

## New deadline for housing ministry's OBC exams

By MICHAEL MASTROMATTEO

The Ontario Ministry of Municipal Affairs and Housing (MMAH) has announced it will delay implementing key aspects of Regulation 305/03 made under the *Building Code Statute Law Amendment Act* which requires building designers,

- commencement of the first reporting period for the annual building permit fee report to be prepared by municipalities.

Other changes to the province's building regulatory system took effect July 1 as planned.



PEO and OAA task forces met July 6 to discuss the exemption of engineers and architects from Bill 124. Standing, left to right, PEO CEO/Registrar Kim Allen, P.Eng., Chris Roney, P.Eng., Sean O'Reilly, David Eckler, Allan Larden. Seated, left to right, PEO Past President George Comrie, P.Eng., David Craddock, PEO President Bob Goodings, P.Eng., Randy Roberts, PEO President-elect Pat Quinn, P.Eng., Bill Kachmaryk.

including engineers, to pass examinations to show their knowledge of the *Ontario Building Code* (OBC).

On May 19, the government filed O.Reg. 236/05, extending by six months to January 1, 2006 the deadline for passing the examinations. It is also delaying by six months the requirement for carrying certain insurance and for firms having to register as building designers. The deadline extension covers:

- qualification requirements for building officials and designers;
- registration requirements for designers;
- time frames for the review of building permit applications by municipalities; and

According to the housing ministry, the postponement stems from stakeholder concerns about the ability of certain building officials, especially in northern Ontario communities, to deal with some of the new requirements by July 1.

Coincidentally, PEO's first face-to-face meeting with Housing Minister John Gerretsen to discuss the new requirements, and PEO's request that licensed engineering professionals be exempted from them, took place on the same day the ministry announced the deadline delay.

In the meeting, PEO's representatives (President Bob Goodings, P.Eng., Past President George Comrie, P.Eng., CEO/Registrar Kim Allen, P.Eng.,

Deputy Registrar Johnny Zuccon, P.Eng., and communications and public affairs consultant Howard Brown) expressed the position that the Reg. 305/03 qualification and registration requirements subject professional engineers to a certification regime that duplicates the existing licensing regime under the *Professional Engineers Act* without any concrete justification. They noted to the minister that, as holders of the P.Eng. licence, the province's professional engineers are already held accountable to the public for their OBC-related work, and should be exempt from the testing requirements and certification regime. They then proposed three options to exempt professional engineers: total exemption, exemption with conditions, or temporary exemption.

Since this meeting, PEO received a letter dated June 23 from Minister Gerretsen that underscores his intent not to exempt engineers. Gerretsen's letter states, "While I wish to reconfirm my decision to retain the qualification requirements for building practitioners, as I indicated in my September 16, 2004 letters to PEO, Consulting Engineers of Ontario, and the Ontario Society of Professional Engineers, I also wish to recognize the self-governing status of engineers." In his letter, the minister also praises the Ontario Association of Architects' (OAA) decision to set up a parallel qualification system.

PEO has scheduled a July 18 meeting with MMAH staff to discuss the three presented options, to reiterate the regulator's disinterest in setting up a parallel system and, most importantly, to remind the ministry that the

*Professional Engineers Act* meets the government's policy objectives.

PEO has continued to meet individually with Ontario members of provincial parliament to raise awareness of its role and the value to Ontario of a self-regulated engineering profession, as part of its complementary government communications program. A highlight of the program's first six months was Engineering for Ontarians Day, a reception at Queen's Park attended by 45 MPPs, PEO government spokespeople and representatives of organizations with interest in engineering (see special centre pullout for highlights).

