

# INTERFACES

CHEMICAL ENGINEERING AND APPLIED CHEMISTRY, UNIVERSITY OF TORONTO



*The Arts and Engineering*  
Out of the lab—into the spotlight

Volume 7, Number 1 Spring 2010

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“Could we ever know each other in  
the slightest without the arts?”

– *Gabrielle Roy, Canadian Author*

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The nature of chemical engineering might be rooted in equations, calculations, laboratory study and industrial practice, but the creativity that defines our work can be expressed in countless forms. Through drama, dance, music and the visual arts, many of our students and alumni are expressing their “right brain” creativity to balance their “left brain” rigors. In this issue of INTERFACES, we feature just some of the talented students and alumni who regularly pursue their passion for the arts.

As we begin a new decade, we mark an important milestone. This year will mark the 25th anniversary of the annual Chemical Engineering Dinner. Begun by then-department chair Professor James W. Smith, the dinner has become an annual tradition that brings together students, faculty, staff, alumni and friends. It is probably better described as a family dinner than a department dinner.

This year’s dinner will take place on Friday March 26, 2010 beginning at 6:00 p.m. I want to extend a special invitation to all of our alumni to join us for this event. It promises to be a remarkable evening in which we celebrate the achievements of our Department over the past quarter century.

We also welcome 2010 by planning for the years ahead. The Department has initiated a strategic review of our activities, and will soon produce a new strategic plan for future growth and development. As we do, we can take a great deal of pride in our recent accomplishments. Our faculty members have received a record number of grants, including over \$16-million from the

Canada Foundation for Innovation. Our faculty, students and alumni have also been honoured by organizations both near and far, as our Honours and Awards Section (p. 12) attests. The bright light of their accomplishments shine on our Department.

As always, we welcome your suggestions, your ideas and your enthusiasm. Please don’t hesitate to contact the Department, and I hope that you will join us for the 25th Annual Chemical Engineering Dinner on March 26, 2010.



DOUG REEVE  
*Professor and Chair,  
Department of Chemical Engineering  
and Applied Chemistry*

25<sup>th</sup> Annual Chemical Engineering Dinner  
Friday March 26, 2010  
Colony Grande Ballroom  
89 Chestnut Street  
Reception: 6:00 pm      Tickets: \$100.00  
Dinner: 7:00 pm      \$ 50.00 for Honoured Years  
   (Classes of 6T0 & 8T5)  
Learn more at: [www.alumni.utoronto.ca/chemdinner](http://www.alumni.utoronto.ca/chemdinner)

## Water Treatment Design Team Earns International Attention

A team that included current and former Chemical Engineering students took home top honors in Ontario and represented the province internationally as part of a water treatment design competition for students.

The team included **Luccia Gafarova** (Chem 0T9+PEY), **Sherif Kinawy** (Civ PhD Candidate), **Rafiq Qutub** (MEng 1T0) and **Tony Tsui** (Chem 0T8 and Civ MASc Candidate).

The U of T team first faced challenges from McMaster University and the University of Windsor in the first annual student design competition, which was organized by the Water Environment Association of Ontario (WEAO). Needing to employ innovation as well as practicality in their designs, teams competed in designing a replacement Sanitary Sewage Pumping Station and pipeline crossing for the city of Pickering.

The team won the competition, which earned them a fully-sponsored trip to the United States to represent Ontario at the 82nd Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC '09) in Orlando, Florida.

The competition, which was held October 10 to 14, 2009, asked teams to present designs in wastewater treatment and storm water management. Competing only in the wastewater design competition, the U of T design team placed second.

"It is truly wonderful to have a Canadian team participate in this competition for the first time and score second place," said Qutub, a member of the team. "It is an honor to have worked along with my team members to represent U of T in this competition. I believe that Ontario universities in general and U of T in particular have a great potential in environmental engineering and in protecting our valuable water resources."

## New Award Recognizes Contribution of Graduating Students

The Department has established two new leadership awards that will recognize the contributions of students to the life of the Department. Instigated by **Liam Mitchell**, Manager of External Relations for the Department, the award is sponsored through donations by faculty and staff.

The award will recognize a graduate and an undergraduate student in their final year of studies who have made the most significant contribution to the life of the Department. These contributions can include undertaking formal leadership positions, initiating new programs or activities, or providing a positive example to which current and future students should aspire.

"We felt there was a need to supplement the current Gordon Cressy Student Leadership Award, which is presented to graduating students and tends to focus on involvement at the University and Faculty-levels, with a 'home grown' addition," explained Mitchell, adding "our students make an outstanding contribution to the vibrancy of this Department, which deserves recognition and honour."

The award was first presented on June 19, 2009, just prior to the Chemical Engineering



U of T's water treatment design team. (L to R) Sherif Kinawy, Tony Tsui, Luccia Gafarova and Rafiq Qutub.

Convocation. The first recipients were **Alex Maga** (Chem 0T8+PEY) and **Zoe Coull** (PhD Candidate). Maga was recognized “as a dedicated student leader who has not only personally contributed to student life within the Department, but also has sought to inspire participation and leadership in others.” He has been a Frosh leader, a tutor and peer support leader, and most recently served as Chair of Chem Club.

Coull was described by her supporters as “one of the most transformative graduate student leaders that the Department has ever taught.” She has served as the chair of CEGSA, where she increased membership of the executive group from 20 to 30, oversaw the \$30,000 renovation of the Graduate Common Room, and founded the Graduate Chapter of the Leaders of Tomorrow program in the Department.

