

INTERFACES

DEPARTMENT OF CHEMICAL ENGINEERING AND APPLIED CHEMISTRY



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“Engineering is a four-year lesson in how to succeed in life. The basis of engineering is the application of theory to practice, and requires problem solving skills and common sense (which oddly enough does not seem so common anymore). I knew that chemical engineering would push me and prepare me well for anything I chose to do in the future. To me, engineering is more a state of mind than a title or a job.”

Irene Ying
Chemical Engineering OT4

Chemical Engineering
and Applied Chemistry
University of Toronto

200 College Street
Toronto ON Canada M5S 3E5
T 416 978 3063
F 416 978 8605
E chair@chem-eng.utoronto.ca

Message from the Chair

The University of Toronto has set itself the goal of becoming one of the best publicly funded research universities in the world, a task made challenging by Ontario's postsecondary funding, the lowest per student of any province in Canada. Nonetheless, we are undaunted, and the current six-year planning process, "Stepping Up", is well underway.

As we strategize for the Department, our Vision Statement guides our thinking: "We will be among the top ten chemical engineering departments in the world, educating leaders of tomorrow". Our newly formulated Operating Principles guide our actions: "Think deeply; Recruit the best; Be student-focussed; Have respect, care and concern for the individual and the community; Operate with professionalism and integrity; Operate with deliberate and concerted action".

What is the future of chemical engineering? Our vision of chemical engineering incorporates a wide spectrum of the sciences, with applied chemistry as an important part of our history and our present strength. A broad foundation positions us well to absorb and integrate new disciplines into our core expertise: putting chemistry, mathematics, physics, and biology to work. Chemical engineering is a profession dedicated to designing, building, evaluating and improving complex chemical, biological, and material systems. We have identified one subdiscipline of strategic importance for growth: bioengineering. Biomaterials/tissue engineering is one of the fields in our Department that has received international recognition, and through close cooperation with the Institute of Biomaterials and Biomedical Engineering, it will grow stronger. Bioprocess engineering is a second field in which we have a significant presence and one which holds great promise for the future. We see excellent prospects for developing our strength in

areas such as: microbiological processes as applied to the environment, biomedical applications, and pharmaceutical manufacture; food and nutraceuticals; biofuels; microfluidics; and biomolecular processes in proteomics and genomics.

Core elements of the curriculum that we intend to strengthen include design, open-ended problem solving, applied mathematics and informatics. We also see as an important part of our mission the development of programs for enhancing the professional skills of students, including writing, public speaking, planning, entrepreneurship, and leadership. In addition, we encourage our students to stretch themselves outside the classroom with initiatives like Leaders of Tomorrow and support of Engineers Without Borders.

To fulfill our strategic plan and achieve our vision, we need the support of all the members of the community of the Department: students, alumni/ae, partners in industry and government, faculty, staff and friends. Please share your news and views with INTERFACES. We welcome your participation.

All the best,
Doug Reeve

Frank Dottori Professor of Pulp and Paper Engineering,
Professor and Chair, Department of Chemical Engineering
and Applied Chemistry

www.chem-eng.utoronto.ca

PS: Don't forget to mark your calendar for the Annual Dinner to be held on Friday, March 26, 2004 and to send in the enclosed RSVP letter.



Fourth-year student Andrew Diosady and Prof. Doug Reeve exchange a handshake at the Leaders of Tomorrow Dining Etiquette Workshop.



Faculty advisor, Doug Reeve, with his plant design group. Back (l to r): Aaron Zhou (teaching assistant), Gregory Scott, Doug Reeve, Andrea George, Kelly Sabaliauskas, Erin Frohwerk, Jim Hopmans (Industrial Advisor – ERCO Worldwide) Front (l to r): Victor Liang, Mark Chang

Undergraduate News

All universities prepare students academically, but the Department of Chemical Engineering at the University of Toronto strongly believes in developing leaders. In support of this conviction, it has launched **Leaders of Tomorrow**, whose objectives include providing students with valuable career and life skills that they will not receive in the classroom, attracting incoming students by offering support to help them excel academically and enhance their leadership capabilities, and involving distinguished alumni who can act as mentors, sharing leadership insight and experience. Much of the direction of the program will come from students. The working group responsible for organizing professional development activities, lectures, and events includes representatives from the Chem Club and the Canadian Society of Chemical Engineering (CSCHE), as well as faculty and staff.