Meanwhile, on June 17, the Council of the OAA launched a new task force to implement a renewed effort to have architects completely exempted from any OBC-related qualification and registration requirements. Members of the OAA task force are David Craddock, vice president statutory activities, Councillor Allan Larden, Councillor Sean O'Reilly, Councillor Bill Kachmaryk, Councillor Cliff Harvey, David Eckler (a former councillor) and Lieutenant Governor-in-Council Appointed Councillor Michael Visser. It is charged with working with other stakeholders with similar interests (including PEO) to seek the best possible solution for architects while maintaining the OAA's mandate under the *Architects Act*. Like PEO, the OAA believes the qualification and registration requirements for licensed professionals under Reg. 305/03 represent an incursion on its self-regulatory jurisdiction under its legislation. Members of PEO's Bill 124 Task Force met with their OAA counterpart on July 6.

# Resolutions give hint of membership concerns

By MICHAEL MASTROMATTEO

PEO's 2005 annual business meeting was marked by the same feisty spirit that characterized the meeting in 2004.

The key elements of the gathering April 16 in London, Ontario, included the outgoing President's report on the past year, the introduction of newly elected Council members, discussion of members' resolutions, updates from other Canadian engineering regulators, and the incoming President's expectations for the coming year.

In calling the meeting to order, outgoing President George Comrie, P.Eng., read greetings from Ontario Premier Dalton McGuinty who said PEO "has never veered from its mission of maintaining public confidence in the engineering profession."



Members vote on a resolution at PEO's 2005 AGM in London.

Comrie said most of the issues raised at the 2004 AGM had been addressed by initiatives undertaken by Council in 2004 and early 2005. He also advised members that information on resolutions and Council response is

of yearly activities to the Regional Councillors Committee in order to receive their funding allotment for the coming year. It generated some lively debate and was ultimately carried.

## *Discussion of members' resolutions reflected the diversity of interests and priorities among PEO licence holders.*

Comrie later reviewed the status of members' resolutions from the 2004 business meeting, and reiterated that although resolutions from the floor are not bind-

available on the PEO website, and through *Engineering Dimensions* and the Registrar's Report, which is published on the website.

On the administrative side, the business meeting saw approval of the audited 2004 PEO financial statements (see *Engineering Dimensions*, March/April 2005, pp. 41-45).

Discussion of members' resolutions reflected the diversity of interests and priorities among PEO licence holders. A

resolution moved by Nick Gurevich, P.Eng., and seconded by John Glover, P.Eng., called for chapters to provide a business plan and detailed accounts

Desmond Gomes, P.Eng., was defeated.

A motion introduced by Vasilj Petrovic, P.Eng., that PEO designate 2006 a year to celebrate the work of pioneering engineer Nicola Tesla (1856-1943) was carried. Although members debated the need to devote an entire year to a relatively obscure, but influential, non-Canadian innovator, it was felt that an effort to recognize Tesla's life and work would bring positive attention to Canadian engineering.

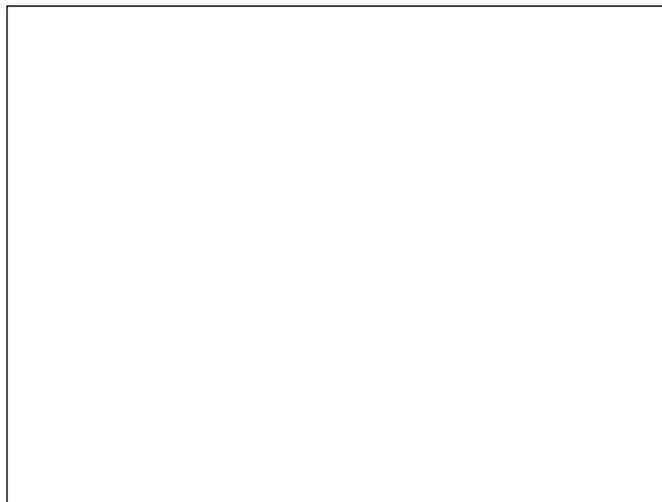
Two resolutions put forward by President-elect Pat Quinn, P.Eng., failed to garner enough support to be carried. The first, seconded by Peter DeVita, P.Eng., called on Council to organize a series of "town hall meetings" in response to what Quinn described as "apathy, indifference and hostility" toward PEO. The second, seconded by Denis Dixon, P.Eng., asked that the PEO committee studying the Certificate of Authorization urge Council to modify the certificate provisions to make it more accessible to sole practitioners and small practices with fewer than three employees.