## Organic Connection Leads to Energizing Patent Citation

Many students arrive in first year full of nervous energy and with big dreams of making a major breakthrough before they graduate. For **David Castelino** (Chem 1T2), he arrived with a patent citation in hand and international science fair experience under his belt.



It began in grade five when Castelino, preparing for his first science fair, became interested in solar energy. Working with a solar kit purchased by his mother, Castelino started to explore how the sun’s rays were captured and made into a useable energy source.

“There has been a lot of focus on solar cells, but the biggest challenge is the cost and the ability to implement them in a wide-scale

manner,” Castelino explains. This led him to begin exploring the use of organic solar cells as a less expensive alternative to traditional silicon-based cells, which in addition to being costly are more fragile.

As Castelino prepared for his grade 11 science fair, he focused on developing a more highly efficient organic solar cell that took its inspiration from plants, something he credits to his parents’ love of gardening. He struggled at times with the innovation until he was connected with University of Toronto Chemical Engineering Professor **Tim Bender**, whose research focuses on organic solar cells. That connection was facilitated by his sister, **Rachel Castelino** (Chem 0T7+PEY), who was one of Bender’s students at the time.

In working with Bender, the younger Castelino developed a dye-sensitized solar cell that used natural plant pigments in place of synthesized dyes for converting light energy to electricity. As a result of his innovation, Castelino was able to build a cost-effective solar tile that could easily be manufactured in developing countries.

The invention not only won Castelino his local science fair, but led him to become a member of the 16-person Team Canada at the 2007 Intel International Science Fair in Albuquerque, New Mexico. There he was awarded a patent-citation for his invention as well as third place in the Grand Award for Energy and Transportation.

Now in second year, Castelino is in the process of writing an academic article on his invention while exploring the possibility of obtaining a full patent. He is looking ahead to further research in the field through graduate studies.

## Visualizing Success: Business “How To” Book Among Top Ten

**T**he *Visual Slide Revolution: Transforming Overloaded Text Slides Into Persuasive Presentations*, a book by **Dave Paradi** (Chem 8T7) on the effective use of computer-aided presentations, was named one of the Top 10 Business Books of 2008 by The Globe and Mail. Dave is the son of the Department’s own Professor Emeritus Joe Paradi (Chem 6T5, MSc 6T6, PhD 7T5).



Paradi’s book, which was the only self-published book selected for the list, tackles PowerPoint, an essential new media tool of which importance the corporate world often overlooks. The result? Muddled, overbearing, and often times completely useless slides. Describing Paradi’s book as “a detailed guide to improving presentations,” the Globe and Mail went on to review *The Visual Revolution* as “a very strong book in an area where most of us are very weak.”

*The Visual Revolution* demonstrates that even the most artistically challenged individuals can create visually stimulating slides rich with data. The book emphasizes powerful, persuasive graphics as key, rather than dozens of bullet points. “Presenters who want to be successful have to join the visual slide revolution to stand head and shoulders above the normal boring, text-filled presentations,” writes Paradi.

Paradi has also authored *Guide to PowerPoint Version 2003* (Guide to Business Communication Series) and *Ten Questions Your Sponsor Should Ask About Your Project Plan*. Paradi is a Mississauga-based management consultant who speaks and consults across North America for organizations such as 3M Canada, the Canadian Home Builders Association, and the American Association of Orthopedic Surgeons.

Copies of the book can be purchased at [www.thinkoutsidetheslide.com](http://www.thinkoutsidetheslide.com)

## Kennedy Elected President of EAA

**Claire Kennedy** (Chem 8T9) was elected to a two-year term as President of the Engineering Alumni Association (EAA) effective July 1, 2009.

Kennedy, who is also the Chair of the Chemical Engineering Board of Advisors, had been Vice President of the EAA for the past two years. The EAA is the umbrella organization for over 40,000 alumni who are graduates of the Faculty of Applied Science and Engineering. In addition to representing the interests of alumni within the Faculty, it also organizes special events, new alumni receptions and sponsors annual alumni awards.

Kennedy is a partner of the law firm Bennett Jones LLP, where she specializes in corporate tax law. In addition to serving as President of the EAA, Kennedy is Chair of its new Biz Skule™ committee, which is a forum for engineering alumni in the business and financial sectors. She is joined on the EAA board by fellow Chem Eng alumnus **Elias Kyriacou** (Chem 7T6).



**BIZ SKULE™**  
Networking Series presents:

**Hana Zalzal**  
President and Founder  
CARGO Cosmetics Corp.

Biz Skule™ is proud to feature Hana Zalzal (ChE 8T8), founder of Cargo Cosmetics. Hear how Hana began Cargo with a simple goal and how it has grown to be one of the most innovative and sought-after brands among professionals and consumers worldwide.

Contact: Lindsay Tarvit  
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[lindsay@ecf.utoronto.ca](mailto:lindsay@ecf.utoronto.ca)

Wednesday April 28, 2010  
Shamba Foundation  
48 Yonge Street, Ste. 1200, Toronto  
Register: <http://alumni.utoronto.ca/bizskulespring>

## Q&A with Zeton Inc.'s David Beckman

Zeton Incorporated, with offices in Burlington, Ontario and Enschede, The Netherlands, has established itself as a recognized world leader in the design and fabrication of lab-scale systems, pilot plants, demonstration plants and small modular commercial plants. Leading the company is its president **David Beckman** (Eng Sci 8T0, MAsc 8T1), who was with the company when it was established in 1986. INTERFACES recently spoke with Beckman, who has overseen Zeton's 650 completed projects in 35 countries across six continents.