Paul Godfrey sharing his experiences with enthusiastic chemical engineering students



Our first **Leaders of Tomorrow** speaker, David Colcleugh

Leaders of Tomorrow was inaugurated by an exciting series of events. On September 30, 2003, David W. Colcleugh, former President, Chairman and CEO of DuPont Canada Inc., discussed his broad experience in the area of leadership. He was as eager to listen to and answer students' questions as they were to learn from him.

On November 4, Paul V. Godfrey shared his remarkable journey from average engineering student to high-powered executive. Godfrey, who as an undergraduate found it difficult to talk to girls, went on to become Chairman of Metropolitan Toronto and later President and CEO of Sun Media and The Toronto Sun. Currently, he is President and CEO of the Toronto Blue Jays Baseball Club. He credits his success to the problem solving skills he developed while a student in Chemical Engineering.

On January 15, 2004, an entertaining and educational evening was enjoyed by students, professors, and the Board of Advisors. **Professional Dining Etiquette**, a four-course dinner tutorial, was presented by Leanne Pepper, Certified Etiquette and Protocol Consultant. Seasoned chemical engineers were happy to trade their bunsen burners for finger bowls.



Leanne Pepper gives students a competitive edge (l to r): Grantland Wang, Sonya Van Vliet, Leanne Pepper and Padma Tata

Plant Design is the capstone course of fourth year. Groups of five or six students design a facility from start to finish, from the chemical processes and process flow diagrams to the details of the plant layout. Plant Design gives students exposure to real-world problems. This year's project topics covered a wide range, including Production of Magnesium Chloride, Upgrading Landfill Gas, and Substitute Natural Gas. Each group elects a Chief Engineer who is responsible for ensuring cooperation, scheduling tasks and meetings, and keeping the team focussed on the goal; an industrial advisor and a faculty advisor are available for consultation. The industrial advisors, some of whom become deeply involved in the project, have an opportunity to meet and evaluate future engineers while gaining fresh insight into a relevant problem.

This year, fourteen of the sixteen Plant Design Chiefs were women.



Our 2004 Plant Design Chiefs: Back row (l to r): Mark Dal Bianco, Patricia Lai, Padma Tata, Catherine Gucciardi, Robyn Chin Fatt, Jean Yong, Sonya Van Vliet, Teresa D'Angela; Front row (l to r): Kelly Sabaliauskas, Kyla Bellavance, Krystle Connerty, Talya Manoin, Nikol Kochmanova, Bahar Aminvaziri and Peter Cheung. Absent: Anni Luck

A four-member team consisting of **Feraz Shere** (Chem 0T5), **David Small** (Chem 0T5), **Jennifer Pereira** (Civ 0T5), and **Zeynab Moayyed** (Commerce 0T4) won first prize in the Annual Case Competition sponsored by UTCA (University of Toronto Consulting Association). This event is designed to give students the opportunity to share consulting strategies with colleagues and to network with industry professionals.

Each team is handed a case file in the evening and asked to present an analysis the following morning. This year's panel of judges included consultants from McKinsey & Co, Mercer Human Resource Consulting, Accenture, and IBM Business Consulting Services.

The case given to Feraz and his team involved restructuring Pepsi Co. Worldwide so that the company could compete more effectively in a changing marketplace. Feraz and David both attribute the team's first-place finish to their training in Chemical Engineering, with its emphasis on problem solving, public speaking, and teamwork.



The Skule™ Cannon Guards and filming crew

Todd Reichert, a fourth-year student in Engineering Science-Aerospace with a minor in film, spearheaded the creation of a DVD to commemorate the 75th anniversary of the Faculty's mascot, "**Ye Old Mighty Skule™ Cannon**". The DVD, available for \$10 in the engineering stores, is entitled "Smoke and Thunder: The Story of the Mighty Skule™ Cannon". Special features include interviews with past Chief Attiliators and over 200 photos.

Director, producer, cameraman, and editor Todd asked composer Jeremy Burko, a former engineering student pursuing a music degree, to create the soundtrack. It was performed by a thirty-five member orchestra and a thirteen-member choir, both assembled by **Sam Orr** (Chem 0T5).

Only a thousand DVDs have been ordered, so be sure to buy your copy early.