However, a resolution on the similar theme of chapter funding mechanisms, put forward by Jeremy Cook, P.Eng., and



Outgoing President George Comrie, P.Eng. (left), and incoming President Bob Goodings, P.Eng.

ing on PEO Council, they remain important in helping Council gain an appreciation of some of the membership's deeply held concerns.





President-elect Pat Quinn, P.Eng., asked that the PEO committee studying the Certificate of Authorization urge Council to modify the certificate provisions to make it more accessible to sole practitioners and small practices. The resolution was defeated.

visit [www.peo.on.ca/events/agm/2005AGM/2005agm.htm](http://www.peo.on.ca/events/agm/2005AGM/2005agm.htm).)

Quinn also proposed five additional resolutions dealing with Discipline Committee penalties, election timing and process, election eligibility of former PEO Presidents, and changes to retired member fees. Although these final five resolutions were not debated, outgoing President Comrie assured the gathering that Council would consider the concerns they raise. (For a complete disposition of the 2005 resolutions,

## “We’re now turning our attention to our relationship with the government of Ontario.”

– Past President George Comrie, P.Eng.

The business meeting also featured reports from engineering regulators from British Columbia, Alberta, Saskatchewan, Manitoba and Quebec, and from representatives of the Canadian Council of Professional Engineers and the Ontario Society of Professional Engineers (OSPE).

In winding down the business meeting, Comrie said that despite some disagreement among members about priorities and processes, PEO appears to be moving in the right direction in terms of having engineering regulatory concerns taken seriously by policymakers. He said renewed consultation with all stakeholders in the profession is key to PEO in meeting its strategic aims.

“A lot of effort was put into improving the relationship with OSPE and with the Canadian Council of Professional

Engineers, and we’re now turning our attention to our relationship with the government of Ontario,” Comrie said. “These relationships are absolutely critical for our success. As long as our house is divided and we’re squabbling amongst ourselves, we are not going to achieve this vision that I believe everybody wants. So my parting words to you as President are this: Look outward, not inward. Focus your energies not on the minutiae of how we allocate funds to chapters and things of this sort. Focus your energies on what we can do to fulfill our mandate as a regulator and to put engineering in its proper place in society.”

Following on Comrie’s appeal for unity, incoming President Bob Goodings, P.Eng., stressed the team approach to meeting PEO’s objectives for 2005 and beyond.

“It’s my belief that the President of PEO should not determine the direction of PEO only by him- or herself, and be its only face. He or she must lead Council, and together make it work,” he said. “I won’t pretend to have all the answers. It’s not my nature. I’ve been involved in big companies and I know that the president of a company has to listen and pay attention and depend on all the people working for the company, so it’s not going to be a Bob Goodings event. I’m going to try to make it a Council event, and everybody here is going to do it.”

While highlighting the need for Council to move diligently to achieve this year’s objectives spelled out in the new strategic plan, Goodings cited the sometimes unsung contributions of members at large. “Our licence holders are the true backbone of our association,” he said. “They remind me of the outstanding and often unrecorded contribution that is made by members on chapter executives, members on Council, and committee and task force people. The life of PEO Council would be unproductive without their selfless dedication to our profession. If we didn’t have you around, this PEO would be quite a dull place.”

# Regulators salute PEO communications efforts

By MICHAEL MASTROMATTEO

Fellow regulators and other stakeholders in the engineering profession strongly support PEO's efforts to form new relationships with government in promoting greater respect for the P.Eng. licence.

