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JULY/AUGUST 2014

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INTEGRATING FUTURE NEW TECHNOLOGIES INTO CANADA'S ECONOMY



J. David Adams, P.Eng., FEC
President

Following is an address President Adams gave on June 8 to the Indian Institutes of Technology Alumni Canada's PanIIT 2014 Toronto Conference.

Honoured guests, fellow engineers, it is indeed a privilege and a pleasure to have been invited to address your gathering today.

I understand the purpose of your 2014 Toronto conference is to discuss which products and services engineers will be required to provide in 2050 and, further, what education and training he or she must be proficient in

to innovate, integrate and transform these new sciences into practical products and services.

Engineers, by definition, have generally been seen as the individuals who translate the pure science of the future, to the applied science of the present.

Operating on this premise, it behooves us to develop a practical method of determining which of, say, the promising 100 new technologies, have the propensity to serve humankind, while preserving the environment that supports life on this fragile planet Earth.

It is for this very practical reason that I bring a message this morning introducing a calculated method for determining which new technologies will be evaluated, based on their compatibility with current products of Canadian companies.

To complete the picture, this evaluation will also ascertain which additional new technologies as published by *Scientific American*, among others, will promise employment through manufacture in Canada by totally new manufacturers.

When engineer Ravi Gupta, PhD, invited me to speak, he described the Ivy League calibre of the engineers attending today. When I suggested it might be of interest to all of us if we focused on the potential for research and commercial business, which could be developed in Ontario or elsewhere in Canada, from future technologies, he heartily agreed with my subject matter.

Hence, the title of my talk today is: "Integrating future new technologies into Canada's economy."

But first, let me introduce myself. My name is David Adams, professional engineer, president of Professional Engineers Ontario.

While our association of professional engineers has taken the initiative to establish new disciplines in the fields of nanotechnology and bioengineering, a much more comprehensive program of analysis of future new technologies, and the engineers' engagement in them, must be undertaken if engineers are to fulfill our normal role of applying engineering to new scientific development.

However, may I take a few minutes at this point in my address to describe my long-time interest in your native land of India?

I shall begin by telling you that ever since I was a schoolboy, living in the country outside Ottawa, I felt an affinity for all those living within the large, pink-coloured Commonwealth country map displayed in our grade schools. The prominence of India was evident as the largest Commonwealth landmass outside of Canada.

Further to this, I continued to be intrigued by the story of India related in historian Ramachandra Guha's book, *India after Gandhi*, where he points out that many of the independent countries in Asia and Africa have tried to copy the British parliamentary system of government. However, to this day, only India continues to function as a democracy, without a single language or religious faith.

The experiment has failed in Sudan, Pakistan and Burma, among others, resulting, as you are aware, in periods of military rule and instability in those countries. As Ayaz Amir, a Pakistani columnist in Karachi wrote: "India goes to the polls and the world notices, while Pakistan plunges into another exercise in authoritarian management. When will it dawn on us, that it is not India's size, population, tourism or IT industry that is making them look successful, but Indian democracy?"

Once again, India has gone peacefully to the polls, this time giving the BJP [Bharatiya Janata Party] a substantial majority, endorsing the secular ideals of the Indian constitution, testifying to the deep roots that democracy has put down in the soil of India.

Turning to our subject at hand, both countries continue to live in a relatively stable economic environment, with all the same problems of global unemployment and the need for the development of new technologies to replace the old, which brings me to the subject of my remarks today.

In the face of a continuing clamour for government funding in Canada, with the further loss of 28,900 jobs in April of this year, we must diligently seek the employment of surplus engineers and capital by redirecting endeavours to generate

PRESIDENT'S MESSAGE

the income and tax revenue needed to support individuals, as well as finance government and social services.

In these endeavours, future technologies must be reviewed and paired with existing and new companies, just as was done in the production and sale of manufactured goods in years gone by, when furniture, farm machinery, textiles and all manner of goods, were manufactured and sold in neighbouring communities.

What then will be the products and processes that will fill their places within a globalized economy and highly competitive environment? Similarly, what will be the new educational requirements to adequately exploit these new technologies? What new technical accreditation must be developed for our engineering courses, and what will be the time frame in which to accomplish these tasks?

It's clear that a pragmatic, focused future demands driven study to identify the highest potential contributors to GDP [gross domestic product], taxation revenues and employment growth, which are absolutely essential to determine the country's strategic direction.

Then, intermediate and longer-term areas of opportunity can be determined, followed by public and private investment plans.

To plan this demand-side study for Canada or, specifically, Ontario, today I am proposing a study that will provide an overview of related objectives, deliverables and methodology.

An objective study and analysis is required to specifically answer the following questions.

**FUTURE TECHNOLOGIES MUST BE
REVIEWED AND PAIRED WITH EXISTING AND
NEW COMPANIES, JUST AS WAS DONE IN THE
PRODUCTION AND SALE OF MANUFACTURED
GOODS IN YEARS GONE BY.**

1. Determine demand and opportunity

Which specific sciences and technologies have the highest assessed propensity for progressing from research stages to deployable status?

Which Canadian and, specifically, Ontario sectors, segments and industries have the highest potential to leverage these new sciences and technologies to accelerate Canadian competitive and economic positioning within the next five to

10 years, in specific terms of growth in GDP, employment and public revenues?

What will be the magnitude, timing and demographics of these opportunities?

What will be the economic consequences of meeting or failing to leverage these opportunities?

What will be the resulting impacts associated with actually realizing these growth potentials in terms of Canada's ability to attract and retain the "best and the brightest" of our engineers?

What will be the impact of these new technologies upon our educational institutions?

2. Findings

The study must consolidate these findings directly into a framework that illustrates:

- nature, timing, magnitude and demographics of determined economic opportunities;
- magnitude and timing of economic and competitive impacts of identified opportunities;
- directly related scientific knowledge, skills demand and timing;
- directly related "in place" supply of specific knowledge and skills, including advanced education availability; and
- assessed demand/supply inconsistencies.

3. The study structure

The study initialization and set-up phase would include a 12-step process to determine the highest potential technology list, to be married to the highest potential sectors and industries available to exploit them.

Assessment of potential firms, by means of a web-based questionnaire and contact with senior executives representing these enterprises, would provide candidates for integrating new technologies. Those enterprises not equipped to commercialize technologies would be subsequently analyzed as start-up ventures.

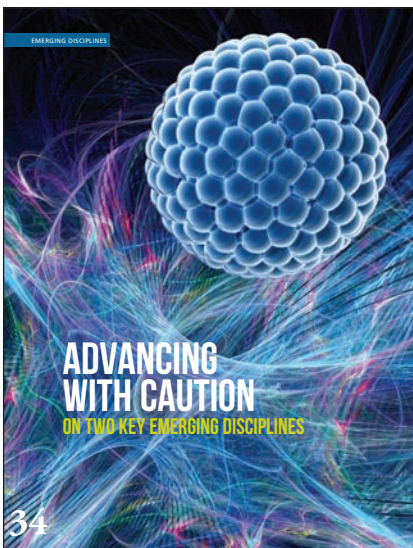
Recommendations to change public policy, educational policies and priorities, including directly related programs, practices and processes, would be made to take advantage of these new opportunities.

Total project timing and cost would be estimated through contracts using a PERT/CPM [program evaluation and review technique/critical path analysis] format.

In closing, I conclude with the opinion that Canada would benefit immensely on all fronts by determining our best demand-driven strategic direction and capability for the integration of new technologies into our economy. Thank you very much. Σ

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A FRESH START



Jennifer Coombes
Editor

IT'S BEEN ABOUT three months since PEO's annual general meeting (AGM) in Niagara Falls, and this issue we offer full coverage of the meeting (p. 8) and the Penta Forum (p. 11), an annual opportunity for PEO chapters to share information and best practices.

As always, the AGM marked the yearly turnover of council (see "Introducing PEO council 2014-2015,"

Engineering Dimensions, May/June

2014, p. 41). It also marked the departure of President Annette Bergeron, P.Eng., FEC, and the return of David Adams, P.Eng., FEC, who can now add "three-time PEO president" to his list of life accomplishments.

By now, most members will be familiar with President Adams' background and accomplishments from his past two presidential terms and accompanying *Engineering Dimensions* feature articles (July/August 2008, p. 28 and July/August 2011, p. 27). However, Adams' approach to his presidency for 2014-2015 appears to have evolved since his last time in office (see "Third time may be the charm for David Adams," p. 31). Adams admits he has a controversial leadership style and has been accused in the past of unilateral decision making, which he attributes to his many years as a management executive. This time around, he presents to council a kinder, gentler and self-described "grassroots" persona. He's finding a way to work in harmony, not at cross purposes, with council and has committed himself to responding to member

concerns. He is, as this issue's cover suggests, at the service of council and membership.

The other main focus of our July/August issue is emerging disciplines and, in particular, the progress PEO is making in the areas of nanotechnology molecular engineering and communications infrastructure engineering. "Advancing with caution on two key emerging disciplines" (p. 34), explores PEO's way forward in developing a regulatory practice framework for these challenging emerging disciplines.

I'd also like to draw your attention to a number of items of which licence holders should be aware:

- PEO continues to work steadily toward the repeal of section 12(3)(a) of the *Professional Engineers Act* (industrial exception). In fact, PEO staff will present a new repeal work plan to council in September (p. 12);
- The Bélanger Inquiry report into the Algo Centre Mall disaster is expected in October (p. 14). *Engineering Dimensions* will be dissecting the report in our pages following its release;
- There are changes to the PEO privacy policy of which P.Engs should take note (p. 16); and
- The Office of the Fairness Commissioner has released its targeted assessment of several of PEO's processes (p. 16).

Our digital edition subscribers will notice that, for the first time, we've provided embedded video content—the outgoing and incoming presidential speeches at the AGM—as well as bonus image galleries of the meeting, the Penta Forum and throughout the news section, which can be accessed by clicking on the camera symbol.

We hope you enjoy this multimedia-enhanced issue of *Engineering Dimensions!* Σ

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Professional Engineers Ontario

THIS ISSUE: Let's see what President David Adams has in store for his third time at the helm. We also look at PEO's treatment of two game-changing emerging disciplines: nanotechnology molecular engineering and communications infrastructure engineering.

ENFORCEMENT HOTLINE

Please report any person or company you suspect is practising engineering illegally or illegally using engineering titles. Call the PEO enforcement hotline at 416-224-9528, ext. 1444 or 800-339-3716, ext. 1444. Or email enforcement@peo.on.ca.

Through the *Professional Engineers Act*, Professional Engineers Ontario governs licence and certificate holders and regulates professional engineering in Ontario to serve and protect the public.

APPEAL FOR MEMBER INPUT heard loud and clear AT 2014 AGM

By Michael Mastromatteo

An outgoing president who focused on PEO's core regulatory activities has passed the reins of leadership to a new, but previously tested, president committed to responding to "grassroots" member concerns.

PEO's 92nd annual general meeting (AGM), April 26 at the Fallsview Casino Resort in Niagara Falls, was marked by a willingness to maintain a positive momentum as the regulator looks to clarify and promote its core mission.

Outgoing President Annette Bergeron, P.Eng., FEC, reminded delegates of her emphasis on regulatory and licensing issues as the hallmark of her term.

 [President Bergeron's address](#)

"I am proud of council's focus on regulation this term as we have had to deal with some critical regulatory issues," she said.

Meanwhile, incoming president David Adams, P.Eng., FEC, making his third appearance as head of PEO council, pledged to be more conciliatory in the coming year.

"I've been accused of being autocratic and I suppose it's because of my many years in line management—where I decided to do something, and we put it forward," Adams said. "This is not the way council should work and I've finally figured this out."

 [President Adam's address](#)

Adams served previously as PEO president in 2008 and again in 2011.

PEO heads into 2014 with a more cohesive, less fractured, engineering community, thanks largely to the efforts of Bergeron and former president Denis Dixon, P.Eng., FEC, to smooth out PEO's relationship with the Ontario Society of Professional Engineers (OSPE).

As is becoming customary, the annual meeting was preceded by the April 25 Penta Forum and that evening's Order of Honour gala. The annual meeting is also the venue for the presentation of PEO's S.E. Wolfe Thesis and V.G. Smith awards to high-achieving, recently licensed engineers who entered the profession by writing examinations to demonstrate they meet the



PEO President David Adams, P.Eng., FEC, delivered his incoming address at PEO's 2014 annual general meeting.

Rachel Bryan, P.Eng., accepted PEO's 2014 V.G. Smith award, which is given annually to a professional engineer who was licensed during the past year by writing technical exams and who achieved the highest mark in any three examination papers. Trevor Day, P.Eng., was awarded PEO's 2014 S.E. Wolfe Thesis Award but was unable to attend the luncheon to receive his award. The award is given to a professional engineer licensed during the year whose engineering thesis was judged to be the best of the reports received.

academic requirements for licensing. This year's winners were, respectively, Trevor Day, P.Eng., and Rachel Bryan, P.Eng.

In addition to the ceremonial passing of the gavel from the outgoing to incoming president, the meeting introduced the new council, including newly elected members, and paid a final tribute to departing councillors. New to council this year: Serge Robert, P.Eng., Nick Colucci, P.Eng., FEC, George Comrie, P.Eng., FEC, Charles Kidd, P.Eng., and Marilyn Spink, P.Eng. Departing from council: Denis Dixon, P.Eng., FEC, Chris Taylor, P.Eng., FEC, Tarsem Lal Sharma, PhD, P.Eng., Denis Carlos, P.Eng., FEC, and Sandra Ausma, PhD, P.Eng.