**Q: How have your experiences at Skule™ helped prepare you for your work today?**

**A:** The engineering skills learned provide a good foundation for the work I do today. Particularly the experiences gained from the research work done in my 4th year thesis project and for my Master's thesis.

**Q: As Zeton works across the world, what do you think it means to be a "global engineer?"**

**A:** The nature of engineering work, being

driven by innovation, combined with the global economy means that most engineers will work worldwide. So I think most engineers today would be global engineers. Particularly for people working in specialized niche markets, such as the one Zeton works in.

**Q: What additional skills or experiences are important for today's engineering students to succeed at an international level?**

**A:** The technical language of engineering is the same worldwide. However, to succeed internationally the ability to understand customers' requirements and adapting to their needs in many different cultures is important. A business sense on top of technical capabilities will help engineers succeed internationally. Experiences gained through travel and living abroad also provide a good foundation for international work. As well you need to have confidence that the skills and know-how that you have developed can be applied throughout the world.

**Q: What is your fondest memory of Skule™?**

**A:** Besides numerous incidents that leave fond memories, it is the interaction with people from the many different backgrounds and cultures who attend Uof T and the network of people I met and continue to be in contact with today.

An example of Zeton technology.



## Sizzling Synergies

Professor **Elizabeth Edwards** became the latest faculty member of the Department to be recognized by the NSERC Synergy Awards, which honours collaborations between universities and industrial partners. Edwards was presented with the award, which she won with Dr. Dave Major of Geosyntec Consultants Inc., at a ceremony in Ottawa on October 19, 2009.



Working with Geosyntec, Edwards developed effective techniques for using bacteria to clean up contaminated groundwater sites. This has led to the development of the bioaugmentation culture KB-1, which breaks down the chlorinated solvents used in dry-cleaning and industrial degreasing. Most recently, they received a \$10-million grant from Genome Canada aimed at the discovery and commercialization of novel cultures and enzymes for environmental bioproducts and biofuels applications. KB-1 has been used in the field at sites across the United States, and in Denmark, England and Sweden. It was recently approved for use in Canada.

Edwards joins Professors **Doug Reeve** (MAsc 6T9, PhD 7T1) and **Joe Paradi** (Chem 6T5, MAsc 6T6, PhD 7T5), who have been previous recipients of the Synergy Awards. Reeve was recognized with partner ERCO Worldwide for playing a part in over 50 years of research collaboration in 2003. In 2005, Paradi was recognized with TD Bank Financial Group, RBC Financial Group, Bell Canada and BMO Financial Group, which support the Centre for Management of Technology and Entrepreneurship, an interdisciplinary research centre focused on the needs of Canada's financial sector.

"It is very rare for a single department to be recognized with this regularity for its

collaborations with industrial partners," said Reeve, who is also Chair of the Department. "It is a testament to the Department's desire to partner with industry and the outward looking nature of our research."

The Synergy Awards for Innovation were launched in 1995 by NSERC to recognize partnerships in research and development between universities and industry. Winning universities receive a \$200,000 research grant. Industrial partners receive the prestigious Synergy sculpture and an opportunity to hire an NSERC Industrial R&D Fellow for two years with NSERC, bearing a portion of the fellow's salary.

## Faculty Receive Over \$16M from CFI

On June 18, 2009, it was announced that over \$16-million in grants would be awarded to Chemical Engineering faculty members from the Canada Foundation for Innovation (CFI). The funds will support new collaborative research projects that study microfluidics, environmental bioengineering and air quality.

In total U of T was awarded \$76.6 million for 16 projects. This is the largest amount of investment the CFI has ever awarded to U of T since the program was founded in 1997. Among the projects are:

- The Canadian Aerosol Research Network, which will be led by Professor **Greg Evans** (Chem 8T2, MAsc 8T4, PhD 8T9) and Professor Jonathan Abbatt of the Department of Chemistry, which received over \$7.8-million to establish a nation-wide network of researchers studying the causes and consequences of air pollution;
- BioZone, which will be a multidisciplinary centre for bioengineering research focused on energy, environmental and economic





sustainability, will be led by Professor

**Elizabeth Edwards** and received

over \$3.2-million; and,

- The Centre for Microfluidic Systems in Chemistry and Biology, which is led by University Professor **Michael Sefton** (Chem 7T1), received over \$4.8-million in funding.



At the announcement, U of T Vice President (Research) Professor R. Paul Young remarked, “This was a national competition based on research excellence and there is no question that this quality is at the root of the innovative projects that have been awarded. It is also important to note the diversity and societal relevance of the research. The global community will see benefits from this work for years to come.”

The U of T funding is part of a \$665 million investment by CFI to support 133 projects at 41 research institutions across the country.

“By investing in leading-edge research infrastructure, we are ensuring that our country continues to prosper as a nation of innovation,” said Dr. Eliot Phillipson, president and CEO of the CFI. “This new investment will substantially increase Canada’s capacity to carry out important world-class scientific research and technology development that will benefit all Canadians.”

## Seeing the World With 20/20 Vision

Two Chemical Engineering Professors are part of a new national research network that seeks to significantly reduce vision loss in Canada. Professors **Edgar Acosta** and **Yu-Ling Cheng** are part of the new 20/20 Ophthalmic Materials Network, which is supported by the Natural Sciences and Engineering Research Council.

The Canadian National Institute for the Blind estimates that direct and indirect costs of

vision loss affects more than 836,000 Canadians and costs \$7.9-billion per year. With our aging population, this number is expected to increase dramatically over the next 10 years.

