by leading experts in the field. "It was this combination of computer engineering and telecommunications, and the opportunities resulting from such an education, which attracted me to McMaster," he says.

Orest and his wife Barbara, a registered nurse, live in Riazino, where he enjoys skiing and motorbike excursions. Two of their three girls have already left home to pursue careers or university. The third is very active in a local volleyball club, and Orest currently volunteers as its president. ■

## Dr. Kresta Wins the Rutherford Award

**Suzanne Kresta** (ChemEng, PhD '92) is the recipient of the Rutherford Award for Excellence in Undergraduate Teaching at the University of Alberta. Dr. Kresta, a professor in the Department of Chemical & Materials Engineering, joined



the University as assistant professor in 1992. She teaches a second-year course on Mass and Energy Balances and a fourth-year design course. Of her teaching style, she says: "I work hard to design courses that meet student's learning needs. I try to understand their problems and teach in ways that help them get past those problems." Her students especially appreciate how she provides tools and processes that help them organize the huge amount of information involved in their courses, and assists them in acquiring the vocabulary and language skills necessary for writing reports. During her time at Mac, Professors Don Woods and Phil Wood were great mentors in the area of problem solving techniques, she notes. Dr. Kresta is both "pleased and honoured" to have received the award. "It's important to have prestigious teaching awards at a university. It demonstrates that the institution values teaching." ■

## New Appointments in Engineering

In May, the Department of Civil Engineering appointed the following three endowed Chairs:

### **Prof. Samir Chidiac**

Chair in Effective Design of Structures (established 2002)

### **Prof. Michael Tait,**

Joe Ng-JNE  
Consulting Chair in Design, Construction and Management of Infrastructure Renewal (established 2000)

### **Prof. Wael El-Dakhkhni,**

Martini, Mascarin and George  
Chair in Masonry Design (established 1999)



# 50th Anniversary of Camp XIII - RSVP Form

Please submit the completed form by Friday, October 7, 2011

Name:  Student ID #:

Department & Year:

Address:

Phone:  Email(s):

Job Title & Business Name:

Business Address:

Business Phone:  Business Fax:

Name of Guest (First & Last Name):

Please Indicate Special Needs (be specific):

Dietary Restrictions:   Vegetarian Meal

**Cost: \$80/person (cash bar)**

Payment Options:  VISA  MasterCard

Name on Card:

Card Number:

Expiry Date:

Fill form out fully, print it off and fax to Engineering Alumni Office.

**Table R.S.V.P. If you would like to reserve a table for your group, please read below.**

We can accommodate groups of up to 10 individuals who would like to sit together. Please provide full name, department, graduation year and whether they are an obligated engineer and the camp they attended, or whether they are someone's guest. Only one individual from your group needs to fill out the details. Please note that if the person who is organizing the group is not paying for the total number of guests at the table, then we will require a registration form from each individual or couple for payment.

	Name	Obligated Engineer or Guest	Camp Attended
1.	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.	<input type="text"/>	<input type="text"/>	<input type="text"/>
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5.	<input type="text"/>	<input type="text"/>	<input type="text"/>
6.	<input type="text"/>	<input type="text"/>	<input type="text"/>
7.	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.	<input type="text"/>	<input type="text"/>	<input type="text"/>
9.	<input type="text"/>	<input type="text"/>	<input type="text"/>
10.	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Engineering Alumni Office**  
**McMaster University**  
**Faculty of Engineering, JHE A201D**  
**1280 Main Street West**  
**Hamilton, ON, L8S 4L7**  
**Fax: 905-546-5492**

PLEASE NOTE: UNLESS WE ARE NOTIFIED 3 WEEKS IN ADVANCE "NO SHOWS" WILL BE CHARGED

# 50th Anniversary



## Dear Obligated Engineers

**The Ritual of the Calling of An Engineer, Camp XIII, McMaster University is celebrating its 50th Anniversary.** To mark this incredible milestone, we are inviting you to a semi-formal event, which will be held at the Oakville Conference Centre on Friday October 28th 2011 at 5:30 p.m.

Our history as a camp is a significant one and we have grown quite a bit in size over the past 50 years. The first Kipling ceremony was held in the Council Chamber (Gilmour Hall) and 23 engineers were obligated in 1961. Later, it was moved to Convocation Hall and then St. Mary's High School. Now, the ceremony is held in the Burrige Gym at McMaster University in order to accommodate more than 900 attendees. Can you believe how much the Camp has grown?!