Special guests attending this year's annual meeting included Engineers Canada then-President W. James Beckett, P.Eng., FEC; Andrew Loken, P.Eng., FEC, and Robert McDonald, P.Eng., FEC, Association of Professional Engineers and Geoscientists of Saskatchewan; Isabelle Tremblay, ing., Ordre des ingénieurs du Québec; and Paul Acchione, P.Eng., president and acting CEO, OSPE.

PEO Councillor Chris Roney, P.Eng., BDS, FEC, also a board member of Engineers Canada, brought greetings from the national association and updated meeting attendees on its initiatives.

In her final report, Bergeron said her term came with the "unexpected challenge" of recruiting a new registrar, following the departure in September 2012 of former registrar and CEO Kim Allen, P.Eng., FEC, to become CEO of Engineers Canada. The situation was finally resolved in January with the arrival of new Registrar Gerard McDonald, P.Eng.

"While significant work has been accomplished this year to improve the governance of our profession, there is still much to be done," Bergeron said. "A presidential term of one year is short by governance standards. Fortunately, our new registrar will be formulating a forward-looking corporate and strategic plan for council's consideration that should assist in keeping PEO focused on its mandate."

Bergeron said the ongoing struggle with the provincial government over repeal of the industrial exception, coupled with the fallout from the Bélanger (Elliot Lake) Inquiry into the partial collapse of the roof of the Algo Centre Mall, were high priorities on the 2013 regulatory agenda.

"I am very proud of the association's contributions to the [Bélanger] commission, which included participation in expert roundtable sessions and recommendations intended to strengthen PEO's regulation of engineering practice and to help prevent similar tragedies from occurring again," she said. "I look forward to the commission's final report and anticipate that we, as a profession, may have additional regulatory work ahead of us as a result."

Bergeron earlier outlined the disposition of seven member submissions from the 2013 annual meeting. The most contentious of these—that President-elect Adams pay off legal costs to PEO stemming from a judicial review of an April 2012 council

decision before being permitted his return to council—was settled internally by the regulator.

Other 2013 submissions were referred to council. In some cases, council decided to take no further action on them for various reasons. In other cases, council was informed of administrative changes already in the works to deal with them. Council considers all members submissions brought to annual meetings, but they are not binding on council.

There were no member submissions for discussion at this year's annual meeting.

In discussion of the minutes of the 2013 annual meeting, Ray Linseman, P.Eng., FEC, noted the omission from the minutes of the text of two submissions he made that were referred directly to council by consensus of the meeting rather than being discussed at the meeting. Accordingly, the minutes of the 2013 meeting were approved as amended by the addition of the missing submissions and have been republished to PEO's website.

Addressing annual meeting delegates as president for the third time since 2008, Adams described a recent meeting he attended with PEO members from his home Georgian Bay Chapter.

He outlined five major regulatory expectations, as expressed by chapter members, and encouraged ongoing "grassroots" consultation with members to help determine priorities for council to consider in 2014 and beyond.

The five expectations were new legislation to define more clearly the roles and responsibilities of professional engineers, the transfer of advocacy-related work to OSPE, maintaining "practice profiles," through which PEO could track members' competencies and professional development efforts, development of more practice standards and guidelines, and the need to maintain "a vibrant and relevant profession" based on a P.Eng. with up-to-date technical content, augmented by emerging disciplines.

Noting that the issues brought forward by Georgian Bay Chapter members are but a small sample of practitioners' regulatory concerns, Adams said he believes they reflect more widely held priorities.

He invited ongoing feedback from members, "positive or negative," to enable him to get a better feel for practitioner concerns and priorities. It's this grassroots appeal, Adams wryly hinted, that was responsible for his re-election as president despite the controversies and strife that beset his most recent term.

"I'm a grassroots kind of person, as you know," he said. "And that's why people are very confused when I get re-elected, because they don't know where this support is coming from. But I know where it's coming from. It's coming from the members and they want things done."

A webcast of the annual meeting is available at www.peo.on.ca.

ENGINEERS CITED for role in environmental reporting enhancements

By Michael Mastromatteo

ONTARIO'S environment minister has praised professional engineers for enabling an enhanced environmental reporting system that should go a long way in speeding up permits for environmental work in the province.

Jim Bradley, MPP, St. Catharines, and then-minister of the environment, was keynote speaker at PEO's annual general meeting luncheon April 26 in Niagara Falls.

The longest-serving, sitting member of the Ontario legislature—first elected in 1977—Bradley also called on professional engineers to help bring about more “reasoned debate” in the province’s political discourse.

In addition to his role with the environment ministry, Bradley has served in several other cabinet portfolios in the Dalton McGuinty and David Peterson governments.

Bradley said that by providing sound advice on environmental policy matters, engineers and other professionals can help overcome the “hyper partisanship” that characterized recent exchanges among Ontario’s three main political parties.

“I want to say as well that your association [PEO] is heard,” Bradley said. “Sometimes you would like to see that reflected in legislation and regulations that are passed and proclaimed, but I do want to assure you that you are heard, and I think it’s because of the manner in which you carry out your jobs, your responsibility and the engagement with those of us in the political process. We really do value the opinions of people out there who have some expertise, who have some background, who are often professionals providing that kind of advice.”

Bradley cited the vital links between the engineering profession and his ministry in helping protect the environment and, in particular, the Great Lakes fresh water system. He said today is a far cry from the early days of the Ontario environment ministry when some civil servants decried engineers’ influence as the “iron ring disease.”

The environment minister said sound engineering design, expertise and advice have been crucial in the development of legislation, regulation and policy direction. He suggested engineers act as partners with the government to enable key environmental control efforts, such as water treatment, pollution abatement and remediation of contaminated soil.

In particular, Bradley mentioned engineering contributions to modernization of the ministry’s Environmental Activity and



Jim Bradley, MPP, St. Catharines, and then-minister of the environment, presents a keynote speech at PEO’s AGM luncheon on April 26.

Sector Registry (EASR), a web-based registry to record and speed up permits for prescribed environmental activities.

“I would be remiss if I didn’t acknowledge and thank you for your contributions to the modernization of that process,” Bradley said.

PEO’s annual meeting luncheon has become an important venue for Ontario politicians, engineers in the public service and other policy-makers to reflect on engineering contributions to the province’s economic viability and quality of life.

Previous luncheon speakers have included Ontario’s then-transportation minister Glen Murray, Gerry Chaput, P.Eng., then-assistant deputy minister, Ontario transportation ministry, and Dale Bracewell, P.Eng., manager of active transportation, City of Vancouver, and director of Olympic transportation during the February 2010 Vancouver Winter Games.

2014 PENTA tackles wide range of program ideas

By Michael Mastromatteo



PEO Councillor Len King, P.Eng., FEC, was moderator at the 2014 Penta Forum.

Jeanette Biemann, P.Eng., of PEO's Algoma Chapter, led discussion of equity and diversity practices at the April 25 forum.

PEO'S PENTA FORUM continues to solicit grassroots input from membership while promoting best practices and information sharing among chapters.

Held April 25 in Niagara Falls, this year's Penta event included an opportunity for chapter representatives to offer feedback to the regulator as it draws up a new, five-year strategic plan.

The Penta Forum, instituted in 2012, is now held annually, the day before the PEO annual general meeting.

The penta (five) description refers to the PEO chapter system's five administrative regions.

In opening the session, PEO Councillor Len King, P.Eng., FEC, chair of the Regional Councillors Committee, said the forum is a convenient opportunity for members to come together to learn about corporate

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initiatives and to catch a glimpse of activities other chapters are undertaking at the local level.

The 2014 forum opened with a hands-on demonstration of Etobicoke Chapter's highly popular Engineering Idol competitions, which pit teams of high school students in engineering design challenge competitions.

Moderated by Desmond Gomes, P.Eng., of Brampton Chapter, and Linda Drisdelle, P.Eng., chair, Etobicoke Chapter, the session divided participants into regional teams to undertake a design challenge; a judging panel of Annette Bergeron, P.Eng., FEC (outgoing president), Rob Willson, P.Eng. (councillor), and Gerard McDonald, P.Eng. (PEO registrar), chose the winning team.

Drisdelle offered tips for other chapters to run their own Engineering Idol contests and expressed hope that the event might be replicated in all 36 PEO chapters over the next several years. A more immediate goal is to have five competitions—one in each region—by 2015.

In outlining the strategic plan initiative, McDonald said one of the first things he heard as PEO's new registrar was the need for an updated plan with more strategic clarity to focus staff and volunteer efforts. He then had participants form smaller groups to discuss potential vision, mission and goal statements.

Following a noon bridge-busting competition—testing for the best designed popsicle-stick bridge—the Penta Forum

focused on chapter support for PEO's structured engineering intern program (SEITP), led by Western Region members Stacey Shyshak, P.Eng., and Wayne Kershaw, P.Eng.

The Western Region has been active in revitalizing SEITP, especially as it relates to easing the experience review portion of the licence application process. It's believed a formalized engineering intern program can bring benefits to the regulator, industry and applicants in terms of initial licensure, recruitment and licensure retention.

The Penta Forum wrapped with presentations on PEO's equity and diversity guidelines, led by Jeannette Biemann, P.Eng., and Philip Riegle, P.Eng., of the Northern Region, and with examination of recent council discussions on continuing professional development (CPD). Pierre Legault, P.Eng., Lawrence Lupton, P.Eng., Harald Mueller-Scholten, EIT, and Sucha Mann, P.Eng., moderated the discussion with a view to gathering member input on a CPD problem-definition statement. They also reviewed CPD requirements in other engineering jurisdictions.

In closing the 2014 forum, King paid tribute to the organizing committee and encouraged chapter volunteers to continue bringing their ideas and experience forward for consideration by the wider profession.

PEO TO RAMP UP industrial exception repeal plan in September

By Michael Mastromatteo

OWING to the June 12 provincial election, PEO has put off until September its latest strategy for the repeal of the industrial exception.

Despite the delay, the regulator has remained active in making its case for the repeal, which was put on hold one year ago by Premier Kathleen Wynne.

The industrial exception, section 12(3)(a) of the *Professional Engineers Act*, permits certain acts of engineering in an industrial setting to be done by non-licensed employees.

PEO has long worked to have the repeal enacted, and was close to success before the province made its June 2013 decision to postpone implementation indefinitely.

PEO Registrar Gerard McDonald, P.Eng., announced in May that the regulator will present a new repeal work plan at the September council meeting.

In the meantime, PEO has remained active on several fronts to outline the regulator's concerns about the exception and the delay in its repeal.

On April 22, McDonald met with Sophie Dennis, assistant deputy minister of labour, and, two days later, with Ontario Attorney General Madeleine Meilleur.

In its meetings, PEO has been making the case that allowing the exception to remain creates a safety gap in Ontario industry and is inconsistent with national practice. No other province in Canada has a similarly broad exception in its engineering legislation.

At the regulator's annual general meeting April 26, former PEO president Nick Monsour, P.Eng., FEC, beseeched

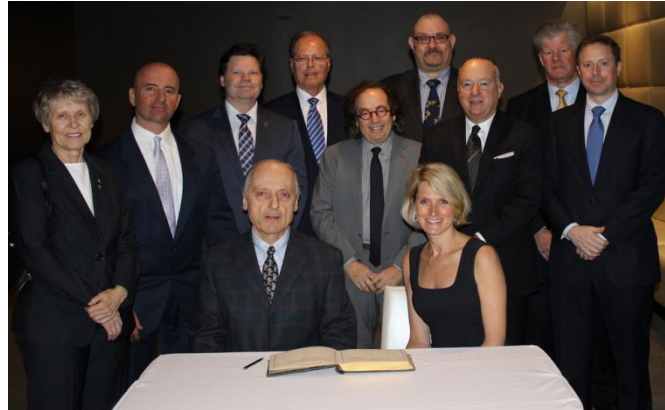
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council members to do their best to “have this crazy thing [industrial exception] eliminated.”

In response, then-President Annette Bergeron, P.Eng., FEC, said PEO’s “resolve to see the repeal proclaimed remains steadfast.” She said efforts to win the repeal had been a major challenge throughout her term.

As a follow-up to the April 22 meeting with the labour ministry, PEO filed a freedom of information request to get more data relating to the causes of industrial injuries related to equipment. The ministry is co-operating with PEO in this request.

In early May, PEO’s registrar and other engineers met with Liberal MPPs Mitzie Hunter and Glen Murray to discuss the repeal.

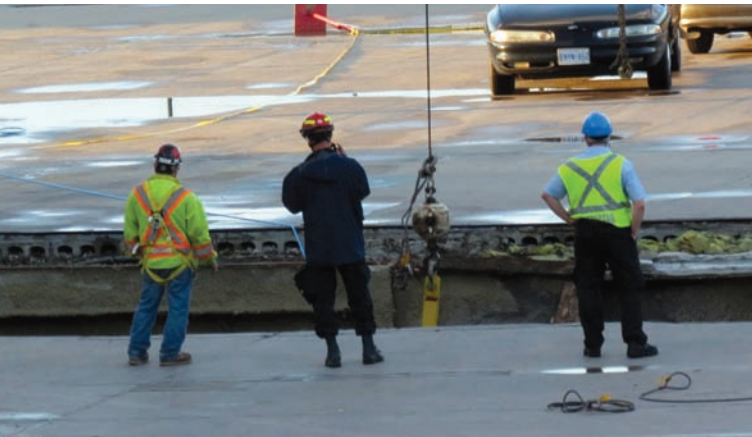
During the provincial election campaign, PEO also proposed the following question be put to each candidate in all 107 Ontario constituencies and posed it to candidates in three chapter-organized, all-candidates debates (see GLP Journal, p. 43):

“Statistics show that Ontario manufacturing workers are at the greatest risk of injury. In addition, deaths occur 30 per cent more often in Ontario manufacturing than in manufacturing anywhere else in Canada. In fact, 40 companies over the past four years have been fined for industrial accidents related to machinery and, just this past year, three workers have died in Brantford, Simcoe County and Vaughan from machinery-related injuries. To create a safer workplace, the provincial government in 2010 repealed section 12(3)(a) of the *Professional Engineers Act* to return engineering oversight to manufacturing machinery design. However, this law has still not been enacted.