The 20/20 Network brings together 12 researchers from four Canadian universities and ten industrial partners. The research conducted by this new network aims to develop new biomaterials—and ultimately new therapies – for treating vision disorders. The Network’s research is organized around two themes: Materials and Drug Delivery. Cheng will lead the drug delivery team, of which Acosta is a part.

The network has obtained \$6.7-million in funding over five years, with NSERC providing \$5-million through its Strategic Network Grant, with the remaining funds being provided by industrial and institutional partners as well as the Ontario Centres of Excellence. It is anticipated that the 20/20 Network will train 30 to 40 post-doctoral fellows, 35 to 45 graduate students and over 60 summer students during its five-year lifetime.

## Kawaji’s Research is Out of This World

Professor **Masahiro Kawaji’s** latest research project is over your head, literally.

Kawaji has made a significant contribution to research that was conducted onboard the International Space Station this past summer.

Called the Marangoni Experiment in Space 2 (MEIS-2), it is the brainchild of Canadian Astronaut Dr. Robert Thirsk. Through a series of physics experiments, Thirsk and Kawaji are hoping to discover new ways of forming semiconductor crystals, popularly used in electronics and other technologies.



# A&E: The Arts and Engineering

Chemical engineers are taking to the stage and filling galleries. **Denise Hansen** explores the path that leads engineers out of the lab and into the spotlight.



**I**t's the last week of January and the winding hallways and long corridors that comprise U of T's engineering compound have been transformed by the Skule™ Arts Festival. Now in its second year, the week-long event provides engineers with the chance to remove their hardhats and pick up their paint brushes or tap shoes.

Art adorns the halls, while a “coffee house” Wednesday evening and a Friday night “Arts Suds” provide forums for the performing arts.

At the helm of the organizing committee is **Taryn Davis** (Chem 1T0), who is overseeing the development of this annual event. “There have always been a lot of music clubs in engineering, but not many opportunities for the visual arts. This week is an opportunity to showcase all of the arts that engineers are involved with,” explains Davis.

Davis herself is a passionate visual artist and the aspect that draws her to art is the same that draws her to engineering: problem solving. “You have to problem solve in art. Especially if you mess up, you need to problem solve a way out,” she says.

But the Skule™ Arts Festival is not the only forum in which chemical engineers are pursuing their passion for the arts. Across campus and in their communities, students and alumni are showcasing their artistic flare.

The arts have played a significant role in the life of **Supraja Sridharan** (Chem 1T0). From an early age, Sridharan has been surrounded by music. A violinist and vocalist specializing in a stream of south Indian classical vocal music known as Karnatic vocal music, she comes from a long line of musicians on both sides of her family. Sridharan’s grandparents dedicated their lives to practicing, performing, and teaching classical Indian music. In high school, she decided to take her interests in performing and singing more seriously by giving chamber concerts with other violinists and percussionists across Canada, India, and the U.S.

“I believe being in the arts has helped me cultivate my creative ability, and has aided me immensely in design projects that require both a good set of engineering principles and creativity,” she says. Sridharan notes that in Karnatic music there is a lot of improvisation needed, which is a skill that has helped her solve those last minute problems that typically pop up in chemical engineering.

For fellow vocalist **Rachel Castelino** (Chem 0T7+PEY), a recent graduate of the Department, singing gave her the much needed “work-life balance” that can sometimes be hard to find.



“You need something outside of school to keep you going, you need more than one passion in life,” says Castelino, who most recently performed with the Mississauga Choir Society to a sold out show at Roy Thompson Hall.

Castelino was the second vocalist ever to receive the Faculty’s L. E. Ted Jones Alumni Award, which recognizes a graduating student who has made a significant contribution to the arts. She credits her vocal performances in opera, pop, and jazz with enhancing her public speaking abilities and her confidence in front of an audience.

Alumnus **Robert West** (Chem 8T1) agrees. “The presentation skills, social skills, and performance skills you gain by involving yourself in more than one thing will hold you in good stead for the rest of your life,” West states.



West has been a part of Skule™ Nite since 1973, having participated both in front of and behind the curtain. He has acted, stage managed, directed, provided technical advice, and is now a member of the Hart House Theatre Standing Committee. In September, West received the Arbor Award from the University, which recognizes alumni volunteerism. He describes the recognition as “very gratifying.”

The benefits of being involved in Skule™ Nite did not stop for West after the completion of undergraduate studies. It has continued to prove valuable in his career in engineering insurance. West has developed strong project management skills as a result of pursuing his dual loves of the stage and engineering.

“You [learn to] multitask in ways you could never imagine. You have to manage your time and the time of other people because after all, the show must go on, whether you’re ready or not” West explains. He adds that these time management skills are indispensable in any profession. Put simply, “It’s kind of like doing problem sets in that you’ve got to work towards a common goal with people of varying talents from all different walks of life.”

For dancer **Ankeeta Tadmase** (Chem 1T0), balancing her studies and her art is not a significant challenge.

“Dancing is something that is naturally integrated [into my life]. It reinforces everything I do, it’s so re-energizing,” she says.

“Life without dancing would have been so different. I would have been more of a robot as opposed to a human chemical engineer.”

Tadmase has been practicing Kathak, which is a form of Indian classical dance, since the age of 8. Tadmase is also a talented painter and has meddled in ceramics and a stream of art known as miniature art, an amazingly new art form that sees her painting skylines and other immense sceneries on canvases such as pistachio shells.

Through her dancing, Tadmase has had the opportunity to meet people she would normally never encounter. Stepping outside the world of Chem Eng she says has given her a broader perspective, and has had a tremendous impact on her personal growth.