As was evident from comments made during the recent PEO Annual General Meeting, engineering regulators across the country see tremendous value in reaching out to legislators in affirming the public interest benefits of self-regulation. They also saluted PEO for the development of its new five-year strategic plan, which lists respect and recognition of the engineering licence as one of its top objectives.

PEO is currently in the middle of an ambitious communications program designed to alert Ontario legislators to the contributions of engineering self-regulation to the public interest. The program is also aimed at heading off the development of legislation that might clash with the profession's self-regulatory authority under the *Professional Engineers Act* (PEA).

Clarence Reed, P.Eng., past president, Association of Professional Engineers and Geoscientists of Saskatchewan, said government communications efforts can play a key role in improving perceptions of engineering. He discussed a similar effort in Saskatchewan that has helped raise the profile of engineers in the Prairies. "What we have found with this initiative of becoming politically associated with members of the legislative assembly is that in six years we have moved from 'Who are engineers?' to 'How can we help them out?' It's not uncommon now for our office to receive calls from various departments in the government to ask our input into decision-making processes before [they] hit the front lines," Reed said.

"We found this venture to be very helpful to our association. My hopes are that you will be very successful and that you will have a big influence on taking on one of the major problems we have as a profession, of moving us from the silent profession into a much more recognized profession in the country."

Other regulators emphasized the importance of helping internationally educated engineers integrate into the Canadian labour

market. For example, Gaétan Lefebvre, ing., then president, Ordre des ingénieurs du Québec (OIQ), said PEO's recent web-based initiatives to enable international engineering graduates (IEGs) to begin the licensing process prior to arriving in Canada is a significant development on the access issue.

"I would like to congratulate PEO for an achievement which is really inspirational for the OIQ," Lefebvre said. "Your webpage intended for immigrants who wish to become professional engineers is an initiative that has met a real need."

Darrel Danyluk, P.Eng., then past president, Canadian Council of Professional

Engineers (CCPE), picked up on the access issue by offering an update on its From Consideration to Integration program.

He said the program has now gathered significant input from all players in the access to the profession issue and that common

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problems have been identified. Among these are miscommunication about the requirements of licensing, the concentration of international engineering graduates in Toronto and Vancouver, the scarcity of engineering-related employment opportunities for immi-

grant engineering graduates, and the competition between Canadian engineering graduates and newcomers.

Danyluk said CCPE is now doing a labour market study to identify "hot spots" of P.Eng. employment, which should benefit both IEGs and new graduates of Canadian engineering programs.

Other regulators providing reports at PEO's annual meeting discussed highlights of the past year. Dennis McJunkin, P.Eng., president, Association of Professional Engineers and Geoscientists of British Columbia, said a key issue in 2004 was the cancellation of a planned merger between the province's engineers and technologists. He said that despite almost five years of negotiations, BC's engineers voted unanimously to reject the merger plan.

A current project for the BC regulator, McJunkin said, is development of a limited licence designed to accommodate some of the technologists' professional and practice needs.

For Linda Van Gastel, P.Eng., past president, Association of Professional Engineers, Geologists and Geophysicists of Alberta, priorities for 2005 include the rollout of a 10-year strategic plan, increased communication and consultation with members, promotion of wider respect for professional designations, and efforts to include more women and visible minorities in engineering.

Digvir Jayas, P.Eng., president-elect, Association of Professional Engineers and Geoscientists of Manitoba, emphasized the need for engineers to work in conjunction with other design/build professionals. Unfortunately, he said,

the situation in Manitoba between engineers and architects is less than harmonious. Jayas referred to the current conflict in his province over jurisdiction in the design and construction of buildings.

"There is an outstanding application filed in the courts by the Manitoba Association of Architects for a permanent injunction against the City of Winnipeg that would prohibit the city from issuing a building permit on most buildings, unless an architect is involved as the prime consultant. The issue has now attracted the attention of the government of Manitoba, so we expect that by your next AGM, it will be resolved," Jayas said.