“How will you and your party assure the manufacturing workers of Ontario that their workplaces are safe and will you and your party enact this law to protect them?”

ALGO CENTRE MALL collapse lessons still coming to the fore

By Michael Mastromatteo



It is with more than passing interest that PEO awaits the release of the Bélanger Inquiry report into the June 2012 Algo Centre Mall disaster in Elliot Lake.

The report, looking into the causes of the collapse that killed two residents and injured several others, is scheduled for release in October 2014.

In the months since the inquiry hearings ended, however, there has been no shortage of speculation as to what recommendations will appear in the final report.

PEO presented 11 recommendations to the inquiry.

The entire Elliot Lake experience was the focus of a “going forward” presentation May 30 at the Ontario Centre for

Engineering and Public Policy (OCEPP) policy conference in Toronto (see p. 17).

Structural engineer Chris Roney, P.Eng., BDS, FEC, who represented PEO at an inquiry roundtable in November, moderated the OCEPP presentation and offered a concise overview of the events leading up to the partial collapse of the mall’s roof-top parking deck, and the actions of several engineering companies that had inspected the facility between 1979, the year it was built, and June 2012.

Roney said one of the key “themes” arising from the inquiry was the lack of information available to the public about engineers who had been disciplined by PEO for incompetence and professional misconduct. The engineer who completed an inspection of the mall just weeks before its collapse, and who described the areas he had observed as “structurally sound,” was working under a licence suspension at the time of the visual inspection. His report was reviewed, stamped and signed by a licensed colleague at his firm. That report was later amended by its author without the licence holder’s knowledge.

In addition, testimony at the inquiry underscored the lack of standards relating to inspections of existing buildings.

“We have lots of regulations on designing or constructing a new building, but there isn’t anything out there dealing with an existing building,” Roney said, adding that the scope of a structural inspection today is often left up to the engineer and his or her client.

PEO has since addressed the issue by producing its practice guideline, *Structural Engineering Assessments of Existing Buildings*, which Roney said had been well received by Bélanger Inquiry officials.

Another problem identified from inquiry testimony, Roney said, was a failure to synthesize information contained in the scores of building reports made on the Algo Centre Mall over the years. Roney pointed out that the mall had been inspected nearly half a dozen times between 1998 and 2012 and, while some problems were identified, there was not a process in place to share and build on information that might have resulted in corrective action.

“Each report was done in isolation and was not communicated to municipalities and other officials,” Roney said. “Witnesses [to the inquiry] said that if they had had access to previous investigations, they might have done something sooner.”

A Norr Engineering forensic investigation 10 days after the incident said a collapse was all but inevitable, given the corrosion of a connection on a steel beam underlying the area of collapse.

Roney said that whatever the upshot of the Bélanger Inquiry, the Ontario government must be prepared to do its part to prevent similar tragedies.

“Most of the proposed changes require creating standards that need legislative authority to be enforced,” Roney said. “We [PEO] can’t do it without the concurrence of government. We’re optimistic that through this tragedy, there will be motivation on the government’s part to put through some changes to improve engineering regulation in the interest of the public in Ontario.”

Meanwhile, PEO then-President Annette Bergeron, P.Eng., FEC, said the Elliot Lake Inquiry has triggered renewed debate about continuing professional development for engineers. Speaking at PEO’s annual general meeting in April, Bergeron said that while PEO’s participation in the inquiry was admirable, there will certainly be more regulatory work in the offing.

“In addition to the [Bélanger] report, and knowing what the inquiry has already asked of PEO, council recently requested terms of reference for a task force to explore what PEO currently has in place for licence holder professional development, and whether it is sufficient to assure quality, competence and, ultimately, public safety,” Bergeron said.



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Privacy commissioner REVIEWS PEO's privacy policy



By Jennifer Coombes

PEO'S now 10-year-old privacy policy was reviewed recently by the privacy commissioner of Ontario and revised based on the review. As PEO is not a commercial enterprise, it was not required to comply with the *Personal Information Protection and Electronic Documents Act* (PIPEDA) when it came into force in January 2004, but voluntarily developed its own privacy policy based on PIPEDA's underlying principles.

Based on the recent review of the decade-old policy, council approved the following changes to PEO's privacy policy at its March meeting:

- PEO will not collect personal information for commercial purposes, or disclose it;
- PEO will not disclose applicant or licence holder personal information to third parties for commercial purposes and will not do so without receiving written consent of the licence holder or engineer-in-training;

- PEO will not provide bulk data transfers to a third party for non-regulatory purposes;
- PEO will take steps to notify members in a timely manner if private information in the register is accessed or compromised through unauthorized and unlawful means; and
- PEO's human resources will collect a signed confidentiality agreement or other council-approved form from all staff and volunteers upon their hiring, retainer, selection, election or appointment.

At the same meeting, council approved the following personal data that was previously publicly available be removed from PEO's Expanded Public Information Model (EPIM) (website licence holder directory), as required by the privacy commissioner:

- year of graduation;
- degree(s) at the time of registration; and
- institution granting the degree(s).

Both PEO's privacy policy and EPIM are available at www.peo.on.ca by following the Privacy Policy link at the bottom of the home page.

Office of the Fairness Commissioner RELEASES PEO ASSESSMENT

By Jennifer Coombes

In its mandate under the *Fair Access to Regulated Professions and Compulsory Trades Act* (FARACTA), the Office of the Fairness Commissioner (OFC) receives reports each year from the regulatory bodies of Ontario's professions and trades outlining their licensing practices. The OFC assesses these reports, alternating between full assessments and targeted assessments; full assessments address "specific and general duties described in FARACTA," while targeted assessments address recommendations made to each regulator in the prior full assessment.

Together, these assessments ensure regulators' registration practices are fair and that each body is held accountable for continuous improvement.

In May, OFC performed a targeted assessment of PEO's licensing practices, focusing on previous recommendations in the full assessment completed February 2012.

PEO was examined in the areas of information for applicants, assessment of applications, and training and the principles of transparency, impartiality and fairness. OFC has found that, since the last assessment, PEO has taken steps to promote transparency, impartiality and fairness and has determined that PEO demonstrates commendable practices (defined as programs, activities or strategies that go beyond the minimum standards set by OFC assessment guides) in the areas of information for applicants, transparency, impartiality and fairness.

Specifically, OFC reports that PEO has improved:

- information available to applicants through information sessions offered to interested groups and materials distributed at conferences for internationally trained professionals; posting a PowerPoint presentation to PEO's website that walks potential applicants through the steps to meet academic, experience and exam requirements for licensing; and sharing information about the Financial Credit Program;
- transparency through the *Valuing Newcomers* brochure that welcomes immigrant engineering graduates, describes steps to licensing that can be completed in applicants' home countries and provides information about bridging and assistance; the Roadmap to Engineering in Canada website; and providing clear information in the *Licensing Guide and Application for Licence*;
- impartiality by developing a comprehensive equity and diversity policy that includes online training; and
- fairness by keeping pace with scientific advancement and examining new areas of practice and their implications for licensing; collaborating with two university-based bridging programs to recognize their graduates as meeting PEO's academic requirements for licensing; and offering the Engineering Intern Program that provides one-on-one mentoring and an annual experience review while applicants complete their work-experience requirement.

OFC also offered recommendations for areas in which PEO should improve:

- Information for applicants—add registration timelines for each step in the registration process in the applicant section of PEO's website;
- Assessment of qualification—continue working with the BC regulator's Environment Experience Requirement Project to adopt or modify its methods associated with the one year of Canadian experience; have an assessment expert review the interview process for waiving exams; solicit feedback from applicants about how to improve information about the assessment of work experience; and conduct an efficiency review to identify opportunities for streamlining assessment processes;
- Training—review training programs for members of the Academic Requirements (ARC) and Experience Requirements (ERC) committees with attention to equity and diversity;
- Transparency—finish implementing the online application and follow-up system to augment or replace the current manual system involving mail, fax and/or drop-off; clarify information about taking courses in lieu of assigned exams and offer instructions for applicants about obtaining course approval from PEO; review template letters to

applicants about academic and work experience assessment results, ensuring letters to applicants include clear reasons for decisions and include options for addressing deficiencies;

- Impartiality—review assessment approaches used by other countries with large numbers of internationally educated applicants to learn strategies for enhancing impartiality; incorporate specific and measurable equity and access provisions into the work of the ARC and the ERC, with support from PEO's Equity and Diversity Committee; and
- Fairness—continue to work with the Canadian Environment Experience Requirement Project to identify acceptable alternatives for meeting the competencies associated with the one-year Canadian experience requirement and adopt or modify recommendations; review licensing approaches used by other jurisdictions with large numbers of internationally educated engineers to learn about admissions methods that allow internationally educated applicants to become licensed in a more streamlined manner.

A full report of PEO's targeted assessment is available by emailing ofc@ontario.ca.

POLICY DEVELOPMENT

still fertile ground for engineering input

By Michael Mastromatteo

ANTICIPATED CHANGES to energy distribution and best use of infrastructure investment provide new opportunities for professional engineers to make positive contributions to public policy in Ontario, according to speakers at the annual Ontario Centre for Engineering and Public Policy (OCEPP) conference May 30 in Toronto.

The theme of the 2014 conference was "Getting engineering to the policy table," an issue of concern to the profession since at least 2004. Keynote speakers included Carol Wilding, president and CEO, Toronto Region Board of Trade, and Stephen Schott, PhD, associate professor, Carleton University School of Public Policy and Administration. Brian Surgenor, PhD, P.Eng., of the faculty of engineering and applied science, Queen's University, and a member of the OCEPP advisory board, was moderator for the day's proceedings.

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In setting the stage for discussion, OCEPP Director Bernard Ennis, P.Eng., PEO director of policy and professional affairs, said that, after a number of fits and starts, engineers have become more aware of their influence in the public policy sphere. Nonetheless, there is still a perceived “disconnect” between engineering and government, he added: “This is especially puzzling since so many of the problems faced by society, from economic development to climate change, require or would be mitigated by an engineering intervention.”

In discussing the role for engineers in the future direction of policy-making, Schott cited a US carbon dioxide emission abatement program and Ontario Power Generation’s Niagara Tunnel hydro power project as two practical examples of engineers making key contributions to policy development.

In her presentation on engaging government leaders, Wilding described the Board of Trade’s approach to influencing policy development, which comprises a four-step formula involving problem identification, making the case for policy intervention, identifying a range of solutions and, finally, selecting the most appropriate time to approach government leaders with policy proposals.

Engineers hoping to emulate this success in policy development must use fact-based evidence, she said, emphasizing that, above all, influencing policy should aim beyond the partisan and the parochial.

“Your contribution can’t be totally self interested,” Wilding said. “Good, credible, public policy has to be in the public good.”

The conference program also featured presentations on Ontario’s long-term energy plan, and the northern Ontario Ring of Fire mineral extraction proposal, as two areas in which engineers would appear to have a natural policy development role.

Warren Mabee, PhD, associate professor, Queen’s University, with a joint appointment in geography and policy studies, said engineers should be aware of the province’s energy priorities, such as increased natural gas generation, a reduction of nuclear power, stepped-up conservation efforts and, above all, a more decentralized generation system.

By understanding where the government is headed with its long-term energy plan, professional engineers can play a more prominent, forward-looking role, he said.

Vic Pakalnis, P.Eng., president of the Sudbury-based MIRARCO mining innovation organization, and Blaine Bouchard (substituting for Christine Kaszycki, northern development and mines secretariat), commented on engineers’ potential to influence policy in support of the Ring of Fire plan—a \$60-billion mining and infrastructure project that could become a huge windfall for the Ontario and Canadian economies.



OCEPP Director Bernard Ennis, P.Eng. (left), and PEO Councillor Chris Roney, P.Eng., BDS, FEC, discussed lessons learned from the Elliot Lake mall collapse of 2012.

OCEPP board member Gary Thompson, P.Eng., and Warren Mabee, PhD (right), shared thoughts on engineering contributions to Ontario energy policy.

PEO Councillor Marilyn Spink, P.Eng., asks a question of one of the speakers at the May 30 OCEPP policy conference.

“Where is the engineering profession in terms of priority setting and solutions?” Pakalnis asked. “Where is the profession in terms of encouraging the best of us to take up this kind of leadership position in the political arena? There are lots of teachers, lawyers, accountants and even doctors [in the political sphere], but not too many of us in the engineering profession are at the cabinet tables, helping steer a very technologically sophisticated society where it should be going.”

In some cases, policy is developed in the wake of disasters and accidents, and it was in this vein that PEO Councillor Chris Roney, P.Eng., BDS, FEC, discoursed on lessons learned from the June 2012 fatal mall roof collapse in Elliot Lake.