Undergraduate News

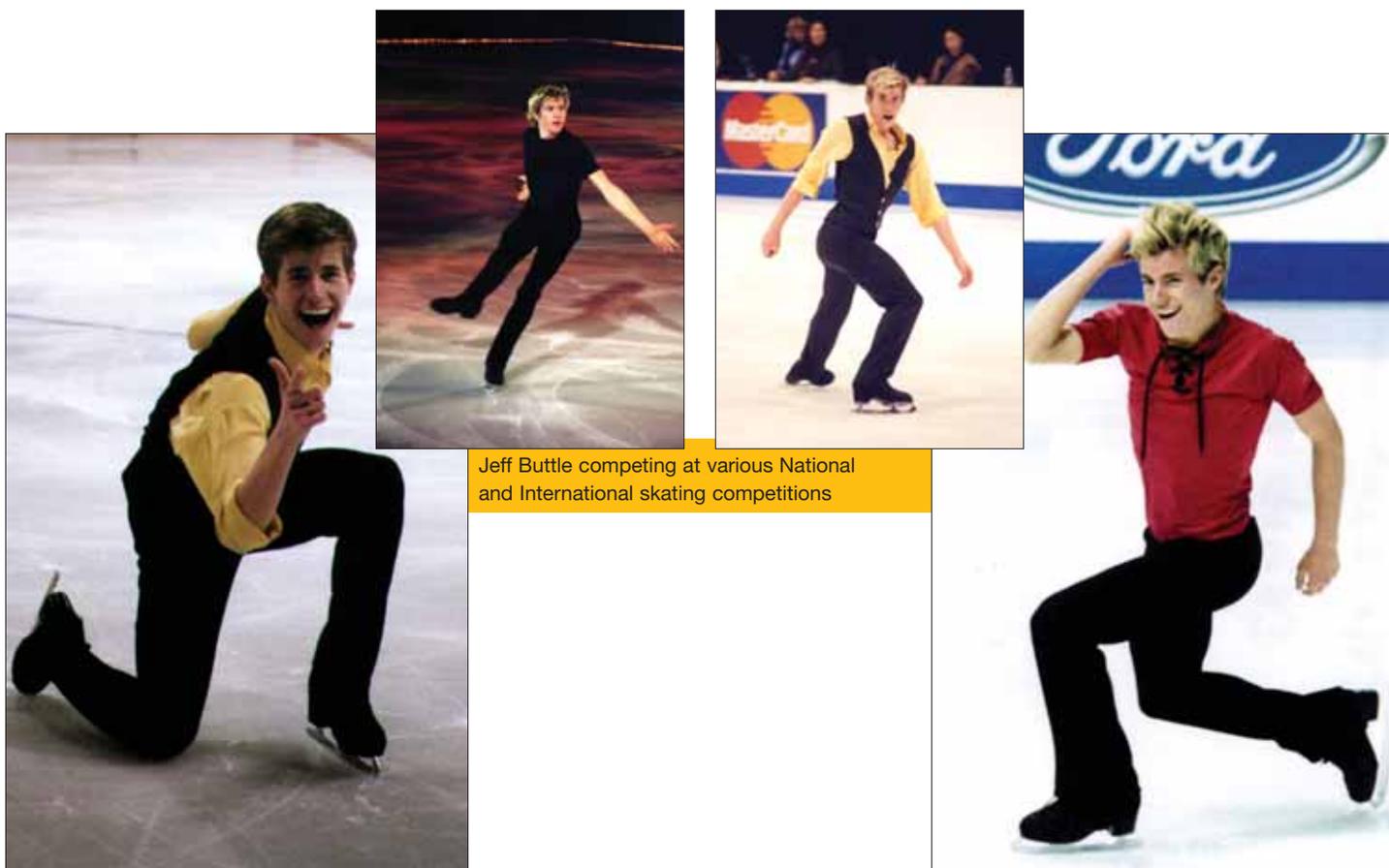
The demanding program in Chemical Engineering leaves most undergraduates struggling to find even a few moments to indulge passions which lie outside the profession. **Jeff Buttle** is a rare exception. As a part-time first-year student, he has been able to meet the rigorous academic standards of the Department while achieving prominence in the intensely competitive world of international figure skating. In November, 2003, Jeff finished second to reigning world champion Evgeny Plushenko of Russia at Skate Canada and shortly after won the 2003 NHK trophy in Japan, defeating Timothy Goebel of the United States. Jeff ended the season by qualifying for the Grand Prix Final right behind Plushenko. Unfortunately, he had to withdraw due to illness, but fellow Canadian Emanuel Sandhu defeated the Russian dynamo.

A native of Smooth Rock Falls, Ontario, Jeff started skating at age two and competing at age six. Currently, he trains at the Mariposa School of Skating in Barrie, with coaches Lee Barkell, Doug Leigh, and Wendy Phillion. Since 2001, he has won high standing in both national and international

competitions. Small in stature but large in talent, Jeff is a natural showman. Don Laws, coach of the American skater Michael Weiss, remarks that Jeff has "...got everything. He has the look and the stretch. He has the skating skills... If he gets a couple of quads (jumps), he'll be a force to reckon with."