Annette Bergeron, P.Eng., then chair and president, Ontario Society of Professional Engineers (OSPE), chose to highlight the importance of collaboration in meeting the engineering profession's priorities.

"Our success to date is definitely a reflection of OSPE's and PEO's ability to work together and have our collective voices heard, which is one reason why OSPE's Joint Relations Committee is dedicated to strengthening the relationship between our two organizations. PEO and OSPE volunteers have been diligently working together, and have successfully resolved issues around data transfer, affinity programs and advertising," she said.

Bergeron also outlined OSPE initiatives in the areas of quality-based selection, the Ontario government's *Electricity Restructuring Act*, and efforts to keep engineering practitioners up to date on *Ontario Building Code* examination requirements under the housing ministry's controversial Bill 124/Regulation 305/03.

#### Foundation for Education "Leader for the Future" Award



Alyssa Lindsay, a fourth-year biological engineering student at the University of Guelph, is the 2005 recipient of the Professional Engineers Foundation for Education "Leaders for the Future" award. The foundation partnered with Engineers Without Borders (EWB) to launch the scholarship program in November 2003. The program aims to recognize outstanding leadership qualities of Ontario engineering students who have been selected as overseas volunteers with EWB. "Volunteerism is an important quality in being a professional," says Stephen Jack, P.Eng., foundation secretary. The foundation is an independent, non-profit, charitable organization established by Professional Engineers Ontario. It provides scholarships to encourage engineering students to pursue careers in the profession. Donations to the foundation can be made through its website at [www.penged.on.ca](http://www.penged.on.ca), or by using the tick-off box on PEO's invoice and including a donation with the annual PEO licence fee.Δ

## Engineers face nanotech challenge

BY MICHAEL MASTROMATTEO

The head of one of Canada's most technologically advanced research institutes says engineers will have a key role in measuring the full social, economic and cultural impact of nanotechnology.

Dr. Nils Petersen, director general, National Institute of Nanotechnology (NINT), was the keynote speaker April 16 at PEO's Annual General Meeting in London, Ontario. He said that despite the futuristic connotations of engineering at the level of atoms and molecules, nanotechnology is poised to significantly alter, if not replace, an entire gamut of existing technologies.

Based at the University of Alberta campus in Edmonton, the National Institute of Nanotechnology was established in 2001 to head up research into the "design rules" of nanotechnology, and to study nanosystems and materials that can be produced for specific applications.

NINT is operated as a partnership between the National Research Council and the government of Alberta.

Peterson, who is also a professor of chemistry at the University of Alberta, said that although nanotechnology is not new, it is only more recently that scientists and researchers have been able to develop more practical applications for it.

Essentially, he said, nanotechnology involves ways of manipulating individual atoms and assembling them to make stronger, better, different structures and materials. As such, nanotechnology can be thought of as "atomic-level assembly" that mirrors nature's own way of putting matter together.

He said current uses include making tennis balls with special coatings to prevent air loss, stronger clothing and building materials, and the production of paints, cosmetics and bandages that resist impurities or degradation. Future applications run the spectrum of energy cells; stronger, self-repairing building materials; medical diagnosis and treatment; advanced computer miniaturization; and development of materials taking advantage of sunlight's yet-untapped properties.



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Petersen noted that while the initial applications of nanotechnology might be in the domain of material science engineers, practitioners from all disciplines will soon be caught up in this new way of doing things.

Nanotechnology brings with it "inevitable conse-

quences of miniaturization" that engineers should be ready to incorporate into design, assembly and commercial applications.

In addition to weighing some of the social, ethical and professional practice considerations of nanotechnology, engineers will also be part of the challenge to integrate several disciplines—physics, chemistry, biology, medicine, social sciences, law—in bringing nanotechnology's potential to safe commercial viability.