Roney said events leading up to the collapse are an incentive for the provincial government, with input from PEO, to tighten up the regulatory framework in the inspection and oversight of existing buildings

and other forms of public infrastructure (see “Algo Centre Mall collapse lessons still coming to the fore,” p. 14).

The policy conference also usually includes the presentation of OCEPP’s two annual student essay awards. However, 2014 recipients Saijan Singh, University of Western Ontario, and Connor Smith, University of Toronto, were both unable to attend the conference.

Through such events as its policy conference, OCEPP encourages professional engineers to participate in policy-making, especially at the issue-identification and problem-definition stages, where input from engineers would have a significant impact.



The Ontario Centre for Engineering and Public Policy (OCEPP) would like to thank the following organizations for their sponsorship of the centre’s Engineering & Public Policy Conference, which took place on May 30 in Toronto.

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ENGINEERS CANADA APPOINTS 2014-2015 PRESIDENT

By Jennifer Coombes

Paul Amyotte, PhD, P.Eng., FEC, will lead Canada’s engineering regulators as president of Engineers Canada for the 2014-2015 term. Engineers Canada is the body that supports the provincial and territorial engineering regulators across the country.

Amyotte, a chemical engineering professor, and the C.D. Howe chair in engineering since 2011, at Dalhousie University in Halifax, has represented Engineers Nova Scotia on the Engineers Canada board since 2010. He was Engineers Nova Scotia’s president for the 2008-2009 term.

Active with other engineering organizations, he is a member and past president of the Canadian Society for Chemical Engineering, a member of the American Institute of Chemical Engineers, a fellow of the Chemical Institute of Canada, The Engineering Institute of Canada, Engineers Canada and the Canadian Academy of Engineering, and is co-chair of the materials and chemical engineering evalua-



Paul Amyotte, PhD, P.Eng., FEC, took over as Engineers Canada president on May 23.

tion group of the Natural Sciences and Engineering Research Council of Canada.

Amyotte received his undergraduate degree in chemical engineering from the Royal Military College of Canada, MSc from Queen’s University and PhD from the Technical University of Nova Scotia.

His expertise lies in preventing and mitigating dust explosions. He is the editor of the *Journal of Loss Prevention in the Process Industries*, the author of three books and has published or presented over 200 research and educational papers.

Amyotte began his term May 23 at Engineers Canada’s annual general meeting in New Brunswick.

Engineers look for input IN REVIVING MATH INSTRUCTION

By Michael Mastromatteo

ENGINEERS HAVE A role to play in revising Ontario's math curriculum to promote technical and problem-solving skills among elementary and high school students. This interconnection between engineering and math was just one common theme emerging from the PEO Education Conference May 24 in Toronto.

The conference, which attracted 50 volunteers and education specialists to PEO's headquarters, emphasized math as a practical but under-appreciated tool for innovation.

In keeping with the mathematics theme, the conference offered presentations on how engineers can work with educators to support the technological fluency of elementary and high school students.

Organized annually by PEO's Education Committee, the conference aims to equip those involved with education outreach through PEO's chapters with tools to develop an appreciation among pre-university students for the value of math and science studies. The committee is chaired by Oakville Chapter member Samer Inchasi, P.Eng. PEO Councillor Martha Stauch, a career educator, is council liaison to the committee and chaired the 2014 conference planning committee.

This year's conference included an opportunity to give feedback to the Ontario education ministry on how engineers might influence provincial curricula. At the 2013 conference, Ontario Education Minister Liz Sandals asked engineers and committee members for their input in revising elementary and high school curricula.

Committee volunteers collected the output from small group discussions during the 2014 conference and pledged to forward the suggestions to the education ministry.

Speakers included Tracy Solomon, PhD, a health system research scientist at Toronto's Hospital for Sick Children, who described how a child's early development has an impact on retention of math and science knowledge.

Two retired educators, Mary Lou Kestell, formerly of the Ontario Mathematics Coordinators Association, and Teresa Murray, a 32-year veteran



Retired educator David Zimmer described math teaching strategies at PEO's Education Conference.

SATEC students (left to right) Shiv Patel, Safeerah Zainab, Michael Chellappah and Nashif Nabi display their "math in the woodshop" barrel at the May 24 PEO Education Conference. The students designed and built a water-tight, wooden barrel using no adhesives or binding materials as a test of trigonometry's problem-solving capability.

of the Hamilton school system, also offered insights on how the math curriculum might be revised to regenerate interest and achievement among pre-university and college age students.

David Zimmer, past president, Ontario Association for Mathematics Education, discussed "learner-centred" approaches to math education. He said some of the teaching models now in use don't provide students a thorough understanding of math basics and concepts.

One of the more provocative presentations came from retired former engineer John Bachmann, director of the Society for Quality Education, a parent-led organization advocating more choice in the public education system.

Bachmann's presentation—why the math curriculum needs to be changed to avoid having this [same] discussion in 20 years—said organizations such as PEO are needed to bypass the “education cartel” of teachers' unions, school board officials, the education ministry and administrators of the education ministry's Education Quality and Accountability Office (EQAO), which he said acts as an inadvertent roadblock to new or traditional teaching ideas.

“We should begin by lobbying for legislation that will allow for charter schools, and then work with like-minded teachers to set up schools that will focus on excellence in science and math education, using approaches different from those prevalent today,” Bachmann said. “Allowing competition in this way will weaken the cartel's stranglehold on our schools and make all schools receptive to new methods, regardless of ideology. The influx of new ideas from outsider groups like PEO will make the future prospects of our students, our province and our country that much brighter. If we don't, our kids and grandkids are going to be having the same discussion 20 years from now.”

As they did at last year's conference, grades 9 and 10 students from the Scarborough Academy for Technological, Environmental and Computer Education (SATEC) outlined the results of their “math in the woodshop” project, which saw them design and manufacture a water-

tight, wooden barrel using no adhesives or binding materials. The project was aimed at demonstrating how math skills, particularly trigonometry, can be used to solve real-life challenges.

Bruce McCowan, P.Eng., a long-time member of PEO's Education Committee, is a teacher at SATEC.

The conference also included sharing best practices and innovative projects. Engineers Annabelle Lee, P.Eng., and Phil Sullivan, PhD, P.Eng., described their experience with athletics competitions for students, while Paymon Sani, P.Eng., and Russell Couprie, P.Eng., of York Chapter, outlined their experience with alternative design challenge events.

The conference concluded with engineers from the Toronto-Humber, Mississauga, East Toronto, Oakville, Grand River and Scarborough chapters outlining some of their successful student outreach activities in 2013.

Education Committee Chair Inchasi said the math theme was a new twist for this year's conference. He urged participants to take back some of what they heard and experienced at the event to their local chapters and communities.

CEO ANNUAL MEETING focuses on new health and safety tool

By Jennifer Coombes

The benefits of the Certificate of Recognition (COR) were front and centre on the agenda at Consulting Engineers of Ontario's (CEO) June 5 annual general meeting in Toronto. A panel session, featuring major buyers of engineering services in the greater Toronto area, discussed the merits and impacts on business of the new-to-Ontario tool that can be used to assess an engineering firm's health and safety management system. The COR program began in Alberta but is quickly becoming the gold standard for auditing workplace health and safety practices across Canada and is just as steadily becoming a pre-qualification requirement for many contractors.

First to speak was Paul Casey, vice president, programs and strategic development, Infrastructure Health and Safety Association (IHSA). The IHSA is

the only authority able to grant a COR in Ontario (www.ihsa.ca/cor). Casey said: “COR provides a roadmap of what a [health and safety] program should look like. It assists companies to have the confidence that [their programs] are actually being implemented. You get that governance and oversight.”

Panelists Jim Fraser, head of capital programming, Toronto Transit Commission (TTC), and Eric Hopkins, P.Eng., manager, USRC construction, Metrolinx, are both looking to COR as a way to confidently pre-screen potential contractors. Fraser said: “The 19 elements of COR give us a common vocabulary to talk to contractors. In fact, we like COR so much, we are going to become certified ourselves.” Hopkins, who says Metrolinx is following in TTC's footsteps in adopting COR, added: “The elements of COR provide us with confidence in contractors in the procurement process to increase our overall level of safety.”

Another panelist, Nancy Bonham, acting director, capital works delivery, engineering and construction services, City of Toronto, said the city intends to move ahead with COR because it's been difficult



Representing CEO's board of directors were, left to right, Michael Snow, P.Eng., chair 2012-2013; Barry Steinberg, P.Eng., chief executive officer; Rob Kivi, P.Eng., outgoing chair; Dave Bannister, P.Eng., incoming chair; and Bruce Potter, P.Eng., treasurer.

to ensure that an appropriate health and safety system is in place and being followed by all its contractors. "COR appeals because it offers an independent audit," she said.

Giorgi Sakvarelidze, health, safety & environment manager, Hydro One Brampton Networks Inc., which got its own registration in March, said, "COR offers IRS [internal responsibility system], which makes everyone responsible for safety."

Casey summed up the case for COR when asked by panel moderator David Zurawel, manager, stakeholder relations, CEO, how he sees the program being rolled out across the province. He said: "Everything that COR is, is already based in legislation. COR just creates a system that implements oversight and ensures that health and safety programs are being implemented."

CEO has signed a memorandum of understanding with IHSA that will provide CEO a closer working relationship with the association and provide members access to subject matter experts within the IHSA.

Brief presentations were also made by Theresa Erskine, P.Eng., of Munro Ltd., one of CEO's principal corporate sponsors, and Anne Poschmann, P.Eng., new chair of the Association of Consulting Engineering Companies, who spoke about her organization's continued work to promote investment in infrastructure.

Barry Steinberg, P.Eng., CEO chief executive officer, updated members on the organization's accomplishments, including having the wording of Bill 141 (*Infrastructure for Jobs and Prosperity Act*) changed to specifically name engineers as contributing to the government's ongoing commitment to long-term infrastructure funding, the recently formed CEO/Metrolinx Joint Transit Engineering Council, and the organization's progress in promoting quality-based selection.

Outgoing Board Chair Rob Kivi, P.Eng., said: "It's important that CEO remains the authoritative voice of consulting engineering companies in Ontario and we continue to work together to promote a sustainable business environment for our members. We can be proud of our many successes."

David Bannister, P.Eng., incoming board chair, vowed to continue the momentum of his predecessors in the areas of financial stability, government relations, client relations, member services and communications.

Bannister joins the other members of CEO's 2014-2015 board: Kivi, past chair; Fouad Mustafa, P.Eng., chair-elect; Bruce Potter, P.Eng., treasurer; Nadine Miller, P.Eng., secretary; Tyrone Gan, P.Eng.; John Krug, P.Eng.; Mike Tulloch, P.Eng.; Peter Mallory, P.Eng.; Bill Allison, P.Eng.; Christine Hill, P.Eng.; and John McGill, P.Eng.

The afternoon closed with two learning sessions: "Privacy, surveillance and social media: Understanding an employer's rights and obligations" for CEO's mature professionals, presented by Sundeep Gokhale, Sherrard Kuzz LLP, and "Harnessing the global power of social media" for CEO's young professionals, by Mike Kujawski, partner and senior consultant, Centre of Excellence for Public Sector Marketing.

OSPE WELCOMES BACK DANNY YOUNG

as president

By Michael Mastromatteo



The OSPE board includes, top row, left to right, Pat McNally, P.Eng., Graham Greenland, P.Eng. (treasurer), Ray Givens, P.Eng., Steven Rose, P.Eng., Valerie Davidson, P.Eng., and Jonathan Hack, P.Eng., and, seated, Helen Wojcinski, P.Eng., Paul Acchione, P.Eng. (past chair and acting CEO), Karen Chan, P.Eng. (vice chair), Danny Young, P.Eng. (president and chair), M. Clare Morris, P.Eng., (secretary). Missing from photo is Sue Tessier, P.Eng.

LONG-TIME VOLUNTEER Danny Young, P.Eng., was elected president and chair of the Ontario Society of Professional Engineers (OSPE) May 6 at the advocacy organization's annual general meeting in Toronto.

Young, who has been an OSPE volunteer almost since its inception, leads an organization that hopes to build on a number of achievements over the past year.

Also elected to the OSPE executive for 2014 were Karen Chan, P.Eng., vice chair; Graham Greenland, P.Eng., treasurer; M. Clare Morris, P.Eng., secretary; and Paul Acchione, P.Eng., past chair.

Acchione is also acting CEO (part-time) as OSPE looks to find a successor to former CEO Mark Dietrich, who left the organization in March. OSPE plans to have a new CEO in place within the next three months.

"During my term, building membership and relationships were top priorities for me and for OSPE's board of directors," Acchione said. "As engineers, we all share the desire to see our profession valued and our voice heard. OSPE must continually grow, improve and demonstrate value to Ontario's engineers."

PEO was well represented at the meeting. Among those attending were PEO President-elect Thomas Chong, P.Eng., FEC, Registrar Gerard McDonald, P.Eng., Past President Annette Bergeron, P.Eng., FEC, and Councillors Michael Wesa, P.Eng., FEC, Changiz Sadr, P.Eng., FEC, Rob Willson, P.Eng., Roger Jones, P.Eng., Marilyn Spink, P.Eng., and David Brown, P.Eng., BDS.

Kim Allen, P.Eng., FEC, and W. James Beckett, P.Eng., FEC, CEO and president of Engineers Canada, respectively, represented the national engineering organization.