It might be asked how a small-town Ontario boy who has not passed through the formidable state training program in Russia or benefitted from the cash rich American system has reached such heights in the profession. Perhaps it is Jeff who has the greatest insight into his success. He explains that he skates because he enjoys it and feels happy while skating and that he thrives on reaching out to the audience, giving them pleasure as well. Clearly, his passion has made him a winner.

In early January, Jeff won the bronze medal at the Canadian Nationals in Edmonton, finishing behind Emanuel Sandhu and Ben Ferreira. He then competed at the Four Continents Tournament in Hamilton, where he was awarded first place. His fans in the Department eagerly cheer him on.



Jeff Buttle competing at various National and International skating competitions

The new academic year brought dramatic changes to the Chemical Engineering Graduate Student Association, **CEGSA**. Twenty-one students are now involved in the CEGSA executive and committees. Together, they hope to “maintain and build upon the contributions of our predecessors”. This included holding the annual Christmas party at which \$600 was collected and then donated to the CHUM City Christmas Wish Charity.

Another item on this year’s agenda was an initiative to encourage the population of Wallberg to become better acquainted: “one department, many facets, one family”. Recognizing faces and names is the first step toward building networks through lab collaboration, resource sharing, and social interactions. Connectivity among individuals and labs in the Department is on the rise. The planned renovation of the Graduate Student Lounge will build stronger ties in “our home away from home”.

Ultimately, CEGSA would like to instill in all the members of the Department, past, present and future, a sense of “a lasting legacy” so that their achievements will resonate into the future. In the spirit of connectivity, CEGSA encourages all members of our community, past and present, to get in touch. You can contact us via e-mail (cegsa@chem-eng.utoronto.ca) or in person, or visit our website:

www.chem-eng.utoronto.ca/~cegsa



CEGSA co-chairs: Charles Whang and Gursaran Singh

Michael Reid, an M.A.Sc. student working in Dr. Papangelakis’ Aqueous Process Engineering Research Group, won the Hydrometallurgy Entrance Scholarship offered by the Metallurgical Society, a division of the Canadian Institute of Mining, Metallurgy, and Petroleum. Students entering postgraduate studies in the field of hydrometallurgy at a Canadian university are invited to apply for the award. Michael’s studies in hydrometallurgy began with a PEY placement at the research and development laboratories of Inco Ltd.

A number of students from the Department recently presented their work at the 53rd Canadian Chemical Engineering Conference held in Hamilton Ontario from October 26-29, 2003. In the biotechnology division, **Dimpy Gupta**, **Fernando Morgan**, **Nalina Nadarajah**, and **Jeff Karp** each received an award for the top, presentation in one of the eleven sessions. **Nalina Nadarajah** and **Jeff Karp** also won two of the \$100 prizes given for the three best oral presentations.



Alison McGuigan, Martha Miller and Priscila Dominguez



Celebrating the Persian New Year: (l to r): Sahar Dolatshahi, Prof. Ramin Farnood, Forouzandeh Farahani, Parisa Hosseini-Ardehali, and Sotoudeh Hamed-Hagh

Faculty News

Cleaning up toxic groundwater: a highly successful university-industry partnership



Phil Dennis, Elizabeth Edwards, Sandra Dworatzek, and David Major

The cleanup of contaminated sites is costly, and for many contaminants, there are no effective remediation strategies. The use of bioremediation, a cost-effective alternative, is becoming more widespread as the underlying biogeochemical processes become more clearly understood. For the past decade, **Professor Elizabeth Edwards** has worked with Dr. David Major, Mr. Evan Cox, and other researchers at GeoSyntec Consultants (www.geosyntec.com) on bioremediation projects. An impressive list of accomplishments can be directly attributed to their collaboration.

Since 1997, when Professor Edwards joined the Department, over \$1M in research funding has been jointly secured, resulting in numerous publications, presentations, short courses, and new collaborations at U of T and elsewhere. The collaborative research has led to the characterization of many microbial cultures capable of degrading a wide variety of organic pollutants. Currently, genetic information from these bacteria is being used to develop state-of-the-art molecular tools to assess their distribution and activity in situ at contaminated sites. Geosyntec and the Edwards lab have also teamed up with Ed Hendrickson from DuPont Co. to develop molecular probes for detecting dechlorinating bacteria in groundwater. The most significant outcome of the collaborations with Geosyntec has been the characterization, field testing, and commercialization of KB-1TM (nicknamed “The Dechlorinator”), a culture that is highly effective in completely dechlorinating common pollutants such as perchloroethene (PCE), a dry-cleaning solvent, and

trichloroethene (TCE), a common industrial degreasing solvent, to ethene, a nontoxic product. A spin-off company, SiREM (www.Siremlab.com), managed by two former members of the Edwards lab, was created to market KB-1TM along with molecular tools for monitoring bioremediation.