Do you remember your own Kipling Ceremony? Do you remember the oath you took with your peers? Join us for a Renewal Ceremony to mark this special anniversary. The iron ring has taken each of you down different career paths but its significance is a common tie amongst all engineers. Renew your oath with your brother or sister, father or mother, your husband or wife, your son or daughter or even work colleagues who have also attended Kipling but perhaps not with you. What an opportunity to create a lasting memory.

To mark our anniversary, the Camp Wardens have planned an evening full of festivities, which are sure to take you on a trip down memory lane.

*The Wardens invite you to help mark this considerable anniversary. No other camp has held such a celebration and we won't see another like it for at least 50 years. Be a part of our history!*  
*For more information regarding the event or to view photo galleries of some of our best pranks, please visit [http://www.eng.mcmaster.ca/engalumni/events/Camp\\_XIII\\_Anniversary.html](http://www.eng.mcmaster.ca/engalumni/events/Camp_XIII_Anniversary.html)*

### Here are a few highlights planned for the evening:

1. Our special guest and keynote speaker, Dr. Stephen Elop, B.Eng. Computer Eng. & Mgmt '86 and President and CEO of Nokia Corporation, will share his memories of the ceremony and how the engineering profession has shaped his professional journey.
2. Slide show of "best ever" Kipling pranks submitted by you and judged by our young alumni committee. The most outstanding/outrageous prank winner will receive \$500.00.
3. Meet with Dr. David Wilkinson, Dean of Engineering and Dr. Patrick Deane, President and Vice Chancellor, McMaster University.
4. Iron Ring renewal Ceremony (30 minute oath renewal Ceremony).
5. Past Wardens of Camp XIII, Past Deans, Faculty of Engineering and all faculty and staff will be invited.
6. Reminisce with old friends, classmates and professors.
7. Silent Auction – the proceeds will create a "CAMP XIII Bursary" for students who could not otherwise afford to attend university. Tuition for the engineering program is expensive and for some, it is out of reach without a little help. As an alumnus, what better way is there for you to give back than to help someone follow in your footsteps?  
**Note:** If you would like to donate artwork, sports or show tickets, gift certificates, services provided, cell phones, home décor items or anything you wish, please contact Carm Vespi. Please see link below for the silent auction page: [http://www.eng.mcmaster.ca/engalumni/events/Camp\\_XIII\\_Anniversary\\_Silent\\_Auction.html](http://www.eng.mcmaster.ca/engalumni/events/Camp_XIII_Anniversary_Silent_Auction.html)
8. Dinner and Dance.

YOU ARE CORDIALLY INVITED TO A GOLDEN ANNIVERSARY CELEBRATION IN HONOUR OF

# Camp XIII



Friday, October 28, 2011

5:30 P.M.

Oakville Conference Centre

2515 Wyecroft Rd.

Oakville, ON L6L 6P8

- Semi-formal
- Renewal Ceremony
- Silent Auction
- Dinner & Dance

## Guest Speaker



**Dr. Stephen Elop** – Will share some of his remembrances and also how the engineering profession has shaped his professional journey!

Computer Engineering & Management graduate Stephen Elop has been named President and Chief Executive Officer of Nokia. The Finland-based mobile communications giant appointed the 47-year-old McMaster grad to his new position on September 10, 2010, making him one of the most prominent Canadian-born executives in the world.

Elop, a software expert, comes to Nokia from Microsoft Corporation, where he served as President of the company's business division. Previously, he was Chief Operating Officer of Juniper Networks, a leading provider of high-performance network infrastructure and, prior to that appointment, he served as President of worldwide field operations for Adobe Systems Inc.

The Faculty of Engineering at McMaster University awarded an Honorary Doctor of Science degree to Stephen Elop in 2009.



# 50th Anniversary Camp XIII Silent Auction Donation Form

The Silent Auction proceeds will create a bursary fund in Camp XIII's name, which will be given to a student(s) who could not otherwise afford to attend university. Your generosity will allow a student(s) to pursue their academic goals and also discover their professional ones.

**We are looking for a variety of items, or you may have a unique gift in mind.**

Please Note: These contributions will not be eligible for charitable tax receipts.