In bringing greetings from PEO President David Adams, P.Eng., FEC, and council, Chong emphasized the improved

relationship between PEO and OSPE. "I expect members of our organizations expect PEO and OSPE to have a collaborative, co-operative relationship, so that we may continue to strengthen the image of the profession, and to enhance the value and relevance of the P.Eng. licence," Chong said.

Other guests bringing greetings included Barry Steinberg, P.Eng., CEO, Consulting Engineers of Ontario, and Marisa Sterling, P.Eng., PEO enforcement manager and president, Ontario Professional Engineers Foundation for Education.

OSPE welcomed newly elected Patrick McNally, P.Eng., Steven Rose, P.Eng., FEC, Helen Wojcinski, P.Eng., FEC, and Sue Tessier, P.Eng., to its board of directors, and paid tribute to departing directors Greg Cook, P.Eng., Jane Huang, P.Eng., David Wood, P.Eng., Rick Hohendorf, P.Eng., and Past President Nadine Miller, P.Eng.

The annual meeting concluded with a volunteer service award presentation to Bob Goodings, P.Eng., FEC, the first-ever president of OSPE, and a former president of PEO.

Quebec engineers reject OIQ's attempts to improve public trust



By Jennifer Coombes

Several recent rule changes at Ordre des ingénieurs du Québec (OIQ) have frustrated members and prompted them to force an “extraordinary special meeting” (ESM) on May 6. Gathering at the Palais de congrès in Montreal, over 1800 Quebec engineers expressed their dissatisfaction with the ordre’s measures to restore public trust in Quebec engineers in the wake of allegations of corruption made against OIQ members.

A major item on the ESM agenda was a resolution calling for the cancellation of insurance changes, including a mandatory drug insurance program, that engineers say are costing them thousands of dollars more in insurance premiums and are hitting smaller firms and sole proprietors the hardest. In the past, Quebec’s engineers could obtain their own professional responsibility insurance but OIQ recently mandated one provider, Encon, for all members who work in private practice.

Engineers also called for a mandatory training requirement to be suspended, a halt to a \$90 fee increase, and for the ordre’s entire executive committee and its director-general, André Rainville, to be removed.

In an article published in Montreal’s *The Gazette* May 5, former OIQ vice president Giuseppe Indelicato, ing., one of the organizers of the group that called for the special meeting, said the organization is “taking advantage of what has happened at the Charbonneau Commission to increase regulation for their own purpose.”

According to OIQ, the insurance changes are intended to better protect the public. On its website it states: “Some members or companies were not adequately insured for professional liability...The insurance contract by the college with Encon provides complete coverage that meets all the requirements of the professional code and regulations.” The body also notes that almost two dozen professional orders in Quebec have imposed training requirements on members.

OIQ Vice President Isabelle Tremblay, ing., said the board of directors will study the seven resolutions passed at the ESM but has no legal obligation to follow them.

JOINT ACTIVITIES ENABLE greater exposure for OSPE

By Michael Mastromatteo

THE ONTARIO SOCIETY of Professional Engineers (OSPE) and individual PEO chapters could soon be working together to plan events and share resources.

An enhanced joint events program, begun with the Ottawa Chapter in February 2014, could be instituted and made available to other chapters across the province.

The enhanced program got off to a slow start in February due to the logistical complexities of OSPE contributing to events far from Toronto and of incorporating OSPE’s available staff and financial resources into the enhanced program.

However, PEO Ottawa Chapter Vice Chair Guy Boone, P.Eng., says he is confident staff at OSPE and volunteers at Ottawa Chapter will resolve the early logistical problems.

“OSPE is adjusting its normal working procedures to more effectively execute its role in the enhanced joint events program with Ottawa Chapter,” Boone said. “We need to do this before OSPE can ask PEO to expand the program to other chapters.”

The Ottawa Chapter already had experience working with OSPE with two pilot programs in 2013, including running policy seminars and arranging joint constituency meetings with local MPPs. The latter project was under the auspices of PEO’s Government Liaison Program (GLP) and OSPE’s Political Action Network (PAN).

“The two programs have been expanded to other chapters across the province and demonstrate how well PEO and OSPE work together when there are issues that affect members in both organizations,” Boone says.

In a separate joint initiative by OSPE’s career services department and PEO chapters, a series of Engineering Employment Events (E3) have been rolling out across the province. Successful E3 joint events have occurred in Toronto, Kitchener and Sarnia. Three more are planned for 2014 in Ottawa, Barrie and Mississauga, with six more planned for 2015.

Paul Acchione, P.Eng., OSPE’s acting CEO, mentioned the enhanced joint events program April 26 at the PEO annual general meeting in Niagara Falls.

“The joint event program was inspired, in part, by the experience of PEO’s Government Liaison Program and OSPE’s Political Action Network,” he said. “Previously, both groups organized separate events to liaise with local and provincial politicians to spread the engineering message. Rather than having two groups pursuing similar objectives, it was determined that the two entities begin working as one.”

Acchione said the joint events program can help connect OSPE to engineers beyond the greater Toronto/southern Ontario area and might result in an enhanced events program for all engineers in their local areas. He said without a chapter system of its own, OSPE lacks some of the financial and volunteer resources available through PEO’s chapter network.

OSPE members in outlying areas still want to receive such services as professional development, career services, social events, workshops and plant tours—events quite common to Toronto and southern Ontario area chapters—he noted.

“By working together, OSPE and PEO chapters can combine their strengths and provide a broader

range of services to the members without incurring additional costs,” Acchione said.

Since the enhanced joint events pilot project began, Ottawa-area membership in OSPE has grown about 7 per cent in three months, some three times faster than the growth rate for the rest of the province.

The enhanced program includes a special membership discount that recognizes PEO’s financial contribution to the joint events. OSPE believes the membership growth demonstrates that PEO Ottawa Chapter members appreciate that OSPE is working more closely with the local chapter.

The Ottawa Chapter pilot is slated to wrap up in August 2014, after which OSPE and PEO will evaluate its success in terms of OSPE membership growth and benefits to members of both organizations. If the results warrant, the next step would be to approach PEO council about expanding the special offer to other chapters across the province.

The joint events pilot program is being conducted under the direction of the PEO-OSPE Joint Relations Committee and is supported by Dave Brown, P.Eng., PEO Eastern Region councillor.

“I am confident this pilot will continue to be successful, and am hoping it will result in a new and progressive level of co-operation among PEO, chapters and OSPE,” Boone says.

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FORUM SEEKS TO BOLSTER ENGINEERS' health and safety formation

By Michael Mastromatteo



Marios Ioannidis, PhD, P.Eng., a professor of chemical engineering at the University of Waterloo, moderated a session on safety in the engineering curriculum at the 2014 Minerva Summer Institute.

A safety-first mindset continues to make inroads for engineering students and educators, especially as the profession faces new expectations for practitioner integrity and competence.

As evidenced by proceedings at this spring's Minerva Institute learning forum, April 23 on the campus of the University of Waterloo, safety and health in the work environment continue to gain momentum.

The Minerva Institute and its Minerva Canada foundation is a not-for-profit organization promoting health and safety awareness in the curriculum of postsecondary institutions. Minerva works with universities and industry to identify key issues in safety and health and develop learning modules for engineering practitioners and educators.

The institute runs annual learning forums, in conjunction with its two-day "summer institutes." In addition to the April 23 Waterloo event, forums were scheduled for Ottawa and Halifax.

Speakers at the 2014 forum included Jacques Paynter, P.Eng., FEC, a member of the Canadian Engineering Accreditation Board, Graeme Norval, PhD, P.Eng., of the University of Toronto (U of T), and Marios Ioannidis, PhD, P.Eng., of the University of Waterloo, who led an open forum dedicated to safety in the engineering curriculum.

Norval, associate chair of U of T's department of chemical engineering and applied chemistry, told *Engineering Dimensions* that instilling a safety culture at the university level is the best road to follow.

"The business world has many small employers, and it's difficult for such employers to build a safety culture," he said. "If they never were exposed to such a culture, it is a foreign concept. Education is the linchpin to creating such a culture. We need to have the graduating students entering the workforce with the right safety attitudes."

Afternoon sessions featured a presentation on emergency preparedness by John Collin, director, emergency and protective systems, Bruce Power, and a session on fire safety by Beth Weckman, PhD, P.Eng., of the University of Waterloo's mechanical and mechatronics engineering department.

Weckman is one of North America's leading specialists in an engineering approach to fire safety and prevention.

The forum continued with presentations on electrical safety led by Francis Hardy of the Electrical Safety Authority, and Anis Haque, PhD, P.Eng., of the University of Calgary's department of electrical and computer engineering.

The concluding presentation, incorporating safety education into curriculum for an entire faculty, led by Marc Aucoin, PhD, P.Eng., of the University of Waterloo, encapsulated one of the key drivers of the Minerva Institute's raison d'être.

Minerva President Tony Pasteris, P.Eng., a 2013 recipient of an Ontario Professional Engineers Award, says the summer institute and learning forums help the organization reach its goal of introducing safety and health concepts to professors, postgraduate students and other specialists.

"Each of our learning forums over the last two years has been geared to improving the health and safety education taught to engineering undergraduate students, and we do this by getting to their educators, the many engineering professors across Canada and from all disciplines," he says. "We are trying to instill health and safety as a core value for engineering students as they graduate and enter the workplace or academic institutions."

Among the benefits to improved health and safety education, he cites reduced injuries and illness in the workplace, and the preparation of more safety conscious employees as they enter the workplace.

"Industry and government want to see their future hires better trained in health and safety before they come to work for them," Pasteris says.

SCIENCE FAIR SHOWCASES chapter's volunteer spirit

By Michael Mastromatteo

AMID THE STRESS, excitement and anticipation of 450 students at the Canada Wide Science Fair (CWSF) May 10 to 16 in Windsor, a team of professional engineers was quietly working in the background.

Nearly as impressive as the students' displays of science and technology was the dedication of Windsor-Essex Chapter members who served as judges, greeters, couriers, troubleshooters and general support workers for the week-long national competition.

Organized by Youth Science Canada, the fair was introduced in 1962 to showcase students' science and engineering acumen. Since then, the number of students participating in the fair and in its qualifying regional competitions has ballooned into the tens of thousands.

From the earliest times, engineers have been key players in the annual competitions. For the 2014 fair, Windsor-Essex engineers were busy well in advance of the May 10 kickoff.

Chapter member Edwin Tam, PhD, P.Eng., associate dean, faculty of engineering, University of Windsor, was chief judge for CWSF. In that role, he helped to recruit teams of judges to evaluate and score each project.

The chief judge also trains recruits, coordinates the judging process and selects special award winners. More than 300 people, not all of them engineers, are recruited as judges for each fair.

Asif Khan, P.Eng., industrial engineering manager, Chrysler Motors, and Windsor-Essex Chapter secretary, was one such judge.

Another volunteer, Wanda Juricic, P.Eng., the chapter's Education Committee coordinator, spent most of the fair week assisting at the host delegates' office—the accommodation and logistics hub for the students and their chaperones.

In addition to supplying the chief judge from within its ranks, the Windsor-Essex Chapter hosted an "engineering lounge" the evening of May 12, and developed ideas on how to keep the students entertained throughout the week. The engineering lounge event showcased the work of PEO and engineering regulation to students across the country.

But it wasn't just Windsor Chapter engineers who were represented at the fair. Other engineers, including Ron Cherkewski, P.Eng., of Grand River Chapter, headed a delegation of nearly a dozen Waterloo-area student contestants.

Meanwhile, in the exhibit hall, Engineers Canada representatives staffed an information booth promoting the work of the national organization and offering information on its Pathfinder Career System program. Pathfinder helps students



Ottawa high school student Daniel McInnis (centre), one of the winners of the 2014 Canada Wide Science Fair in Windsor, credited engineering support as a key part of his winning entry. With him are co-winners Thomas Imbeault-Nepton of Saint-Honoré, Quebec, and Maya Burhanpurkar of Oro-Medonte, Ontario.

identify competencies and skills associated with success in engineering practice.

Science fair contestants also benefited from their interaction with engineers. Daniel McInnis of Ottawa, who won the top award in the senior (grade 11) category for his work with a low-cost 3-D scanner aimed at improving the quality of life for amputees, said engineers at Fidus Systems were instrumental in the success of his winning entry. Fidus, an Ottawa-based electronics product development company, employed McInnis as a summer student in 2013.

"I've had a bunch of engineers who really have supported me along the way," he said. "I owe it to the company's CEO [Michael Wakim], as well as its vice president of engineering [John Bobyn, P.Eng.] If it weren't for them, I wouldn't have been introduced to 3-D scanning and 3-D scanner design."

Andrew Dowie, P.Eng., Windsor-Essex Chapter chair, said local engineers have always encouraged outreach to the community, so it was natural they would play a part in the science fair.

"We have done many activities over the last few years, including Wireless World—a full day program in conjunction with the Canada South Science City and OACETT Essex County Chapter centred around wireless technology," he said. "This event concluded during National Engineering Month and featured various practitioners developing the next generation of wireless applications that we will use in our daily lives."

Dowie, who was also a judge, said the fair was a boost for the entire chapter. "The whole experience, to be able to meet students from across Canada and, more importantly, witness the creativity they are showing to enrich their own knowledge and the world around them, was really fantastic," he said.

SUMMARY OF DECISION AND REASONS

In the matter of a hearing under the *Professional Engineers Act* and in the matter of a complaint regarding the conduct of A MEMBER of the Association of Professional Engineers of Ontario.