Skule™ Nite performer **Hasan Alkabeer** (Chem 0T9+PEY), also finds that it’s the people you meet that makes his experience in the arts so meaningful.

“I’ve gained a wider circle of friends and become more flexible,” Alkabeer says.

Alkabeer got involved with Skule™ Nite after he saw the show in his first and second years. He auditioned with a friend and in 2009 became part of the annual event. Last semester Alkabeer and a group of friends from Skule™ Nite created a sketch group and began pursuing gigs at comedy clubs. They performed at Toronto Sketch Festival and are looking to expand their horizons to other events and festivals.

While some students fight to find time for their artistic hobbies, Alkabeer offers some blunt advice: “Jump in, make the time, and you’ll get involved.”

That is what **Jessica Virdo** (Chem 0T7+PEY & PhD Candidate), an avid painter, did.

“Between classes, labs and assignments, it was hard to find time to paint or do much else. First year actually kept me so busy that I didn’t pick up a paintbrush from September to May,” she exclaims.

But after the first year dust had settled, Virdo resumed her love for drawing and creating. She began experimenting with all types of visual art media including charcoal, oil, acrylic, watercolor, gouache, airbrush, fabric dye, and most recently glass-blowing.

Virdo has immersed herself in the visual arts and joined the Arts and Letters Club of Toronto, a hub for arts enthusiasts, where she is now in charge of their monthly exhibitions and sits on the Board of Directors.



As an undergrad she also had her artwork chosen several times for the cover of U of T's Crumpled Paper Art magazine. Today Virdo regularly shows her work in exhibitions and has even sold some pieces.

"Art has always been part of what I do," says Virdo but clarifies that engineering is the field where she wants to build her career. "I would miss engineering too much!"

How does she juggle a passion for painting and a PhD? "Lots of caffeine," Virdo laughs.

"There are definitely time issues—not so much now, but definitely in undergrad." However she maintains that painting has been a release and a great way to keep sane while pursuing her other passion, designing new, environmentally-friendly materials for solar cells.

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*Denise Hansen is a fourth year social science student studying at the University of Toronto's New College. She works part time as the Events & Communications Assistant in the Department of Chemical Engineering and Applied Chemistry's External Relations Office.*

## Help today's students become tomorrow's engineering leaders!

### Join Skule™ Society Today!

Alumni from the Department of Chemical Engineering and Applied Chemistry have a long history of giving back. By joining Skule™ Society, a special community of alumni and friends who demonstrate leadership with annual gifts of \$1,200 or more, you will continue that tradition. Your support will create opportunities for our students to excel in their studies and in the practice of engineering leadership through scholarships, student clubs and research.

Skule™ Society members are important to the success of our students.

We are committed to keeping Skule™ Society members informed of the Departments activities and engaged in the life of the Faculty. As a member, you will have opportunities to learn of our student's achievements and the successes of the Department and Faculty's programs at various events through out the year.

If you would like to join Skule™ Society or have any questions, please contact Tom Vosper, Senior Development Officer, at 416-946-0566, [tomv@ecf.utoronto.ca](mailto:tomv@ecf.utoronto.ca) or go to [www.giving.utoronto.ca](http://www.giving.utoronto.ca)



## Faculty

Professor **Greg Evans** (Chem 8T2, MASc 8T4, PhD 8T9) was presented with the Ontario Engineering Medal for Research and Development at the Ontario Professional Engineering Awards Gala on November 21, 2009. Evans was recognized for his innovative work in aerosol research, which probes the causes and consequences of smog.

Professor **Masahiro Kawaji** (Eng Sci 7T8) has been named a Fellow of the Canadian Academy of Engineering (CAE) on July 13, 2009. He was recognized for his research on fluid flow and heat transfer as well as for promoting international cooperation in engineering research.

Staff members **Liam Mitchell** & **Deborah Peart** won Stepping Up Awards from the University of Toronto. The awards recognize administrative staff members who go above and beyond their duties to support the goals of the University. Mitchell was recognized as part of a team who initiated and organized an annual Engineering Career Fair for students each January. Peart was recognized as part of a team that organized an annual Black History Month Lunch.

Associate Chair **Graeme Norval** (Chem 8T3, MASc 8T5, PhD 8T9) was named a Fellow of the Chemical Institute of Canada. He was presented with his Fellowship certificate at the 8th World Congress of Chemical Engineering in Montreal, which was held August 23 to 27, 2009.

**I**t has been a good year for Professor **Levente Diosady** (Chem 6T6, MASc 6T8, PhD 7T2). “It has been very humbling to receive this recognition,” he said, before adding, “I am trying not to let it go to my head.” He was elected a Fellow of the Canadian Institute of Food Science and Technology (CIFST) on May 7, 2009 in Montreal. Only one fellow is elected annually by the Institute, which is composed of more than 1200 scientists and technologists in industry, government and academia. On December 15, 2009, he was informed that he had been elected to the Hungarian Academy of Engineering. Two days later, Diosady was notified that he had also won the K. Y. Lo Medal from the Engineering Institute of Canada, which recognizes his “significant engineering contributions at the international level.”

He also began 2010 with a bang when it was announced on January 25 that Diosady had been named to the Order of Ontario, which is



the province’s highest honour. He was invested into the order January 28 at a ceremony at Queen’s Park.

With over 30 years of experience, Professor Diosady has established himself as one of Canada’s leading food engineers. For the past ten years he has actively developed new techniques for fortifying salt with iron and iodine for the prevention of micronutrient deficiency diseases, which adversely affect 2 billion people worldwide. Tests in Ghana and India resulted in a 30-percent decrease in anemia in children after eight months simply by replacing household salt with double-fortified salt. Professor Diosady is now focusing upon fortifying rice and developing salt that is triple fortified with Vitamin A (folic acid), iron and iodine.