## Here are a few suggestions:

- Gift Certificates
- Chef Services
- Landscaping Services
- Artwork
- Sports Tickets
- Opera Tickets
- Cellphones
- Gas Cards
- Home Décor Items
- Office Equipment
- Etc...

Name:

Company Name:

Department and Graduation Year:

Address:

City, Province & Postal Code:

Phone Number:

Description of Gift:

Cash Value:

I will mail my gift to the Engineering Alumni Office

I will drop my gift by the Engineering Alumni Office

**Deadline Date: Friday, September 23, 2011**



# Applause for Annual Awards



Special award recipients Kon Max Wong, Pierre Côté and Juergen Schachler.

The eighth annual Applause & Accolades Awards, held in May, recognized 50 faculty, students and community members for their achievements and contributions to the University. Over 250 faculty, staff and guests joined Dean David Wilkinson at the gala celebration, held in the LIUNA station in downtown Hamilton.

This year's special recipients included:

- **Juergen Schachler**, president and CEO, ArcelorMittal Dofasco. Mr Schachler was presented with the Faculty of Engineering Leadership Award. ArcelorMittal Dofasco engages in research collaborations, provides student co-op and internship placements, and has offered full-time employment opportunities to McMaster grads for many years.

- **Pierre Côté**, president, Côté Membra Separation Ltd. and former chief technology officer, Zenon Environmental Ltd.. Mr Cote, who is the recipient of this year's L.W. Shemilt Distinguished Engineering Alumni Award (Ph.D. '86, Civil Engineering), was recognized for his breakthrough discoveries in water purification membranes – work that began while he was a Ph.D. student at McMaster.

- **Kon Max Wong**, professor of electrical and computer engineering, and Canada Research Chair in Signal Processing, McMaster University. Prof. Wong received the Faculty of Engineering Research Achievement Award in recognition of his work in advancing the science and technology of signal processing, which has contributed significantly to improved wireless communication systems.

The Faculty of Engineering Leadership Award was established in 2004 to recognize an outstanding citizen who has contributed to engineering, the university and the community. The L.W. Shemilt Distinguished Engineering Alumni Award was established in 2006 to recognize the contributions of leading Faculty alumni. ■

## Congratulations!



Prof. Farmer



Prof. Soltys



Prof. Deen

**Computing and Software Chair Named** – Professor **William Farmer**, who has been a member of the Department of Computing and Software since 1999, is the new Chair of the Department, succeeding Prof. Martin von Mohrenschildt. The five-year appointment began on July 1.

Prof. Farmer earned a B.A. in Mathematics from the University of Notre Dame, and an M.A. in Mathematics, M.S. in Computer Sciences, and Ph.D. in Mathematics from the University of Wisconsin-Madison. His research interests include applied logic, mechanized mathematics, symbolic computation, theorem proving systems, mathematical knowledge management, and formal methods in software development.

**Congratulations! Prof. Soltys** – This year's recipient of the McMaster Student Union (MSU) Teaching Award (2010-2011) for the Faculty of Engineering is **Michael Soltys**, associate professor of computing and software.

Prof. Soltys, who received his Ph.D. from the University of Toronto in 2001, conducts research in the intersection of logic, complexity and algorithms. He is currently the graduate advisor for computer science for the Department.

The other Faculty of Engineering nominees were: Tim Davidson, professor of electrical and computer engineering, and Joey Kish, associate professor of materials science and engineering.

Students nominate and choose the recipients of the MSU Teaching Awards. The MSU announces the recipients for all the Faculties at its annual Teaching Awards Celebration held in late March.

**Professor Receives Prestigious Award** – In May, Prof. **Jamal Deen** of the Department of Electrical and Computer Engineering and the Canada Research Chair in Information Technology received the 2011 Electronics and Photonics Division (EPD) Award from the Electrochemical Society. The award was presented at the 219th meeting of the Electrochemical Society in Montreal.

The EPD Award recognizes Prof. Deen for his pioneering contributions to noise and physics-based modelling of semiconductor devices, as well as innovations in experiments.

In 2002, he was the recipient of the Society's Dielectric Science and Technology Division Award. With the current honour, Prof. Deen becomes the first Canadian to win both the Electronics and Photonics Division and the Dielectric Science and Technology Division awards from the Electrochemical Society. ■

# Energy Audits Could Help Save Money



A MacEngineering student-run energy audit conducted on behalf of local school boards could help save over \$2 million in energy costs annually.