This matter came to a hearing before a panel of the Discipline Committee on January 21, 2014, at the Association of Professional Engineers of Ontario (association) in Toronto. All parties were present. The association was represented by Leah Price. The member was represented by James S. Hauraney. David P. Jacobs acted as independent legal counsel.

The Notice of Hearing issued on November 7, 2013 and Amended Statement of Allegations dated September 10, 2013 were filed with the panel. There was no issue as to the panel's jurisdiction to determine this matter, which had been referred to the Discipline Committee for disposition. The parties filed an Agreed Statement of Facts signed by the member and counsel for the Association of Professional Engineers of Ontario.

The member, through his counsel, admitted the conduct alleged as set out in the Agreed Statement of Facts. The panel then conducted a plea inquiry and was satisfied that the member's admissions were voluntary, informed and unequivocal. The parties submitted that the agreed upon facts as presented supported the allegations that the member had committed acts of negligence as defined under section 72(2)(a) of Regulation 941 and failed to make reasonable provisions for complying with applicable statutes, regulations, standards, codes, bylaws and rules in connection with work being undertaken by or under their responsibility, pursuant to section 72(2)(d) of Regulation 941 and engaged in unprofessional conduct as defined under section 72(2)(j) of Regulation 941. All of the aforementioned constitute professional misconduct as defined in section 28(2)(b) of the act.

SUMMARY OF THE MATTER

The member provided engineering services for design and construction of a foundation for and the placement of a portable building. The member provided signed and sealed drawings in support of an application for a building permit that was subsequently issued. The construction took place in the spring of 2010. During construction the member authorized several deviations from the original drawings. Some of these deviations were later found, by the chief building

official, to be out of compliance with the Ontario Building Code. Furthermore, the revised drawings submitted after construction did not provide full and accurate details, including the type and size of beam that was actually installed. The dimensions of the foundation, as originally designed and as constructed, did not match the actual dimensions of the portable building. When the portable building was installed by the respondents, the walls were poorly aligned with the foundation. The member, aware of the discrepancies, failed to take steps to confirm the acceptability of the foundation, as built, to carry the eccentric load of the building.

As a professional engineer providing these services, the member knew or ought to have known that the deviations during construction were not in compliance with the applicable building codes. The member admitted committing an act of professional misconduct in that approving the deviations constituted a failure to make responsible provisions for complying with the applicable codes. The member admitted to negligence in failing to ensure the dimensions of the foundation matched the actual dimensions of the portable building and in approving deviations from the original drawings that were not in compliance with the applicable building codes. The member admitted to unprofessional conduct by failing to provide complete and accurate information on the signed and sealed drawings for the completed project.

PENALTY SUBMISSION

The parties filed a Joint Submission on Penalty, which read as follows:

- A. Pursuant to section 28(4)(f) of the act, the respondents shall be reprimanded, and the fact of the reprimand shall be recorded on the register for a period of one year;
- B. The finding and order of the Discipline Committee shall be published in summary form under section 28(4)(i) of the act, without reference to names;
- C. Pursuant to section 28(4)(d) of the act, it shall be a

term or condition on the member's licence that he shall, within 14 months of the date of pronouncement of the decision of the Discipline Committee, successfully complete the professional practice examination (PPE);

- D. Pursuant to sections 28(4)(b) and (k) of the act, in the event that the member does not successfully complete the PPE within the time set out in C above, his licence shall be suspended for a period of 10 months thereafter, or until he successfully completes the PPE, whichever comes first;
- E. In the event that the member fails to successfully complete the PPE within 24 months of the date of pronouncement of the decision of the Discipline Committee, his licence shall be revoked; and
- F. Pursuant to section 28(4)(j) of the act, the respondents shall pay costs to PEO in the amount of \$2,500, within 30 days of the pronouncement of the decision of the Discipline Committee.

The Joint Submission on Penalty stated that the member had independent legal advice with respect to his agreement to the penalty.

The association submitted that the joint submission as to penalty was reasonable for three primary reasons: (1) the matter involved a single project instead of a pattern of professional misconduct; (2) there was no concern of public safety arising from the respondent's misconduct in this case; and (3) the joint submission was a result of arm's-length negotiation between counsel for the parties.

The parties jointly submitted that the circumstances of this case justify the withholding of names in the publication of the decision of this proceeding, the primary reason being the member's age. Counsel for the member assured the panel on behalf of his client that his client was regretful for his misconduct and that it was unlikely that such professional misconduct would ever be repeated prior to his retirement. As such, it was submitted that there was no need for publishing the names for the purpose of deterrence.

PENALTY DECISION

The panel deliberated and rendered its decision. The panel chair noted that the panel had found the member guilty of the misconduct described in the Agreed Statement of Facts. In light of the evidence as contained in the Agreed Statement of Facts, the fact that the parties were represented by attorneys who negotiated the submission as to penalty, and the submissions of the parties, the panel finds that the joint submission

as to penalty and costs is within the reasonable range. The panel concluded that the proposed penalty is reasonable and in the public interest. It is neither disproportionate nor does it bring the administration of justice into disrepute. Accordingly, the panel ordered the penalty in accordance with the Joint Submission on Penalty.

The panel rendered its decision on penalty, including as to publication without the name of the member, orally at the conclusion of the hearing. The member waived his right to appeal. The association advised that it would not appeal.

The oral reprimand was administered at the conclusion of the hearing on January 21, 2014.

The written summary of the Decision and Reasons was signed by John Vieth, P.Eng., as chair on behalf of the other members of the discipline panel: Thomas Chong, P.Eng., Santosh Gupta, P.Eng., Rebecca Huang, LLB, and Rishi Kumar, P.Eng.

NOTICE OF LICENCE SUSPENSION, GERARD J. VAN ITERSON

On May 3, 2014, Gerard J. Van Iterson's professional engineering licence was suspended pursuant to a May 3, 2013 order of the Discipline Committee. The order was issued following a finding of professional misconduct against Van Iterson at a discipline hearing held on that date. Van Iterson's licence was suspended because he failed to write and pass the professional practice examination within the 12-month timeframe prescribed by the Discipline Committee.

CALL FOR NOMINATIONS

PEO'S 2015 ORDER OF HONOUR



THE ORDER OF HONOUR is an honorary society of Professional Engineers Ontario. Its purpose is to recognize and honour those professional engineers and others who have rendered conspicuous service to the engineering profession in Ontario.

Inclusion in the order may be awarded by PEO council to members of the association who have served the profession diligently for many years and/or have made a substantial contribution to the operation of the profession or improvement in its status.

The Awards Committee invites members to submit nominations by the deadline, **October 10, 2014 at 4 p.m.** For nomination forms and guidelines, contact Olivera Tomic, recognition coordinator, at 416-224-1100, ext. 1210, or visit PEO's website at www.peo.on.ca.

New members of the order will be invested at a special ceremony at PEO's annual general meeting in Toronto next April.

Nominators should supply complete details on their nominee. Individual statements from each nominator must accompany the nomination.

Following is PEO's Service Award Honours List. (Only living members are listed. A complete list is available online at www.peo.on.ca.)

COMPANIONS

David W. Euler, P.Eng. '14
Diane Freeman, P.Eng. '14
Colin Moore, P.Eng. '14
Philip Maka, P.Eng. '13
Márta Ecsedi, P.Eng. '12
Robert Dunn, P.Eng. '10
Robert A. Goodings, P.Eng. '09
Nancy E. Hill, P.Eng., LLB '08
George R. Comrie, P.Eng. '07
Richard W. Braddock, P.Eng. '06
Kenneth C. McMartin, P.Eng. '06
Peter M. DeVita, P.Eng. '03
Christine Bell, P.Eng. '02
Michael A. Ball, P.Eng. '00
Barry Hitchcock, P.Eng. '00
Robert T.E. Gillespie, P.Eng. '98
M. Jane Phillips, P.Eng. '98
A. John Bate, P.Eng. '94
William Harold Kerr, P.Eng. '92
John Ormonde Harold, P.Eng. '91
William A.H. Filer, P.Eng. '88
Nicholas Monsour, P.Eng. '88
Corrado (Cory) Comello, P.Eng. '87
Alex Kobelak, P.Eng. '83
J.E. (Tim) Benson, P.Eng. '81
Oscar J. Zanatta, P.Eng. '81
Murray N. Patterson, P.Eng. '80

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David Robinson, P.Eng. '12

Gina P. Cody, PhD, P.Eng. '10
Seimer Tsang, P.Eng. '10
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William R. Walker, P.Eng. '09
Denis Dixon, P.Eng. '08
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Allen K. Lucas, P.Eng. '07
Argyrios Margaritis, P.Eng. '05
Maximus H. Perera, P.Eng. '04
Thadeus E. Wisz, P.Eng. '04
Katherine Crewe, P.Eng. '02
Keith Cross, P.Eng. '02
Ravi K. Gupta, PhD, P.Eng. '02
Kenneth Serdula, PhD, P.Eng. '02
Eric Nejat, P.Eng. '00
L. Grant Boundy, P.Eng. '98
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Harry Angus, P.Eng. '96
Larry M. Galajda, P.Eng. '95
Cameran Mirza, P.Eng. '94
Peter Ridout, P.Eng. '94
R. Michael Jackson, P.Eng. '92
Murray C. Temple, P.Eng. '92
John Ballingal Wilkes, P.Eng. '92
Robert Anthony Grant, P.Eng. '90
Jacob Jeswiot, P.Eng. '90
John F. McOuat, P.Eng. '89
David W. Smith, P.Eng. '89
Brian A. Young, P.Eng. '89
Lloyd Ellwood Saunders, P.Eng. '87
J. Dale Hagerman, P.Eng. '86
Tahir A. Qureshi, P.Eng. '86
William Weinstein, P.Eng. '83
Ernest B. Creber, P.Eng. '82
Edmund J. Thompson, P.Eng. '82
William W. Hastings, P.Eng. '81

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Changiz Sadr, P.Eng. '11
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Otto Zander, P.Eng. '11
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R. Craig Doran, P.Eng. '09
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Amity Man-Chun Lam, P.Eng. '09
R. Maxwell Morrow, P.Eng. '09

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Aziz Akhtar, P.Eng. '08
Geoff Clarkson, P.Eng. '08
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Robert Gravelle, P.Eng. '08
C. K. (Ches) Jonys, PhD, P.Eng. '08
Matthew Ng, P.Eng., MBA '08
Barna Szabados, PhD, P.Eng. '08
Michael C. Wesa, P.Eng. '08
Anthony Bonney, P.Eng. '07
Alberto De-Santis, P.Eng. '07
Thomas A. Etches, P.Eng. '07
Daniela E. Iliescu, P.Eng. '07
Stephen G. Jack, P.Eng. '07
Colin McLellan, P.Eng. '07
Bryan J. Parkinson, P.Eng. '07
William H. Veitch, P.Eng. '07
Malgorzata S. Zywno, P.Eng. '07
Jerry Dudzic, P.Eng. '06
Sean P. McCann, P.Eng. '06
Carolyn Adams, P.Eng. '05
Anthony Cecutti, P.Eng. '05
Judith Dimitriu, P.Eng. '05
Nickolay Gurevich, P.Eng. '05
Charles Kidd, P.Eng. '05
Michael Mastronardi, P.Eng. '05
Clare Morris, P.Eng. '05
David A. Richards, P.Eng. '05
Denise Spadotto, P.Eng. '05
John Turner, P.Eng. '05
Richard Weldon, P.Eng. '05
Holly Anderson, P.Eng. '04
George Biljan, P.Eng., MEng '04
Donald Grandy, P.Eng. '04
John Severino, P.Eng. '04
L. Paul Short, P.Eng. '04
Rohinton Nicholson, P.Eng. '04
Paul Ballantyne, P.Eng. '03
J. Don Chambers, P.Eng. '03
Patrick J. Quinn, P.Eng. '03
David C. Robinson, P.Eng. '03
Peter Schmidt, P.Eng. '03
Stephen Hong Tsui, P.Eng. '03
William R. Campbell, P.Eng. '02
Danny Chui, P.Eng. '02
John F. Clayton, P.Eng. '02
William Edwards, P.Eng. '02
John Glover, P.Eng. '02
Harold Melvin Harju, P.Eng. '02
Jana Havard, P.Eng. '02
Donald E. Haws, P.Eng. '02
H. Richard Patterson, P.Eng. '02
Leonard Brian Ross, P.Eng. '02
Richard Westwell, P.Eng. '02
Paul DiNovo, P.Eng. '00
Robert Douglas Hatfield, P.Eng. '00
Michel Labonté, P.Eng. '00
Paul T. Keenan, P.Eng. '98
Norbert Karl Becker, P.Eng. '96
William Peter Jablonsky, P.Eng. '96
Kevin Lockey, P.Eng. '96
James A. Breschuk, P.Eng. '95
Keitha Buckingham, P.Eng. '95
Franklin A. Holtforster, P.Eng. '95
Gerald Kenneth Strachan, P.Eng. '93
James Francis Hancock, P.Eng. '92
James R.H. Lowe, P.Eng. '92
James A.W. Moores, P.Eng. '92
Douglas Robert Barker, P.Eng. '91
Giuseppe Bonadie, P.Eng. '91
Chado Brcic, P.Eng. '91
Donald James McDonald, P.Eng. '91
Stuart Gordon Angus, P.Eng. '90
Peter Bojtos, P.Eng. '90

Lawrence Robert Lupton, P.Eng. '90
David C. Coll, P.Eng. '89
Brian L. Fenoulhet, P.Eng. '89
J. Gary Locker, P.Eng. '89
Eric J. Maki, P.Eng. '89
David H. Smith, P.Eng. '89
Robert T.M. Tamblin, P.Eng. '89
Brenden D.A. MacKinnon, P.Eng. '87
Thomas A. Fekete, P.Eng. '86
Emil Knebel, P.Eng. '86
Terje Henriksen, P.Eng. '85
Murray Delbert McLean, P.Eng. '85
Ernest Zucker, P.Eng. '85
Miro G. Forest, P.Eng. '84
Carl J. Christensen, P.Eng. '83
John M. Sargent, P.Eng. '83
William A. McCoy, P.Eng. '82
Roland J. Salvias, P.Eng. '82
Thomas G. Moore, P.Eng. '81
John G.D. Alexander, P.Eng. '80
Wm. O. Chisholm, P.Eng. '80
C. John Dunningcliff, P.Eng. '80
Michael R. Garrett, P.Eng. '80
Vimal Kochhar, P.Eng. '80
K.S. Senathirajah, P.Eng. '80

SONS OF MARTHA

The Sons of Martha Medal was discontinued in 1979 and replaced by the Order of the Sons of Martha, renamed the Order of Honour in 1994. Holders of the Sons of Martha are "ex-officio" Officers of the Order.