The dechlorination reactions in KB-1TM are carried out by Dehalococcoides, a recently discovered group of tiny bacteria which grow under strictly anaerobic conditions. These bacteria use hydrogen as their energy source while breathing chlorinated ethenes. Dehalococcoides, though widely distributed, are not ubiquitous. Field demonstrations of bioaugmentation have shown the successful stimulation of complete dechlorination of TCE to ethene after the addition of a few liters of KB-1TM culture. KB-1TM, which is being field tested by the U.S. Department of Defense and has been deployed in seventeen locations in pilot test or field applications, was recently featured in the New York Times: “The New Toxic-Site Cleanup Agent: A Bacterium that Gobbles up Poison” (NYT - October 19, 2003).

After a forty-year career at the University of Toronto as a professor and academic administrator, **Dean Emeritus Michael Charles** is stepping down from the Chair in Chemical Engineering endowed and named in his honour.

His career as a chemical engineer has come full circle. After completing his undergraduate studies at Imperial College, London, and then immigrating to Canada, he worked at the Alberta Research Council. After obtaining a Ph.D. at the University of Alberta, he also worked in the Production Research Group of Imperial Oil in Calgary, where his main concern was “getting oil and gas out of the ground and transporting it by pipeline”.

Recently, his focus has shifted to a strong interest in climate and climate change. Troubled by the deleterious effects of burning fossil fuels, he has encouraged students and colleagues in chemical engineering to become engaged with the climate change phenomenon because chemical engineering principles can be applied to the climate system. Last year, he participated in the Department’s Distinguished Lecturer Series, giving a presentation on the topic “Climate Change, Kyoto and Our Energy Future”.

Dean Charles served two terms as Chair of the Department from 1975-85 and then was appointed Vice Dean of the Faculty of Applied Science and Engineering. In 1993, he was invited to become Dean, a position he held for eight years, one year longer



Michael Charles

than the norm. As Chair, he challenged students to “think beyond the immediate problem”. Once, after the Iron Ring Ceremony, they took him literally and filled his office with balloons.

When he became Dean, the same philosophy of “thinking big” inspired him to encourage the faculty to regard themselves as members of a leading engineering school, rather than one with only “a provincial outlook” and to embark on a major fund-raising campaign. In 1998, Dean Charles

invited experts from the world’s top engineering schools to conduct independent reviews of the Faculty’s programs.

Thirty-three reviewers came from such prestigious institutions as Stanford, MIT, Carnegie-Mellon, and Cambridge. The feedback confirmed the status of the Faculty as “a leading player in the global constellation of engineering schools”. By the time his term as Dean had ended, over \$105 million had been raised in support of scholarships, chairs, and the construction of the Bahen Centre for Information Technology.

Although he missed “some of the action”, Dean Charles was happy to be back in the Department, and “to hear the streetcars on College Street”. His current interest in climate change reinforces his view that “Chemical Engineering is a more comprehensive discipline than many because it combines physics, chemistry, biology, and mathematics to provide a broad understanding of how the world works”.

Though his contribution to the Faculty has been enormous, Dean Charles remains modest, emphasizing that “it has been a privilege to have had the opportunity to serve and some part in helping students realize their potential”.



Iron Ring prank 1981

Awards and Distinctions

In August, 2003, **Professor Vladimiro Papangelakis** was elected Chair of the Hydrometallurgy Section of the Metallurgical Society of the Canadian Institute of Mining, Metallurgy and Petroleum (CIM).

Professor Michael Sefton was named a Fellow of the American Institute of Chemical Engineers (AIChE).

In October, 2003, **Professor Molly Shoichet** won the CSCHE Syncrude Award for Innovation.

Professor Kim Woodhouse has been appointed Scientist at the Sunnybrook and Womens College Health Science Centre.

Professor Doug Reeve was elected the first chair of the recently formed Association of Canadian Chairs of Chemical Engineering (ACCCE).