“This impressive series of honours and awards are befitting the significant contributions Professor Diosady has made to the field of food engineering and to society more broadly,” said Professor Doug Reeve, Chair of the Department.

Professor **Milica Radisic** won The Breaking The Glass Ceiling Award by the University of Toronto Chapter of Women in Science Engineering. The award is presented annually to a female researcher who not only leads in her field of research, but inspires the people around her. The award was presented on April 13, 2009.

Professor **Doug Reeve** (MAsc 6T9, PhD 7T1) won the Carolyn Tuohy Impact on Public Policy Award on May 4, 2009. The award, which is part of the University of Toronto Alumni Association's Awards of Excellence, recognize Reeve's contributions in shaping Canadian policy on the pulp and paper industry as well as his efforts to involve engineers in public policy development.

Professor **Molly Shoichet** was presented with the Clara Benson Award from the Canadian Society of Chemistry June 2, 2009 in Hamilton. The award recognizes a distinguished contribution to chemistry by a woman while working in Canada.

Professor **Elizabeth Edwards** has been awarded the Kalev Pugi Award from the Society of Chemical Industry Canada. The award honours Edwards for developing KB1, a microbial culture that dissolves chlorinated solvents. The award will be presented at a ceremony on March 25, 2010.

## Alumni

**Betty Hill** (Chem 4T9), Alec Monro (Chem 5T9) and **Robert West** (Chem 8T1) were presented with Arbor Awards from the University of Toronto Alumni Association. The awards recognize alumni volunteerism. Hill has served on the Engineering Alumni Honours and Awards Committee for the past three years and has been an active volunteer as part of the Department's LEADERS OF TOMORROW program. Hill was also recognized with the Leaders of Tomorrow



Rob West (Chem 8T1) and Betty Hill (Chem 4T9) are presented with Arbor Awards. (L to R) Chem Eng External Relations Manager Liam Mitchell, West, Hill, Engineering Alumni Association President Claire Kennedy and Engineering Vice Dean D. Grant Allen.

Alumni Appreciation Award at the 24th Annual Chemical Engineering Dinner on March 30, 2009. Monro was recognized for his dynamic leadership of the Class of 5T9's effort to raise funds to establish the Class of 5T9 Leaders of Tomorrow Award. West has been an avid supporter of Skule™ Nite for over 30 years and has been an alumni member on the Hart House Theatre Committee since 2001.

**Ali Khademhosseini** (Chem 9T9, MAsc 0T1) won the Engineering Alumni Association's 7T6 Early Career Award, which recognizes the achievements of an alumnus celebrating 10 years since graduation. Khademhosseini, who obtained his PhD from MIT in 2005, is an Assistant Professor of Medicine and Health Sciences and Technology at Harvard-MIT's Division of Health Sciences and Technology and the Harvard Medical School. His research is based on developing micro- and nanoscale technologies to control cellular behavior with particular emphasis on developing microscale biomaterials and engineering systems for tissue engineering and drug delivery.



Howard Goodfellow (Chem 6T4, MSc 6T5, PhD 6T8) is inducted into Engineering Hall of Distinction. (L to R) Claire Kennedy, Goodfellow and Department Chair Doug Reeve.

**Howard Goodfellow** (Chem 6T4, MSc 6T5, PhD 6T8) was inducted into the University of Toronto's Engineering Hall of Distinction on Thursday November 5, 2009 as part of the Engineering Alumni Awards Gala. Currently President of Tenova Goodfellow Inc., Howard is internationally known for the Goodfellow Expert Furnace System Optimization Process (EFSOP®) technology that he developed and commercialized beginning in 1998. EFSOP® is an extractive analytical and control system that holistically optimizes the furnace process in steel manufacturing and is the basis for significant reductions in greenhouse gas emissions due to its worldwide application. This application is now being extended to other combustion-intensive industries to improve energy efficiency and decrease greenhouse gas emissions.

**Donald B. Mutton** (Chem 4T9, PhD 5T3) was presented with the John S. Bates Memorial Gold Medal by the Pulp and Paper Technical Association of Canada (PAPTAC). The most prestigious award given by PAPTAC, it is given each year to recognize long-term contribution to the sciences and technology of the pulp and paper industry. Mutton is a past chair of the Chemical Institute of Canada. His career with Canadian International Paper was dedicated to improving the efficiency and versatility of paper pulp products.

**Amity Lam** (Chem 7T9) was named a Member of the Professional Engineering of Ontario Order of Honour on May 8, 2009. The award, which recognizes exceptional service to the engineering profession, was presented to Lam for her contributions to the PEO's Brampton Chapter.

**Larry Seeley** (Chem 6T6, MSc 6T8, PhD 7T2) has been named a Fellow of the Engineering Institute of Canada. The current President of the Canadian Society of Chemical Engineering, Seeley was recognized for his outstanding contributions to engineering in Canada. Seeley has an extensive career in business, beginning with Falconbridge Limited. He has served as president of Lakefield Research Ltd and Recapture Metals Ltd.

**Paul Godfrey** (Chem 6T2) was inducted into the Order of Ontario on January 28, 2010. The Order is the highest honour bestowed by the Province of Ontario. Godfrey is a recognized civic and business leader. Following a 20 year career in municipal politics, he entered the business world. He is currently the President of The National Post as well as the Chair of the Ontario Lottery and Gaming Corporation.