If all the audit's recommendations were implemented by the Hamilton-Wentworth District School Board and the Hamilton-Wentworth Catholic District School Board, natural gas consumption could be reduced by more than 5 million cubic meters -

enough to heat more than 2,140 homes - and electrical consumption would be reduced by almost 2.8 million kWh.

Seven mechanical and civil engineering students working on co-op terms conducted the two-year energy audit, in a collaborative research project with Union Gas. The students first classified all the schools into archetype groups having similar characteristics such as school size, operation, building

envelope, electrical, heating, cooling and ventilation system properties. Full energy audits were then conducted on a school that represented each of the archetypes. The findings for each school were applied to the rest of the schools in the archetype to calculate savings potential. The process of using archetypes greatly reduced the time it would normally take to fully audit all the schools.

Conservation measures that were identified include: re-caulking windows, adding insulation, using more efficient lighting, implementing advanced heat recovery systems and boilers, and investing in solar and wind generating systems. ■

## Project Showcase Highlights Innovations

The annual final-year Project Showcase organized by the Department of Electrical and Computer Engineering gave over 130 students the opportunity to wow colleagues and teachers with their innovations. Working in teams, the students had to develop a project idea and see it through completion. The projects not only earn a grade, but winners share in \$2,400 prize money awarded during the one-day Showcase event. A total of 40 projects were entered this year.

A winning team is selected from each of electrical engineering, computer engineering, and biomedical engineering, and each receives \$500. Winning projects included: the Dynamic Demand Controller, which monitors and conserves the power usage of appliances; Projecting into the Future, which projects images onto a screen that can be manipulated by touch; and the Semi-Autonomous Navigation System of Smart Wheelchairs, which allows a caregiver to guide wheelchairs through the use of a hand-held wand.

The runner-up prize of \$300 went to: MOBILEYEZ, a smart phone-based home surveillance system; Low Cost 3GHz VNA, for use by researchers at the university, and Central Sleep Apnea Detection and Stimulation.

Many thanks to this year's event sponsors: RIM, GE, Sigma, and Texas Instruments. ■

## Taking Research to Market

Science and research are much-needed and greatly valued processes conducted at a university. Somehow, though, all those ideas and innovations must be transformed into useful products for society. That's the message behind the 4th Innovation Showcase held in early June in the CIBC Hall of the student centre on campus.

**Jim Cotton**, associate director of the McMaster Institute for Energy Studies, was one of the University's researchers taking part. Dr. Cotton has partnered with Pizza Pizza to develop heat recovery units that will use and store at least a portion of the 90 per cent of energy that is wasted from the chain's pizza ovens. The energy can be used in many ways: to heat and cool the stores, to power hot water tanks, or it can be stored in thermal batteries. If enough heat is recovered, it could even be fed back into the power grid.



The Showcase, hosted by the University's research commercialization unit and the McMaster Industry Liaison Office, highlights research projects that are in the process of being commercialized. ■

## Experts Assist Media

Following the massive earthquake and tsunami in Japan in March 2011, the media called on McMaster engineering physics and civil engineering professors for background facts and analysis.

**Dr. John Luxat**, **Dr. Adriaan Buijs**, **Dr. David Novog**, all professors of engineering physics, and **Dr. Samir Chidiac** and **Dr. Wael El-Dakhakhni** from civil engineering were kept busy answering questions, confirming information and providing advice for such media outlets as CBC, CTV, *The National Post*, and *The Toronto Star*, for example.

In addition, Prof. Luxat, NSERC Industrial Research Chair in Nuclear Safety Analysis, was contacted by a radio program in Australia and the Weather Channel for his comments about the Fukushima nuclear reactor situation. ■

## Inaugural Chair Named



A female professor in the Department of Civil Engineering has been appointed as the inaugural Chair in Heavy Construction. Prof. **Saiedeh Razavi** started her new role on July 1.

Prof. Razavi joins McMaster from Concordia University where she was doing postdoctoral studies. She earned her Ph.D. in Civil Engineering at the University of Waterloo. Prior to coming to Canada, she received a M.Sc. in Computer Engineering (Artificial Intelligence) at Iran University of Science and Technology, and a B.Sc. in Software Engineering at Sharif University of Technology, both located in Tehran.

Prof. Razavi has considerable experience in large scale industrial construction projects, and is interested in the areas of sensing and information technology for construction and infrastructure management, logistics, and transportation.