NSERC Synergy Awards Ceremony (l to r): Tom Brzustowski, President of NSERC; Prof. Doug Reeve; Paul Timmons, President of ERCO Worldwide; and Joanne Keselman, V.P. Research at University of Manitoba

NSERC’s Synergy Awards Program honours outstanding achievements of university-industry collaborations. The **University of Toronto** and **ERCO Worldwide** were chosen as one of the winners of the **2003 NSERC Synergy Awards for Innovation**. The prize was given in recognition of the fifty-year collaboration between ERCO Worldwide and researchers at the University, in particular, **Professor Doug Reeve**, the late **Professor Howard Rapson**, and their colleagues in Chemical Engineering, many of them in the Pulp & Paper Centre, and **Professor Bob Andrews** of the Drinking Water Research Group in Civil Engineering.

Alumni News



John Voss

After graduating from the Department, **John Voss** (Chem 8T2) pursued a career in the natural gas industry. For fifteen years, he worked as an engineer, market analyst, and strategic planner for TransCanada PipeLines Limited in Toronto and Calgary. In 2001, John founded Aegent Energy Advisors Inc., a consulting firm providing services to large users of natural gas and electric power; he is President and Managing Director.

As an undergraduate, John was Editor of the Cannon and the yearbook and served as Vice President of the Engineering Society. After graduation, he continued his involvement, becoming Editor of the Engineering Alumni Newsletter and later a member of the College of Electors, and eventually joining the Engineering Alumni Council and serving on its Executive Committee. John is currently 1st Vice President of the Engineering Alumni Association.

John is married to **June Li** (also Chem 8T2), manager of e-business development for Petro-Canada. Both are members of the Skule™ Society. Their daughters, Lauren, 11, and Erica, 7, are active ringette players, so John and June volunteer at the Etobicoke Ringette Association, John as a coach and executive committee member, and June as web-master and member of the marketing committee.

John looks back with appreciation on the education he received in the Department: “Our undergraduate years were exciting years of great challenges and personal growth. What we learned has served me well, and the relationships we made will last a lifetime. My attachment to Skule™ is so positive that I cannot imagine not remaining involved.”

Eager to share the benefit of his professional experience, John has joined the Department’s newly formed Board of Advisors. “I am enthusiastic about working with Doug Reeve and the members of the Advisory Board. The Department is moving with energy and purpose toward becoming one of the best Chemical Engineering schools in the world, and I have no doubt that it can achieve this goal.”

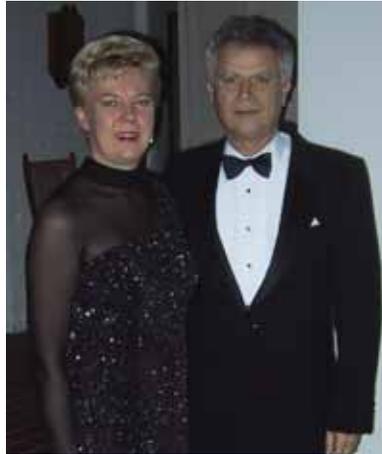
Fernando Morgan, who recently completed his Ph.D., has received a twelve-month postdoctoral fellowship from the Francqui Foundation of Belgium. He will work in the Laboratory of Microbial Ecology and Technology (LabMET) at the University of Ghent under the supervision of Dr. Willy Verstraete. Fernando, who obtained his doctorate under the supervision of **Professor Grant Allen** of the Pulp & Paper Centre, investigated the effects of mesophilic-thermophilic temperature transient conditions on aerobic wastewater treatment. He was nominated for the fellowship by the University of Ghent and was selected from candidates proposed by other Belgian universities.

Traumatic spinal cord injury (SCI) is a common and irreversible event that can incapacitate victims for life. While many promising experimental treatment strategies are being explored, there is still no cure. An important issue is the delivery of therapeutic agents, such as growth factors (GFs), to the injured spinal cord. Under the supervision of **Professor Molly Shoichet** and neurosurgeon Dr. Charles Tator, **Maria Jimenez** (Ph.D. 2004) investigated a minimally invasive drug delivery system that provides delivery of GFs to the spinal cord. The approach involves a collagen solution containing GFs that gels after injection. Animals receiving the GFs had a greater percentage of tissue spared at the lesion epicentre compared to controls which did not receive any injections. Dr. Jimenez is currently working in Professor Shoichet’s company, Matregen Corp.

The Department of Chemical Engineering was once again well represented at the Professional Engineers Ontario Awards Gala, held on November 14, 2003. **Larry Seeley**, President and CEO of SGS Lakefield Research Limited and a triple graduate of the Department (6T6, 1968, 1972), was awarded the Engineering Medal for Entrepreneurship, and **Professor Levente Diosady** (6T6, 1968, 1971) was awarded the Engineering Medal for Research and Development.