## New channel for consultation on MOE policies?

BY MICHAEL MASTROMATTEO

Ontario's engineering regulator continues to work with the Ontario Ministry of the Environment (MOE) to effect a better understanding of the limited licence as it applies to Brownfields redevelopment work.

The environment ministry's understanding of PEO's limited licence has become the main point of contention in consultations over the *Brownfields Statute Law Amendment Act*.

Regulations made under the legislation outline the qualifications of those allowed to certify records of site condition (RSC) under the Brownfields remediation sections of the *Environmental Protection Act*. As it now stands, the legislation specifically excludes PEO limited licence holders as "qualified persons" (QPs) for elements of Brownfields site assessment.

PEO staff met recently with Daniel Cayen, director of the environment ministry's transformation office, and used the meeting to raise a number of issues, particularly the exclusion of limited licence holders from the qualified persons list. PEO also suggested that it be the licensing body to handle all qualified persons, rather than having the MOE set up its own certification program.

PEO is concerned that the exclusion may be because the MOE misunderstands that limited licence holders have the same regulatory obligations as professional engineers. PEO is also concerned that the MOE appears to misunderstand the role of the professional engineer identified on a firm's Certificate of Authorization, since it appears to be concerned mainly with corporate liability rather than with individual accountability.

## Educator sees image makeover for engineering

BY MICHAEL MASTROMATTEO

At least one educator is optimistic that higher admission standards and enhanced program content will play a key role in generating new respect for engineering in Ontario.

Dr. Franco Berutti, P.Eng., dean of engineering, University of Western Ontario in London, said a recent decline in the number of applications to Ontario engineering schools indicates that students could be losing interest in the profession as a rewarding career choice.

Berutti said a plan to raise admission standards and develop more comprehensive programs is in the works for Western's engineering faculty. Although such a move will mean a further drop in applicants in the near term, Berutti is confident that similar action by other engineering educators will ultimately encourage greater respect for the profession across the province.

Berutti made the comments April 15 during PEO's Annual General Meeting in London, Ontario.

He said other professions, such as medicine and law, appear more glamorous to students than engineering. As well, some stu-

dents believe an engineering education involves long hours of study and hard work for relatively small financial and professional rewards.

"The general impression is that engineering is not as 'sexy' as the medical profession...and there are not many shows on TV that show engineering in action—in fact, when there are, they always show trouble," Berutti said. But there are many [shows] that talk about medicine and the medical profession."

Berutti noted a second concern. Some engineering faculties are considering plans to lower admission requirements in order to attract more applicants. The study of algebra, for example, is often cited as a stumbling block for high school students in attaining the higher average marks required for admission to engineering. As such, some schools have said they plan to drop the algebra requirement for admission to engineering.

Rather than lowering admission standards, Berutti suggested a grassroots program to expose students to engineering at an earlier age would likely prove effective in attracting tomorrow's engineers.

"Engineering is off the radar screen of many students," Berutti said. "They don't think of engineering as being sophisticated



Dr. Franco Berutti, P.Eng., dean of engineering, University of Western Ontario, says students could be losing interest in engineering as a career choice.

[enough] for them... We carry a negative stereotype: We don't know how to communicate; we are weird; we carry lots of pencils around in our pockets. So it's an image that is not sufficiently attractive."

Berutti said today's practitioners might consider more

efforts to celebrate engineering as "a helping profession," one associated with success and achievement rather than failure. He also suggested that a change in the perception of engineering would help recruit more female students, and would help convince more internationally

trained engineering immigrants to pursue licensing in Ontario.

"Engineering is not just technical," Berutti said. "Engineering is a way of thinking, a way of acting. It's problem solving. It is much more than just the technical stuff. As many have said, engineering is the liberal arts

degree of the 21st century. It's a basic form of comprehensive education with which you can do and build so many other things and do so much in your life. Engineering is leadership and entrepreneurship and these are the things that you have to stress with our own students."