## Students

**Daniel Maclean** (PhD Candidate) was named a recipient of the Vanier Scholarship, which is known as Canada's answer to the Rhodes Scholarship. Sponsored by the Government of Canada, the scholarship is valued at \$50,000 per year for up to three years. It is designed to attract and retain world-class doctoral students by offering them a significant financial award to assist them during their studies at Canadian universities. Vanier Scholars are selected on the basis of leadership skills and a high standard of scholarly achievement.



**Jason Stanwick** (Chem 0T9) won the Chemical Institute of Canada Undergraduate Thesis Award from the Division of Material Science and Engineering (MSED). Jason completed his BAsC thesis under the supervision of Molly Shoichet, with whom he is now completing an MASc degree.

**Ghazal Azimi** (PhD candidate) and **Kevin McLean** (MASc candidate) were recognized at the Nickel and Cobalt 2009 Conference of the Metallurgical Society of Canadian Institute of Mining, Metallurgy and Petroleum (CIM). Azimi received the 2009 Gordon M. Ritcey Award, which recognizes outstanding scholarship in the pursuit of a graduate degree in hydrometallurgy. Kevin McLean (MASc candidate) was awarded the Best Poster Award in the Graduate Student category. The conference was held in Sudbury, Ontario from August 23 to 26, 2009.

**Supraja Sridharan** (Chem 1T0) and **Ankeeta Tadkase** (Chem 1T0) placed second and third respectively in the Robert G. Auld Student Paper Competition, which recognizes outstanding presentations of technical papers at the Canadian

Society of Chemical Engineering Conference in Montreal from August 23 to 27, 2009. Both students presented the results of research conducted in the Department over the summer.

**Parnian Jadidian** (Chem 1T1) won the Professor James W. Smith Leaders of Tomorrow Award, which is presented to a second-year student who demonstrates leadership potential. **Sami Khan** (Chem 1T1) was named the runner-up. Also recognized was **Mohan Pandit** (Chem 1T0), who won the Class of 5T9 LEADERS OF TOMORROW Award, which recognizes the leadership of a third-year student. The awards were presented at the 24th Annual Chemical Engineering Dinner on March 30, 2009.



Above: Recipients of the James W. Smith LOT Award.  
(L to R) Sami Khan, Smith and Parnian Jadidian.

Below: Recipient of the Class of 5T9 LOT Award.  
(L to R) Bruce Millar, Alec Monro, Dennis Caplice, Mohan Pandit, John Matthews, Sid Olvet and Mark Kortschot.

## Arrivals

**Sarah Attia** (Chem 0T2, MASC 2005) and **Khaled Al-Qazzaz** (Mech MASC 0T3) welcomed their third child, Fatema Al-Qazzaz, on November 8, 2009. She joins siblings Abdelrahman (three years old) and Amena (one year old).

**Siewan Chan** (Administrative Assistant) and her husband Kevin Lee welcomed their daughter, Mikayla Elise Lee, on November 7, 2009. Mikayla is the couple's first child.

**Doris Lee** and **Lawrence Yu** (both Chem 9T9) are pleased to announce the birth of their daughter Janice Yu. She was born in Toronto on October 3, 2007. Janice is the couple's first child.

**Cheryl Washer** (MASC 0T4 and PhD Candidate) and her husband Luke Devine welcomed their twin sons, Owen Curtis and Benjamin Patrick Devine, on January 18, 2010. Owen and Benjamin are the couple's first children.



## Connections

**Carolina Font Palma** (MASC 0T4) married Marco Moreno in Veracruz, Mexico on December 20, 2008. The reception was outdoors with a lovely sea view.



## Departures

**Charles Alfred Sankey (Chem 2T7)**

July 31, 1905 – April 29, 2009

Dr. Charles A. Sankey was born in the remote, rural municipality of Brenda, Manitoba. He attended Belleville High School, and later Upper Canada College. He obtained a BAsC in Chemical Engineering from the University of Toronto in 1927 and his PhD from McGill University in 1930. He was hired by the Price Brothers Research Department in Quebec City in 1930. In 1935, with Price Brothers facing bankruptcy, he moved to St. Catharines, Ont. and joined the Ontario Paper Company, in Thorold, Ontario as Research Engineer. He became Research Director and later Vice-President Research, retiring in 1971.

His work resulted in many advances in the technology of pulp and paper, and also of its by-products, with particular emphasis on lignosulphonic acids, ethanol and vanillin. He also contributed much to his industry through the effort he put into the Canadian Pulp and Paper Association (now PAPTAC).

Dr. Sankey served very actively as the second Chancellor of Brock University (1969-1974) and helped to establish the Department of Music at Brock. He was named a Fellow of the Royal Society of Arts, of the Chemical Institute of Canada and of the American Association for the Advancement of Science. In 1980 he was inducted into the University of Toronto's Engineering Hall of Distinction. In 2004 he was awarded the John S. Bates Memorial Gold Medal by the Pulp and Paper Technical Association for his long and meritorious service to the industry.

Despite all this activity, Dr. Sankey was a devoted family man. He is predeceased by his wife of 63 years Winifred and survived by his four children, George King (Hudson, QC), John Sankey (Ottawa, ON), Grace Northcott (Calgary, AB) and Janet Sankey (Maple Bay, BC), ten grandchildren and nineteen great-grandchildren.

To contribute to Family News, please contact:

Tel: 416-978-8770 or E-mail: [external.chemeng@utoronto.ca](mailto:external.chemeng@utoronto.ca)

## Thanks to our generous supporters

The Department of Chemical Engineering and Applied Chemistry wishes to gratefully acknowledge the generous financial support provided by our alumni and friends over the past year. We try to ensure that our list is as accurate as possible, but should anyone have been unintentionally omitted, please accept our apologies. Please contact us at 416-978-8770 or [external.chemeng@utoronto.ca](mailto:external.chemeng@utoronto.ca) to correct the oversight.