Larry Seeley



Prof. and Mrs. Levente Diosady

On October 23, 2003, three alumni were celebrated at the Engineering Alumni Honours and Awards Banquet. **David Colcleugh**, former President, CEO and Chairman of DuPont Canada and a triple graduate of the Department (5T9, 1960, 1962), received the Engineering Alumni Hall of Distinction Award. The same honour was conferred on **William Dimma** (4T8), an engineer who has made substantial contributions in the fields of business and higher education. He is the author of the recently published *Excellence in the Board Room: Best Practices in Corporate Directorship*. This award celebrates alumni whose impressive accomplishments make them role models for undergraduate students.

On the same evening, another alumnus, **Paul Godfrey** (6T2), was awarded the Engineering Alumni Medal, the highest honour granted by the Engineering Alumni Association. The former Chairman of Metropolitan Toronto, the former head of the Toronto Sun Publishing Corporation, and the current President and CEO of the Toronto Blue Jays Baseball Club, Paul Godfrey embodies high achievement, responding to challenges with professionalism and flair.



Engineering Alumni Honours and Awards Banquet (l to r): David Colcleugh, Steve Thorpe, Bill Dimma, Nick Iozzo, and Paul Godfrey

Family News

Future chemical engineers are born

Tanya Lindsay

(Chem 9T7) had a girl, Emma, on May 24, 2003. Dad Stuart (Elec 9T6) is also a graduate of the Faculty.



Maud Gorbet

(Ph.D., IBBME, 2001) and husband Rob are happy to announce the birth of a brother for Améline. Simon Frank Gorbet was born on September 4, 2003, in the comfort of his parents' bedroom, as planned. Simon weighed 6 lbs, 9 oz (3kg) and scored a full 10/10 on his first test.



Doug Reeve, Chair of the Department, and wife Melanie are the proud grandparents of Hannah, born on September 24, 2003, in Ottawa to daughter Karen and son-in-law Tom. Hannah is their second grandchild. Doug and Melanie's third grandchild, Zoë, sister to Benjamin, was born on December 2, 2003, in Toronto to son Greg and daughter-in-law Yael.

Professor Don Cormack's second grandchild, Lauren Patricia, was born on September 24, 2003, and a third grandchild, Nevaeh, was born on October 3, 2003.

Gina Mollicone Long

(Chem 9T3) and her husband Andrew Long are proud to announce the arrival of Simon Christopher Long on March 13, 2003. His big sister Molly Jane is thrilled with her new brother.



Phillip Tan

(Chem 9T6) and **Linda Wang** (Chem 0T0) had a daughter, Joey Lea Tan, on October 26, 2003. Joey weighed 6 lbs, 11 oz at birth.



Anandhi Narayanan

(Chem 9T7) had a boy, Devan Srinivasan, on October 28, 2002.



Owen Lewis

(Chem 0T3) and his wife Bronwyn had a son on November 26, 2003. Spencer Bryn Lewis weighed 7 lbs, 2 oz at birth.



Erika Rodriguez

(Chem 9T4) and Stan De Rango (Eng Sci 9T4) had a son, Alexander, on September 30, 2003. He weighed 7 lbs, 5 oz at birth.



Lalita Tata

(Chem 9T4) and Hari Ponnekanti had their second child, a girl named Maya, on October 21, 2003. Her brother Rishi will be three in February.



Henry Pedro

(Chem 9T5) and wife Amanda had a son on January 12, 2004. At birth, Rafael Carlos weighed 7 lb, 8 oz and was 21 inches tall.



Wedding bells are ringing

Dolores Baksh (Chem 9T7) married Benjamin Byers on August 30, 2003.

Michael Angeli (Chem 0T1) married Sabrina Spina on September 5, 2003 in Montreal.



Domenica Parente (Chem 0T3) is getting married this May.

Tutuan Nugraha, a former M.A.Sc. and Ph.D. student, got married on January 4, 2004.

Kyla Bellavance (Chem 0T4) and Darryl Augustine plan to be married on August 27, 2004.

Isabelle Bourgeois (Chem 0T2) and Ryan Morris (Elec 9T9) plan to marry on September 4, 2004.

Dennis Abuan (Chem 9T4) married Vanessa Nankil on September 20, 2003 in Toronto.



Congratulations one and all!

Deaths



With great sadness we announce that **Shivan Sookoo** (Chem 0T3) died tragically in a car accident in Trinidad on Sunday, December 28, 2003. Our deepest sympathies to his family and friends.