The Chair in Heavy Construction was established to provide leadership in advancing innovation in the heavy-construction sector, attracting and developing talent, and contributing to the advancement of a modern, durable and sustainable infrastructure in Ontario. An advisory team from the heavy construction industry, who are appointed by the Chair, will advise on priorities in these areas. Thirteen regional construction organizations pledged \$1,252,500 million over five years to establish the Chair, and that amount has been matched by the University. ■

## Device Aids Diagnosis of TB



Mac grad **Michael Schertzer** (MechEng & Mgmt, BEng '03, MAsc '05) is hoping to save lives one drop at a time. The postdoctoral fellow at the University of Toronto is developing a hand-held microfluidic device for point-of-care diagnosis of Tuberculosis (TB). Using a small droplet of sample fluid from a patient mixed with small amounts of testing chemicals, the device provides a diagnosis within 30 minutes.

"This is so helpful to patients, especially those in developing countries, many of whom are immuno-compromised," he explains. Currently, samples from these areas are sent to European labs, an expensive and time-consuming process. "This device offers not only a faster diagnosis time, but the test is done on site in the field, and is more economical because it uses much smaller amounts of the test chemicals."

Statistics on TB in the developing world are "staggering", he adds. "Over one-third of the global population has TB, and infection rates are over one hundred times

higher in the developing world than in North America."

Dr. Schertzer and his team are grateful for funding they have received for research and development of the prototype device from Mitacs (through the Mitacs Elevate Postdoctoral Fellowship), Engineering Services Inc. (Industrial partnership), Natural Sciences and Engineering Research Council of Canada (NSERC), Ontario Centres of Excellence (OCE), The Department of Mechanical and Industrial Engineering (MIE) at the University of Toronto, and the Canada Foundation for Innovation (CFI).

In the spring, Dr. Schertzer took advantage of the 2011 Rising Stars in Global Health program from Grand Challenges Canada which is funded by the Government of Canada's foreign aid budget through the Development Innovation Fund, to create a video clip. The video outlines the purpose and benefits of the device, which is currently in prototype testing. (For more information on the Canadian Rising Stars in Global Health program and Grand Challenges Canada, visit ([www.grandchallenges.ca](http://www.grandchallenges.ca)).

While people could "vote" on the various research projects posted to the site, Dr. Schertzer says the most important benefit of the program was to help raise public awareness about research projects focused on improving global health, as well as providing networking opportunities among researchers. Dr. Schertzer's submission video can be watched on YouTube ([http://www.youtube.com/watch?v=\\_BvLlISbz5w](http://www.youtube.com/watch?v=_BvLlISbz5w)). ■

## Instruction Excellence Award 2011



**Carlos Filipe**, associate professor of chemical engineering, is the 2011 recipient of the President's Award for Excellence in Instruction at McMaster University. He received the award during the Faculty of Engineering Spring Convocation ceremony in June. Prof. Filipe was recognized for the personal interest he takes in his students' success, as well as his preparation

of quality course materials and his ability to engage students in the classroom.

Prof. Filipe is the fourth professor from the Faculty to receive the award. It was established in 1993 as an opportunity for the University to recognize outstanding contributions to education. The award consists of a citation of excellence and a \$5,000 honorarium. The recipient's name is also inscribed on a permanent plaque. ■



## PACE Lab Launched

The Partners for the Advancement of Collaborative Engineering Education (PACE) Lab officially opened in March 2011. Established by General Motors (GM) and PACE Partners Autodesk, HP, Oracle and Siemens PLM Software, the Lab provides McMaster engineering and technology students in both the Bachelor of Engineering and Bachelor of Technology programs with a global edge in the world of automotive design and engineering.

PACE has contributed state-of-the-art computer-based hardware, such as 3D naviga-

tion devices and engineering workstations, along with engineering software such as Siemens PLM Software NX and Teamcenter, and Autodesk Alias Design, Maya, and Sketchbook Pro. These products are used by automakers for product planning, engineering, analysis, and data management. Sixty-seven computer workstations have been installed in two locations at the University, one in the new Engineering Technology Building and the other in the John Hodgins Engineering Building.