## Chapter leaders ponder the road ahead

By JENNIFER COOMBES

At the 2005 Chapter Leaders' Conference April 15 in London, Ontario, Phil Maka, P.Eng., chair of the Chapter Leaders' Conference Committee, explained that the day-long event would explore the road ahead—how chapters can make positive contributions that further the goals of PEO and their communities—and also the way members can strengthen the profession through the chapter system, by reaching out to policymakers and government.

In his address, Past President George Comrie, P.Eng., pointed out that one of the problems with engineers, as he sees it, is that although they are relied upon to provide advice and to protect the public, they do not, as yet, have the level of respect and influence enjoyed by lawyers and physicians. Comrie believes that engineers could greatly remedy this situation by actively engaging in a political process, both as individuals and collectively as a profession. He said he sees a specific role for chapters—to influence at the municipal level by focusing programs less on the chapter itself and more on politicians and the public at large. "PEO has embarked on a program to educate the government, but if we

had done this consistently over the years we'd be in a different position today and Bill 124 would never have happened," said Comrie.

He also said there is the need to work more closely with other engineering stakeholders to present a united front.

Comrie called on members to develop their own leadership capabilities, to help them reach out to the community and the political world, and proposed that PEO should underwrite formal leadership development for volunteers to help make this happen (see President's Message, *Engineering Dimensions*, March/April 2005, p. 3).

Peter DeVita, P.Eng., presented some of the challenges of regulating new disciplines. DeVita said PEO needs to be proactive about addressing new disciplines.

Jordan Max, PEO manager, policy, then presented an overview of, and the process used to create, PEO's 2005-2009 Strategic Plan (for specifics of the plan, see *Engineering Dimensions*, May/June 2005, pp. 56-57).

Other sessions in the morning included breakouts to discuss issues relevant to the chapters, including regional offices, a speakers bureau, chapter by-laws,



Attendees of the 2005 Chapter Leaders' Conference brainstorm in a breakout session.

and developing and regulating new disciplines.

The session on creating a collaborative working relationship with government was popular with chapter leaders. The main conclusions drawn were that chapters can and should improve communications with their local MPs, MPPs and all levels of government, by inviting representatives to chapter events. They should also invite news media to cover chapter events that showcase the accomplishments of professional engineers in their communities.

Following the luncheon keynote address by Dr. Franco Berruti, P.Eng. (see p. 15), Jeffrey Crelinsten, P.Eng., provided an update of the Engineer-in-Residence program ([www.eir.ca](http://www.eir.ca)), which matches engineers with schools.

Crelinsten was followed by Howard Brown, of Brown &

Cohen Communications & Public Affairs, the firm contracted to help PEO deliver its key messages to government. Brown said there had been steady progress in PEO's attempts to make itself known by government, which would culminate in a PEO Engineering for Ontarians Day (see special centre pullout) later in the spring at Queen's Park.

The last speaker on the official program was Ian Finke, P.Eng., who led a brainstorming session on ways to strengthen chapter executives. The day concluded with optional presentations by Eric Brown, P.Eng., PEO director, information and technology services, who presented an overview of new IT initiatives at PEO, and Paula Habas, PEO webmaster, who demonstrated the new mailing list and website software for chapters.



## OSPE elects new chair at AGM

The Ontario Society of Professional Engineers (OSPE) continues to make progress with its advocacy and consultative roles, say its new directors.

Speaking May 19 at the OSPE Annual General Meeting, outgoing president and chair Annette Bergeron, P.Eng., said 2004 was marked by OSPE obtaining a measure of financial independence and by its efforts to be consulted by policymakers in considering legislation initiatives impacting on the engineering profession.

The OSPE AGM also featured a brief address from PEO President Bob Goodings, P.Eng., who noted that relations between the advocacy group and the regulator have improved significantly over the last several months. Goodings, who served as OSPE's first elected chair, reiterated the view that relying on the *Professional Engineers Act* and regulations is the best way of dealing with any engineering-related problems in Ontario.