Raymond Kurkjian, P.Eng. '79
Allan D. McNabb, P.Eng. '79
Daniel C. Mucci, P.Eng. '79
Edwin M. Peto, P.Eng. '79
Michael Sava, P.Eng. '77
Richardus G. Van Heeswijk, P.Eng. '77
Thomas Joseph Baker, P.Eng. '76
Arthur Leonard Braund, P.Eng. '76
James H. Flett, P.Eng. '76
Archie Zagrodny, P.Eng. '76
Richard Addison Hamilton, P.Eng. '75
Alexander MacLean Mackay, P.Eng. '75
Donald E. McGregor, P.Eng. '75
Morden S. Yolles, P.Eng. '74
Joseph K.A. Quittner, P.Eng. '72
H. Van Asperen, P.Eng. '70
Lois C. De Groot, P.Eng. '69
Michael A. Sutton, P.Eng. '68
Alan Gregson, P.Eng. '67

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David J. Sims, Q.C. '06
Kenneth R. Sharp, CA '00
Beverly J. Cockburn '98
Loreta Senin '95
Michael E. Royce '90
Mary Curtis '88
Hubert R. Whitehead '87
Joseph A. Bisceglia '86
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Tom Davey '86
R. Scott White '85
Stanley J. Friesen '81
Alexander L. McLoughlin '80



THIRD TIME MAY BE THE CHARM

FOR DAVID ADAMS

By MICHAEL MASTROMATTEO



Drawing from the hard-won experience of his two previous terms, David Adams, P.Eng., FEC, returns to the president's office as a self-described champion of grassroots thinking at PEO. He wants to hear from members across the province on how best to attend to PEO's regulatory and licensing matters.

In 1970, when former prime minister Pierre Trudeau was deeply embroiled in the FLQ crisis, he created a media stir with his “Just watch me” response to a question from a reporter about how far he was willing to go to put down insurrection and restore order.

Fast forward some 44 years and we have PEO President David Adams, P.Eng., FEC, offering a similarly daring response to some questions.

Admittedly, the setting and circumstances in Adams' case aren't as portentous as they were in Trudeau's time, but perhaps the spirit is somewhat the same.

In mulling over a series of questions about his objectives for the 2014-2015 term as PEO president, Adams said the following: “Regarding these provocative questions, I will deal with them through circumstances throughout the year.”

In other words, it appears Adams would prefer to let his actions do the talking as he takes up PEO's leadership reins for the third time.

Adams also offers a bit of biblical wisdom as principles for the coming term (see sidebar). The principles no doubt stem from Adams' experience as a lay preacher with the Gideon (Bible distribution) society, and from his past work with a Hanover, Ontario, evangelical radio talk show—*Take God's word for it*.

But all reticence aside, Adams seems a bit more conciliatory and upbeat as he begins his third kick at the PEO leadership can.

He still feels some of the glow from presiding over the purchase of PEO's new headquarters building during his first term as president. Although it was a team of PEO staff and volunteers who brought the purchase to fruition, Adams is proud that it happened on his watch, when he gained a majority vote in council to purchase 40 Sheppard West. “I regard that as an achievement,” he says, adding that the move has already provided the regulator with significant occupancy cost savings and 50,000 square feet of rental income.

His second presidential term, however, ended under a cloud in 2012 with Adams immersed in controversies with the Ontario Society of Professional Engineers (OSPE), council and even PEO itself, the last problem stemming from Adams' support of a former council member who resigned, revoked his resignation, and ultimately was prevented from returning to his council position.

Adams, who believes there was precedent for reinstatement of a council member, brought the matter for a judicial review in Ontario court, which later ruled in favour of the PEO position. In Adams' understanding, the court reasoned that, because PEO is a corporation without share capital, a director's resignation is effective when given. The court awarded PEO a portion of the court costs.

The parties have since settled amicably with the condition that the details not be disclosed.

It was somewhat of a rocky period for Ontario's engineering community to have the regulator at loggerheads with the advocacy body, and to have a president at loggerheads with council. Looking back, Adams says the PEO-OSPE contretemps grew out of his concerns about OSPE having neither the membership numbers nor the financial clout to take on the expanded advocacy program it had proposed. Adams even suggested PEO members contribute a portion of their annual fees—by way of limited memberships in OSPE—to help it take up its additional duties. However, the limited membership idea was rejected by OSPE and the PEO-OSPE stalemate grew more intense.

The dust seems to have settled over the last 24 months, however, and a resilient Adams is ready to try a new tack for OSPE, including discussing the possibility of OSPE offering services under contract to PEO.

In the 2012 PEO elections, Adams defeated challengers Paul Ballantyne, P.Eng., FEC, George Comrie, P.Eng., FEC, and Corneliu Chisu, P.Eng., FEC, to become president-elect for 2013 (president in 2014). Considering the way his second term ended, it was an eyebrow-raising victory to say the least. Adams' election message was simple: Elect a president active in assisting members in protecting the public.

And Adams appears to have learned a few lessons on his road back to the president's office. "In the past, I have not been the favourite of council," Adams admits. "Part of that comes from my 'line' background where I tell more than I ask. When you're running a shop, or sent as a troubleshooter abroad, employers expect you to come up with answers, and they expect the problems to be rectified. This requires a different approach than seeking 30 opinions and then trying to reach consensus. So one's background does have a lot to do with it. Now, I fully realize that you have to try and fulfill what they want from you."

Adams also referred to his management style during the April 26 annual general meeting, adding that charges he's autocratic could be the result of an executive way of running a corporation.

"I've been accused of being autocratic and I suppose it's because of my many years in line management—where I decided to do something, and we put it forward," he said at the annual meeting. At the same time, Adams recognizes the old management style of leadership isn't applicable in an organization that relies a great deal on the work of volunteers.

"This is not the way council should work and I've finally figured this out," he says.

It's a promising attitude to begin a third presidency. Adams believes he has significant support among "grassroots" PEO members, despite his past differences with OSPE and some fellow council members.

A definite plus for Adams is the arrival of Registrar Gerard McDonald, P.Eng., on the PEO scene. Adams was intimately involved in the recruitment process for a new registrar, and he's certain PEO made a good choice. "I will be working very closely with Gerard McDonald," he says, "more so than it seemed I was able to do with some of the others. Gerard seeks my opinion, and is genuinely interested in some of the things I have to say."

While he might now shy away from imposing personal priorities, Adams has a list of issues he would like to see emphasized during 2014-2015. He developed the list during a spring meeting with members of Adams' home Georgian Bay PEO Chapter (see President's Message, *Engineering Dimensions*, May/June 2014, p. 3).

In his grassroots-emphasizing way, Adams hopes to take on a "servant-style" presidency that exceeds stakeholder expectations in day-to-day operation. He also takes great pains to invite input and suggestion, "both positive and negative," from members at large as he and council set out to tackle regulatory and licensing business during his term.

Adams also encourages members to challenge his ideas and proposals, and to present their own suggestions for consideration by council.

"I'm a grassroots kind of person, as you know," Adams says. "And that's why people are very confused when I get re-elected, because they don't know where this support is coming from. But I know where it's coming from. It's coming from the members and they want things done." Σ

STATE OF GRACE AND HOW TO FIND IT

Here is President Adams' message in response to 10 "provocative" questions submitted by *Engineering Dimensions*. It may require some reading between the lines, but it suggests notes of providence, humility and conciliation for the three-time president:

"Let us see if the vine flourish, whether the tender grape appear, and the pomegranate bud forth."
—Song of Solomon 7:12, King James Bible

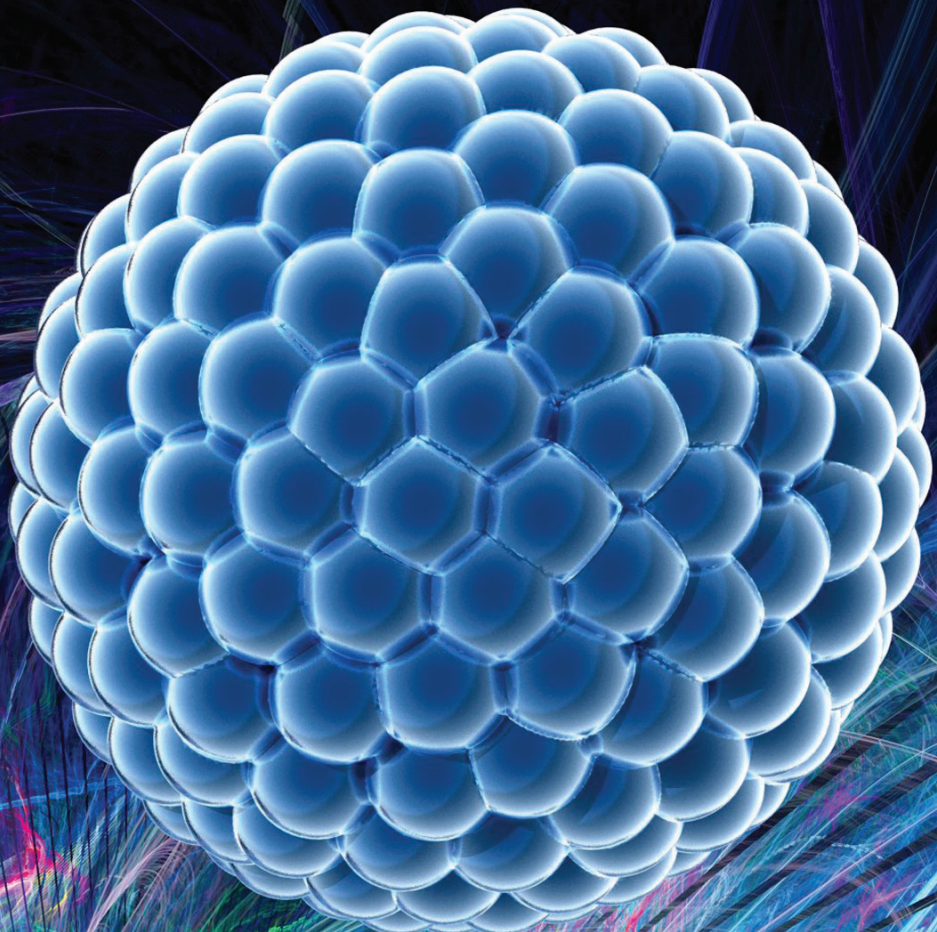
"Be not then discouraged, you who discern in yourselves but small measures of grace; look on your wants and imperfections so as to grow in grace, and not be content with any measure. But look not on the small beginnings in grace as discouragement to you.

"When you see a great oak in a field, you may say this great tree was once but a small acorn. Say to your soul, 'Though I am but weak, yet I shall be strong.' A grain of mustard seed may grow a great tree.

"Content not yourself with small measures of grace. A little of the world will not content you. In the womb a foot contents us, three feet in the cradle, and seven feet in the grave. But between the cradle and the grave, a whole world will not content us; and shall a little grace content us?"

—Christopher Love, *Weak measures of grace in Christians*

EMERGING DISCIPLINES



ADVANCING WITH CAUTION

ON TWO KEY EMERGING DISCIPLINES

RESPONDING TO CHANGING TECHNOLOGY AND ITS IMPLICATIONS FOR PRACTITIONERS IS NO SIMPLE FEAT FOR REGULATORS. HOWEVER, PEO IS MAKING HEADWAY ON TWO KEY EMERGING DISCIPLINE AREAS: NANOTECHNOLOGY AND COMMUNICATIONS INFRASTRUCTURE ENGINEERING.

BY MICHAEL MASTROMATTEO

Recent PEO reports on nanotechnology molecular engineering (NME) and communications infrastructure engineering (CIE) can be considered case studies for how the regulator responds to thorny issues related to emerging disciplines in the engineering profession.

By commissioning reports and recommendations dealing with nanotechnology and CIE, PEO council is moving forward on a key regulatory role on the emerging discipline front.

Neither discipline is new, but their rapid emergence has run ahead of efforts to establish a regulatory-professional practice framework.

Nanotechnology refers to the engineering of functional systems at the molecular or nano scale, while CIE involves the systems-level architecture, design and management of reliable, secure networks for mission-critical and safety-critical applications, including those that support other critical infrastructures.