### January 1 to December 31, 2009

Laura Adams	Alan R. Gemmell	Donald B. Mutton
Isaac Ahmed	W. Donald Gordon	Neo Material Technologies Inc.
D. Grant Allen	John F. Goudey	Graeme W. Norval
Peter J. Aust	David L. Granatstein	Sandra Odendahl
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Ron A. Breneman	Robert Hill	Deborah Peart
Dennis Caplice	K. Betty Hill	Tony Petricola
Frederick J. Carter	Simon Hollinghurst	Walter F. Petryschuk
Robert Chachel	Vahe Philip Hovnanian	George R. Pravato
Michael and Barbara Charles	Ming Huang	Robert A. Rae
Alfred Chau	Sidney Joseph	Douglas W. Reeve
Pietro Chiefari	Chatterpaul Jowlabar	Donald Albert Riddle
Ronald Francis Cook	Myrtle Victoria Kell	Joan S. Rogers
Kenneth Robert Coulter	Claire M. C. Kennedy	Geoffrey C. Saldanha
E. B. (Ted) Cross	Mark T. Kortschot	Bradley Saville
John C. Dales	Mei Ling Kwee	Larry E. Seeley
Claudio D'Ambrosio	Elias Kyriacou	Molly Shoichet
Sonia De Buglio	Anita W. Li	Gorette Silva
Bernard DeAbreu	Kecheng Li	P. J. (Rocky) Simmons and
P. David Douse	James E. Lightfoot	Louvain Piggott
Elizabeth Edwards	Emma R. Master	A. J. Simonavicius
D. Todd Ellenor	Michael H. May	Arlene S. Smith
A. Gordon Elliott	Alison Patricia McGuigan	Suncor Energy Foundation
Enwave Energy Corporation	Silvano Meffe	Danny Tandra
ERCO Worldwide	Julianne Mendonca	Ralph H. Thomson
Greg Evans	Livia Andreea Mihele	Andrew J. Thurlow
Ramin Farnood	Ronald Miki	Vello Tou
Michael S. Fila	Bruce M. Millar	Olev Trass
Alice F. S. Fischel	Scott T. Mills	William and Kathleen Troost
Ronald P. Fournier	E. B. Missen	Bert Wasmund
Frank Frantisak	Liam Mitchell	Kathy Weishar
Lawrence R. Funnell	Bharat B. Mithel	Kevin Wheeler
Albert Garred	H. Alexander B. Monro	Robert M. Willson

### Volume 7, Number 1 Spring 2010

**Publisher:** Doug Reeve

**Editor:** Liam Mitchell

**Associate Editor:** Denise Hansen

**Contributing Editors:** Sonia De Buglio,  
Deborah Peart and Kathy Weishar

**Design and Layout:** Dennis Boyes

**Illustration:** John Woloshyn

**Photography:** Mark Balson, John  
Fairweather (NSERC) and Michael Tenaglia  
(Michael T Photography and Design)

Front cover: (T-B/L-R): Levente Diosady,  
Michael Sefton, Parnian Jadidian, Robert  
West, Claire Kennedy and Howard  
Goodfellow, David Castelino, Paul Godfrey,  
Daniel Maclean and Betty Hill

**Printing Services:** General Printers

**Circulation:** 5,500

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# Upcoming Events

## Join us for the 25th Annual Chemical Engineering Dinner

Friday, March 26, 2010  
Colony Grande Ballroom  
89 Chestnut Street Residence

Reception: 6:00 p.m.  
Dinner: 7:00 p.m.

Mix and mingle with classmates  
See your former professors  
Celebrate the current success of the Department

Tickets are \$100.  
Learn more at [www.alumni.utoronto.ca/chemdinner](http://www.alumni.utoronto.ca/chemdinner)



## Spring Reunion 2010

Spring Reunion 2010 will be held Thursday May 27 – Sunday May 30. The weekend will be filled with events, lectures and luncheons, something for everyone.



## Chem Eng Lunch

Join your classmates for a lunch in the Chem Eng Undergraduate Common Room followed by a tour of the Wallberg Building. Learn about current research, visit the Unit Ops Lab and meeting with current students and faculty.

**Saturday, May 29, 2010**  
Wallberg Building (200 College Street) WB 238  
Time: 12:00 – 2:00 p.m.  
Price: Free!  
Register at [www.alumni.utoronto.ca/chemenglunch](http://www.alumni.utoronto.ca/chemenglunch)

## Engineering Reunion Dinner

The Faculty of Applied Science and Engineering Spring Reunion is holding a reception hosted by the Dean followed by dinner with your classmates in recognition of your anniversary. Come and enjoy an evening to reconnect and rekindle your Skule™ spirit.

**Saturday, May 29, 2010**  
Hyatt Regency Toronto  
370 King Street West, Toronto  
Dean's Reception: 6:00 p.m.  
Dinner: 7:00 p.m.  
Price: \$100.00 p/p

For more information on the Spring Reunion events please go to website:  
[www.alumni.utoronto.ca/SRfacultyevents](http://www.alumni.utoronto.ca/SRfacultyevents)

Special appearances by the Lady Godiva Memorial Bnad & The Cannon.

Publications Mail Agreement No 40780631  
Return undeliverable Canadian addresses to:  
200 College Street,  
Toronto ON Canada  
M5S 3E5