Founded in 1999, PACE supports 56 lead-

ing academic institutions in 12 countries. Its goal is to prepare future engineers, designers, and analysts in mechanical design, engineering, analysis and manufacturing with the digital and collaboration skills they need to succeed in their professions. PACE students are introduced to product lifecycle management (PLM), which connects the development, production and after sales service stages of a product and has been widely adopted by the automotive industry ([www.pacepartners.org](http://www.pacepartners.org)). ■

## A new approach to leadership

Beginning this September, McMaster Engineering will be piloting an exciting and rewarding opportunity for undergraduate students! SELECT is a multi-level, session-based program designed specifically for Engineering students who are passionate about and involved in any form of extracurricular activity. SELECT will utilize leadership-oriented, hands-on training exercises to reinforce multi-, inter- and trans-disciplinary concepts linked to faculty clubs and teams.

The main goal of SELECT is to enhance student life at McMaster, and provide support to students in their extracurricular

endeavours. Each session will combine individual assessment, group activities and reflection, and an opportunity for students to develop applicable skills for their careers. The unique combination of co-curricular environments and experiential learning make SELECT stand out from other similar programs "SELECT is the opportunity for motivated engineering students to prosper.

Young McMaster Engineering alumni facilitate each module "a value-added bonus for any participant who wants to ask past undergraduates how McMaster University changed their lives! For further information, or to become involved, visit [select.mcmaster.ca](http://select.mcmaster.ca) or email [lead@mcmaster.ca](mailto:lead@mcmaster.ca). ■



# Campers L.E.A.P. into Fun and Learning

This year's Learning Enrichment Advancement Program – better known as L.E.A.P. – experienced its most successful summer ever. More than 180 high school students took advantage of the opportunity to learn about engineering and its place in society.

Four topics were offered: Introduction to Engineering (specifically geared to Grade 9 and 10 students), Engineering Technology, Engineering Design, and Bioengineering, which are targeted to students in Grades 10, 11, and 12. The two-week sessions run concurrently; a student can sign up for more than one camp during the summer. L.E.A.P. attendees explore various aspects of engineering while experiencing university life. Campers engage in lectures, hands-on activities, labs, industry tours, and work on projects specific to their chosen L.E.A.P. program.

Joel Cooper, L.E.A.P. co-director, said that it was important to have a program dedicated specifically to Grades 9 and 10 students. "In the past, we found it was difficult to engage and meet the needs of both a Grade 9 and a Grade 12 student who were taking the same program.

This was the fifth year for the Headstart

program. Headstart provides an opportunity for high school students who have been accepted into the fall 2011 program in the Faculty of Engineering at McMaster to earn transfer credits and help reduce their first year course load by 3 or 6 units. A total of eighty-five students enrolled in Headstart this summer.

L.E.A.P. has expanded to include non-summertime initiatives. During May and June, the engineering student instructors took workshops on physics, biology, and design into high school classrooms. "The travelling workshops were fully booked," says Joel. "We did three classes a day during a 20-day period, reaching over 1200 students." L.E.A.P. staff, along with their Venture colleagues, also gave a presentation during the Bay Area Science Fair's Activity Day, and sponsored two Science Fair awards of a free week of Camp.

Commenting on the success of the program, Joel says, "L.E.A.P. shows high school students how to turn their interests in science and engineering into a career. Because of the involvement of engineering professors and graduate students and the industry tours, it's a great way to do this." ■

# ChemEng Helps Celebrate Faculty's Anniversary

The early years in the Department of Chemical Engineering are recounted in a new book published in time to help celebrate the 50th anniversary of the first graduating class of the Faculty of Engineering at McMaster. *Chemical Engineering at McMaster, The Formative Years: A Brief History 1958-1982*, is written by professors emeritus **Cameron Crowe, Malcolm Baird, Archie Hamielec, Terrence Hoffman, Les Shemilt, and Don Woods**. The book focuses on the beginning years, starting with the appointment of **Dr. John W. Hodgins** as Dean of Engineering by then University President **Harry Thode**. The Department's five decades of success were fittingly remembered and celebrated at a festive book launch held on Saturday, April 30 in CIBC Hall in the McMaster University Student Centre. ■



Summer 2011 saw the ever-popular Venture Science & Engineering Camp attain its highest-ever enrollment. Over 1300 eager campers had the opportunity to learn about engineering, science, computers and technology through hands-on activities.

Venture is a summer day camp for students in Grades 1 to 8. Two streams are offered: Engineering and Science with classes on dissection and chemistry, and Computers and Technology focusing on computer and electronic projects, and a robot-building project. Each class has two instructors and two high school leaders in training.