To contribute any "News" or "Announcements", please contact Kyla Bellavance, who is replacing Sonia DeBuglio while she is on maternity leave.
416 978 8770
kyla@chem-eng.utoronto.ca

Upcoming Events

Mark your calendars. Whether you want to expand your mind or reunite with old classmates or professors, we hope to see you at one or more of these events.

On Friday, March 26, 2004, the Department will host the **19th Annual Chemical Engineering Dinner**. We welcome alumni from all years. We will be celebrating the careers of retiring Professors Charles Chaffey, Michael Charles, and Rein Luus. This year we anticipate an enthusiastic turnout. Please join us.

From September to April, the Department hosts a **Distinguished Lecturer Series**, which presents a broad spectrum of international cutting-edge research. For more information, please visit our website at: **www.chem-eng.utoronto.ca**

Seminars still to be held in the spring include:

Controlled Molecular Adsorption on Si: Laying a Foundation for Molecular Devices

Robert Wolkow

March 10, 2004

National Research Council, Canada

Ultrastructure and Nanomechanics of Soft and Hard Tissues

Christine Ortiz

March 17, 2004

Massachusetts Institute of Technology, U.S.A.

Technical Progress in the Commercialization of Biomass-to-Ethanol Processes

Jack Saddler

March 24, 2004

University of British Columbia, Canada

Bioremediation of Chlorinated Solvent Source Zones – Is It Feasible?

Perry McCarty

March 31, 2004

Stanford University, U.S.A.

Enzyme Technologies and Industrial Advances

Johanna Buchert

April 7, 2004

VTT Biotechnology, Finland

The **50th Reunion** of the Chemical Engineering Class of 1954 will be held on Friday, May 28, 2004 at the Granite Club, 2350 Bayview Ave., Toronto, ON, 12:00 p.m. to 6:00 p.m.

Classmates and spouses are invited.

Contact Richard Clarke

nash_elmo Industries

9 Trefoil Drive

Trumbull, CT, 06611 USA

Dick.Clarke@nash-elmo.com

For more information about any of these events, please contact Kyla Bellavance at: 416 978 8770

Brain Teaser

A glass of water filled to the brim contains an ice cube floating at the surface. What will happen to the water level when the ice cube melts? Surface tension is neglected.

Please visit our website www.chem-eng.utoronto.ca for the solution

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We invite inquiries, comments and suggestions from readers.

Please contact:

Professor Douglas Reeve
Frank Dottori Professor of Pulp and Paper Engineering

Professor and Chair,
Dept. of Chemical Engineering
and Applied Chemistry

200 College Street
Toronto, ON Canada M5S 3E5
Telephone: 416 978 3069
Fax: 416 978 8065
Email: chair@chem-eng.utoronto.ca

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Kvaerner Power Oy
matREGEN Corp.
MeadWestvaco Corporation
The Micronutrient Initiative
Mitsubishi Electric Company
Newmont Gold Co.
Nippon Paper Industries Co. Ltd.
Oji Paper Co., Ltd.
OLI Systems
Ontario Power Generation
Papier Masson Ltée.
Program for Appropriate Technology in Healthcare
RBC Financial Group
RHI Refractories
Rimon Therapeutics
Rio Tinto Technology Development
Stora Enso Research AB
Trojan Technologies
Tembec Inc.
TD Canada Trust

UPM-Kymmene Corporation
Virsol Inc. of France
Votorantim Celulose e Papel
Weetabix of Canada Ltd.
Weyerhaeuser Company
Xerox Research Centre of Canada

Federal Government:

Canada Foundation for Innovation
Canadian Institutes of Health Research
Canadian Space Agency
Environment Canada
Health Canada
Innovations Foundation
International Development Research Centre
National Centres of Excellence
Natural Sciences & Engineering Research Council
Public Works & Government Services Canada

Federal Institutions:

Canadian Institute of Mining, Metallurgy and Petroleum

Provincial Government:

Ontario Innovation Trust
Premier's Research Excellence Award

Provincial Centres of Excellence:

Centre for Research in Earth and Space Technology
Centre for Microelectronics Assembly and Packaging
Centre for Research in Earth
Materials & Manufacturing Ontario

Research Centres

Centre for Chemical Process Metallurgy

Education:

Penn State University
University of British Columbia
University of Victoria
University of Washington

Foundations:

Heart and Stroke Foundation
Imperial Oil Charitable Foundation

Associations:

Advanced Biochemical Engineering

U.S. Government:

National Institutes of Health
Sandia National Laboratories, U.S. Dept. of Energy
U.S. Department of Energy

Foreign Governments and Agencies

National Space Development Agency of Japan

In our next issue, we look forward to recognizing the tremendous support we have received from our alumni and friends