A highlight of the annual meeting was the introduction of the new president and board of directors at OSPE. Chris Cragg, P.Eng., takes over from Annette



Chris Cragg, P.Eng., president and chair, OSPE.

Bergeron as president and chair, while former president Danny Young, P.Eng., was elected to the position of vice-chair. Bergeron will remain on the OSPE board of directors as past chair.

In addition to Cragg, Young and Bergeron, OSPE's 2005 board of directors now includes: Cindy Krenosky, P.Eng. (treasurer), M. Clare Morris, P.Eng. (secretary), and directors Walter Bilanski, P.Eng., Peter DeVita, P.Eng., Anne Sado, P.Eng., Paul Martin, P.Eng., Catherine Karakatsanis, P.Eng., Michael D. Monette, P.Eng., Michael Santaluce, P.Eng., and John Schindler, P.Eng.

The annual meeting coincided with the release of OSPE's new strategic plan, which outlines six goals emphasizing excellence in advocacy, enhanced member participation, growth opportunities for engineers, relevant affinity programs, and the protection of engineering practice from external intervention.

OSPE now has about 11,000 members, with a target of 20,000 members by 2008. Other objectives for the advocacy association include increased retention of existing membership, a stronger public profile, and ongoing efforts to engage all stakeholders in acting as the voice for professional engineers in Ontario.

## Real-world examples convey high-tech manufacturing information

*Manufacturing in Real-Time: Managers, Engineers and an Age of Smart Machines*

Gian Frontini and Scott Kennedy, \$69.95, paperback, ISBN 0750677228, 208 pages, Butterworth-Heinemann College

The text offers a pleasant and powerful read supported by an accompanying CD.

The authors have used several real-world examples to keep an otherwise technically intense subject alive and interesting. The concepts promoted take a system-level view; in this case, the system reaches beyond the company to its customers.

Many examples draw on the automotive industry. Emphasis is on "mass flow," that is, the movement of materials through an advanced production process. The ideas can be applied to any large-volume production facility.

The text introduces the idea of expressing costs and prices as statistical distributions. While costs may be familiar territory for engineers, prices get into the marketplace. The authors view the manufacturing process as a "product stream" that ultimately ends up at the customer. If the company is to remain viable, it must produce the right product for the right price.

The "PC difference" accounts for a new ability that was almost impossible 15 years ago. It is now practical to monitor all automated processes for statistical variance and perform maintenance as required in "real-time." Electronic manufacturing firms have long used a variant of this idea with automated test equipment (ATE). When properly arranged,

tests of an electronic circuit board can find errors, such as a missing component, quickly after assembly. With feedback, the station causing the problem can be adjusted. Hence, rejects or scrap is reduced. The objective is to keep the factory running at as close to design specification as possible, keeping the cost distribution close to optimum.

The text provides a natural merging of both engineering and business know-how as applied to a manufacturing facility. Strategic marketing to define product attributes, as well as pricing, is part of this big picture. Profitability is the difference, or "gap," between the cost and price distributions. The role of the engineer in running a sophisticated, advanced manufacturing plant with robotics and virtual reality design techniques is made abundantly clear.

The accompanying CD includes lectures, tutorials and models to support the text. This material was created by Queen's University in Kingston, Ontario, and is used as a course in fourth-year mechanical engineering.

With a \$15 billion trade deficit in high-tech products, Canadian engineers would do well to apply the techniques introduced in this text.

*Reviewed by Peter DeVita, MASc, MBA, P.Eng. DeVita is a Past President of PEO, and currently president of Richmond Hill-based DeVita Associates, specializing in custom-made computers for high-availability, high-performance and industrial systems with harsh environments.*

ENGINEERING DIMENSIONS REVIEWS BOOKS OF GENERAL INTEREST TO PROFESSIONAL ENGINEERS. COMMENTS MADE ARE THE OPINION OF THE REVIEWER.