# Best Year Ever for Venture

Elysia Jellema, camp director, is obviously very pleased at the success of the program. "It is very exciting to see Venture camp thriving; knowing that we are able to provide life-changing experiences to so many youth is incredible."

Venture stretched its wings during the fall and winter months, offering Kids Clubs for elementary students in Grades 1 to 4 and Grades 5 to 8. A total of 120 students enrolled for the program. Elysia feels the large commitment to expand the program was well worth it.

During May and June, Venture ran free weekly Clubs in conjunction with the Boys & Girls Clubs of Hamilton, an organization that offers opportunities to single-family, low-income students. Seventy-five young people took advantage of the fun and learning, all provided at no cost to the students. After a visit to the McMaster campus, one Club member exclaimed, "This is the best day ever!"

"Venture plays a key role in developing

the next generation of Engineers," says Elysia. "This would not be possible without the strong support we receive from the Engineering faculty." ■



Venture is excited to announce their new school year programming that offers youth the opportunity to participate in our interactive engineering programming all year round!

- Girls Clubs for girls in Grades 1 – 8
- Kidz Clubs for youth in Grades 1 – 8
- Robot Experience Days for children in Grades 5 – 8

For more information check out our website at [venture.mcmaster.ca](http://venture.mcmaster.ca)

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## ALUMNI GRAPEVINE

### MacElecEng & Mgmt

**Ip, Kennan ('04):** Jordan Ip was welcomed with love by Kennan and Yusen on January 27th, weighing 7 lbs 11 oz. Adapting to parenthood has been a lot of work, many sleepless nights, long feedings and many, many diaper changes. Father, Mother and Baby are all doing well and enjoying this special time together.



Jordan Ip

favourite toys are her books and Mega Blocks – a new little engineer in the making! Farrah works at SENES, an Environmental Consulting firm in Richmond Hill, Ontario, conducting Risk Assessments and Environmental Compliance Audits.

### MacMechEng

**Mohany, Atef ('07):** My wife and I were blessed with a baby girl on Thursday May 12th. Her name is Salma. Everyone is doing fine.

**Stenekes, Jeremiah ('04 and Stenekes, Jennifer (nee Boyd, Materials Eng.'05):** Welcome baby girl Ruby Suzanne born June 8th, 6 lbs 14 oz., 19.9 in.

**Ozanic, Janice ('03) (nee Camilleri) and Joe Ozanic (Mechanical Engineering '02):** Joe and I are very proud parents of our daughter, Sarah Victoria, born on February 7, 2009 and our son, Andrew Joseph, born on August 5, 2010. Sarah is a very proud big sister!

### MacChemEng & Mgmt

**Cooper, Farrah (nee Bhesania, '03):** Farrah and Neville are happy to announce the birth of Arianna Cooper in April 2010, at Markham Stouffville Hospital. Arianna's



Ruby Stenekes



Rachel Heska

### MacCivEng & Mgmt

**Heska, David ('08):** Karen and I thank God for the safe arrival of our first child. Rachel Elisabeth Heska was born at the McMaster Hospital on June 29,



Sarah & Andrew

2011 weighing 8 lbs 6oz. We enjoy living here in Hamilton, and I continue to work in the Restoration Engineering field with Halsall Associates Limited in Burlington.



Amelia Rosato

### MacCompEng

**Rosato, Matthew ('03):** First-time proud parents Matthew and Laura are pleased to announce with greatest joy the arrival of their daughter Amelia Maria Rosato on March 17th, weighing 6 lbs 7 oz.



The McKnight's

**Brent McKnight ('01):** and Meaghan welcomed their second son Owen into their family. Owen was born on June 12th and joins his excited big brother Liam who has just turned two.



**Jen-Shih Chang** It is with sadness that we inform the McMaster community of the passing of Jen-Shih Chang, professor emeritus in the Faculty of Engineering.

Jen-Shih Chang joined the Department of Engineering Physics as an assistant professor in July 1979 and was promoted to professor in July 1987. He taught and conducted research in environmental and energy-related technologies. He was recognized internationally for his research expertise, and continued his highly productive endeavors even after his retirement in July 2005.

Throughout his time at McMaster, Jen-Shih was a prolific supervisor and his students have gone on to successful careers in industry, government and academia. He was a dynamic and cheerful person and will be greatly missed by his colleagues and many students.