As far back as 2004, Engineers Canada identified a regulatory role in coping with the challenges of nanotechnology. In a white paper on the subject, the national engineering body said provincial regulators will be charged with granting professional status to practitioners in the nanotechnology area. “In the future it may be important for the P.Eng. applicant to demonstrate appropriate experience in the area of nanotechnology to obtain status in the engineering profession,” the white paper says.

PEO council in September 2011 affirmed recognition of NME as a new discipline requiring regulation. CIE, meanwhile, was recognized as an emerging engineering discipline back in 2010. Since then, two subcommittees of the Emerging Disciplines Task Force (EDTF) have been hard at work making the case for how practitioners in these two areas should be licensed by PEO. Adding urgency to the situation, especially in the case of CIE, is the possibility of non-licensed operators delving into a realm that properly belongs to professional engineering.

The treatment of emerging disciplines within the profession also illustrates how PEO works to update and modernize engineering regulation and standards. Since Ontario’s original engineering act was

proclaimed in 1922, the profession has seen the emergence of many new disciplines and practice areas having an impact on public safety and protection. Many of these emergent disciplines could not have been foreseen by the drafters of the original legislation regulating engineering. In fact, additional disciplines have emerged since the last major engineering act update in 1984, when the definition of professional engineering was revised in a major way.

PHASE ONE AND TWO REPORTS

To date, the CIE and NME subcommittees have submitted phase one and phase two reports to council.

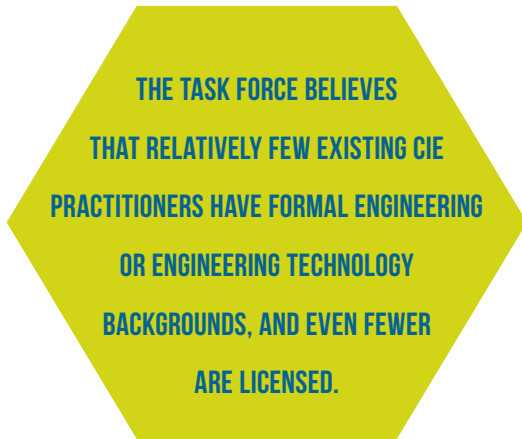
Council directed that recommendations contained in the CIE report be sent for comment to Engineers Canada, and PEO’s Licensing Process Task Force, Academic Requirements Committee (ARC), Experience Requirements Committee (ERC), and Legislation, Professional Standards and Enforcement committees.

The reports are intended to prepare PEO to license graduates with CIE and NME backgrounds and to regulate their practice.

The CIE subcommittee report identifies 10 specific critical infrastructure sectors in Canada: finance, energy, communications, health care, food, water, transport, safety (law enforcement, rescue, emergency response), government and manufacturing.

TIGHTENED-UP REGULATION

The subcommittee found that CIE practice elements demand further development by the engineering community to define the standards and licensing procedures for those entering the field. Tightened-up



regulation of CIE is also seen as a way to inform government policy about cyber security by establishing guidelines and best practices for secure communications networks.

A September 2012 white paper by the Information and Communications Technology Council (ICTC) suggested there is onus on the engineering community to add clarity to the issue. "With growing security concerns affecting all segments of Canadian society, the need for human resources committed to the protection and maintenance of digital communications is on the rise," the ICTC paper says.

As for the CIE report, the PEO subcommittee made 22 recommendations clustered around admissions, rights to practise, specific duties for the registrar, and a communications campaign to bring about more awareness of CIE in general.

The subcommittee recommends PEO open a roster of members working in the CIE field, and consider a limited licence or a voluntary CIE specialist designation for such practitioners.

It further recommends gradual enforcement against unlicensed CIE practitioners.

To develop the practice conditions, the subcommittee is calling for creation of a CIE practice guideline and a program to ensure practitioners not originally licensed in a CIE field can brush up their technical skills and knowledge.

An additional recommendation calls for development of labour market information related to CIE, such as who is currently practising CIE, as a key step in establishing regulation in the field.

The centrality of rapid communications to all 10 critical infrastructure areas has made cyber security an essential component of CIE work. In this area, the PEO subcommittee is indebted to telecommunications authority Tyson Macaulay, who noted that

a disruption of communications infrastructure, either by natural disaster, accident or cyber attack would soon have an impact on all other forms of critical infrastructure, resulting in a "cascade" of failures. Macaulay, vice president of global telecommunications strategy, Intel Security, was a member of PEO's CIE subcommittee.

Macaulay, who still serves on the subcommittee, has contributed to many areas of its work. Besides adding to the analysis of the economic impact of CIE, he assisted in most stakeholder consultations.

Among the immediate concerns is the lack of formal training for CIE specialists. "The task force believes that relatively few existing CIE practitioners have formal engineering or engineering technology backgrounds, and even fewer are licensed," the report notes. "This challenge is exacerbated by the fact that there exists currently a shortage of persons with the requisite CIE skill set in the labour market, and by the fact that there is as yet no agreed-upon standard of knowledge and skill for them."

Subcommittee Chair and PEO Vice President George Comrie, P.Eng., FEC, and the other subcommittee members have been concerned with communications-related critical infrastructure for some time. At a 2010 Ontario Centre for Engineering and Public Policy (OCEPP) conference, Comrie raised the issue of licensing certain IT professionals as one way of improving the resilience of critical communications infrastructure.

As well, in a response to a 2010 federal government report on Canada's emerging digital economy, Comrie, as chair of the CIE subcommittee, said government requires policy and legislation so that competent professionals take responsibility for the design and operation of digital infrastructure to ensure its availability, reliability, security and privacy.

Despite warnings from industry specialists, Comrie added, the field of digital infrastructure is largely



**THE FIELD OF DIGITAL INFRASTRUCTURE
IS LARGELY UNREGULATED FROM THE POINT
OF VIEW OF PUBLIC SAFETY.**

unregulated from the point of view of public safety. There are no constraints on who can design, operate or troubleshoot networks. As such, protection of networks against errors, security breaches and malicious attacks is left to corporate policy.

In a presentation made prior to submitting the CIE report to council, Comrie outlined some of the subcommittee's pressing concerns. He suggested the largely unregulated situation of today should give way to a program involving enhanced governance and audit standards for IT network operators, and a requirement for common carriers and Internet service providers to support criminal investigations and investigations of cyber terrorism threats. The envisioned regulatory regime would also include demand-side legislation calling for some form of licensing of CIE practitioners under professional engineering legislation.

MOVING AHEAD WITH NANOTECHNOLOGY

Not to be overlooked is PEO's response to the challenges of regulating nanotechnology practitioners. Council endorsed nanotechnology as an engineering discipline in its own right in 2008, and instructed the EDTF to develop scopes of practice with a view to licensing or certification implications.

The NME subcommittee of the EDTF submitted its phase two at the same time as the CIE phase two effort. The latest NME report contains 17 recommendations directed toward enforcement, the Professional Standards and Legislation committees, and admission requirements for potential NME specialists.

Similar to the CIE recommendations, the subcommittee calls for a plan to begin enforcement in the nano practice area, along with creation of a professional practice guideline for NME.

To better prepare for other emerging disciplines, the NME subcommittee also recommended council establish a standing committee "to horizon watch" for new engineering disciplines and practices.


"Without this committee," the NME report says, "PEO will not have the market and the industry visibility it requires to fulfill its full mandate to govern all areas of engineering practice."

Peter DeVita, P.Eng., FEC, chair of the EDTF and member of the NME subcommittee, believes efforts to regulate near disruptive technologies could result in a total restructuring of PEO and its legislative structure. "We will see many more emerging disciplines in the years to come, unless we simply stop discovering new science," DeVita says.

RELATED STUDIES ARISE

The importance of CIE and NME is seen not only in PEO's treatment of the issue, but in the rise of related studies in engineering schools. The University of Waterloo has already graduated two cohorts of engineering students from its nanotechnology program, the first of its kind in Canada. It's assumed the 152 students from the first two graduating classes are now gathering work experience and could soon seek licensing in the NME field.

Meanwhile, Carleton University in Ottawa two years ago introduced its master of infrastructure



protection and internal security (MIPIS) program, the first of its kind in the world.

The program is described as bringing together the core principles of critical infrastructure engineering and multi-hazard risk assessment with an awareness of policy development and options to protect national critical infrastructure systems.

Abdel Halim, PhD, P.Eng., director of MIPIS and former head of civil engineering at Carleton, told *Engineering Dimensions* that in the aftermath of so many natural and anthropogenic disasters and cyber security threats, it's time to train engineers in a new form of risk assessment and resilient design.

"We realized engineers need to talk to the policy-makers, and vice versa, to be more efficient and effective in understanding the threats, the risks, and the physical reality of infrastructure in general," Halim says. He says CIE, in particular, might be worth treating as a special area of practice for engineers looking to build more safety, risk management and resiliency into the design and operation of critical infrastructure.

**REGULATORS MUST EVOLVE THEIR
ADMISSION, REGULATORY AND LICENSING
PRACTICES TO BE IN STEP WITH ADVANCING
TECHNOLOGY AND ITS IMPLICATIONS
FOR THE PUBLIC INTEREST.**

THE UPSHOT

Whatever PEO council ultimately decides on the NME and CIE recommendations, regulators will certainly be required to be more proactive than in the past. The suggestion of a standing committee on emerging disciplines, whether it is created or not, speaks to the responsibility of regulators to evolve their admission, regulatory and licensing practices to be in step with advancing technology and its implications for the public interest.

The EDTF and its CIE and NME subgroups will carry on until council creates a standing committee on emerging disciplines. The challenge is to get traction on the regulatory actions PEO requires to respond to these new disciplines. As Comrie notes, "consider that PEO, and other Canadian engineering regulators, are still trying to come to grips with software engineering, which 'emerged' 20 years ago. We have to do better than that on a go-forward basis or the self-regulating engineering profession will become increasingly less relevant as new fields of practice emerge." Σ

[IN COUNCIL]

COUNCIL APPROVES NEW PRACTICE REVIEW GUIDELINE, PILOT VOLUNTARY REVIEW PROGRAM

494TH MEETING, JUNE 9, 2014

By Jennifer Coombes

AT THE JUNE meeting, council approved the *Guideline for Professional Engineers Conducting a Practice Review*, a document designed for use by P.Engs who review the policies and procedures of individual practitioners, companies, organizations, departments or any entity providing professional engineering services. The primary intent of the guideline is to ensure reviews are conducted in a consistent manner, whether requested by a discipline panel or undertaken voluntarily. The document provides “guidance on the professionally acceptable manner for conducting the operation and management of a professional engineering practice,” as well as information for conducting reviews of such practices: the purpose of a review, the recommended steps to be taken in conducting one, the topics to be reviewed and ethical obligations.

Council directed the registrar to publish the guideline, and stood down the Guideline for Practice Review Subcommittee of PEO’s Professional Standards Committee, which prepared the guideline.

In addition, council gave the green light to a pilot Voluntary Practice Review Program, in which practising engineers or engineering companies will voluntarily undertake a practice review. The confidential results of the practice reviews submitted by companies participating in the pilot will help PEO determine whether a formal practice review program should be in place for Ontario entities providing engineering services and what form it should take.

GENERAL REVIEW COMMITMENT FORM

Council endorsed a revised form called *Owner commitment to have general review undertaken by architects and/or professional engineers* created by Engineers, Architects and Building Officials (EABO), of which PEO is a member. The form was revised to clarify that “a general review shall not commence until a permit is issued.” This wording replaces the statement: “Whereas architects and engineers are prohibited by law from undertaking general review of construction if a permit has not been issued,” which council did not support.

The “owner commitment” form is referred to in the PEO guideline *Professional Engineers Providing General Review of Construction as Required by the Ontario Building Code*, which is available under the Forms & Publications tab at www.peo.on.ca.

PROFESSIONAL DESIGN COORDINATION

Council gave its support, in principle, to an amendment to the Ontario Building Code that would require a principal coordinating professional, either an engineer or an architect, to be involved in every project’s permit application. The proposal for the professional design coordination role stems from a review by EABO that concluded “the proper coordination of elements in a professionally designed building is not assured by the provisions of current regulations which apply to owners and designers. This has the potential to lead to situations where buildings will not comply with minimum regulatory standards.”

In addition to amending the building code, EABO recommends that the *Architect’s Act* and the *Professional Engineers Act* also “clearly set out the standards of practice for this function.”

The consensus among EABO’s professional association representatives is that the building code should require owners to retain and identify a principal or coordinating designer as part of the permit application process. The Ontario Association of Architects and PEO will establish professional standards for this role through regulation and/or practice guidelines.

EPTF FINAL REPORT RECOMMENDATIONS

At the June meeting, council reviewed peer reviews by the Complaints, Discipline and Legislation committees and the National Framework Task Force of the Experienced Practitioners Task Force (EPTF) final report. Council requested the reviews following receipt of the report and accompanying recommendations in November 2013.

The EPTF was formed in September 2011 to propose:

- i. More concise definitions of incompetence, unprofessional conduct, and conduct unbecoming a professional;
- ii. A process for sifting complaints and defining the requirements of those suitable for resolution by a simple peer review, without lawyers; and
- iii. A simple peer review process that is fair and economical, and that would be a prerequisite of such complaints before they enter the more formal adversarial area of complaints and discipline.”

Of the nine recommendations put forward in the EPTF final report, three were approved by council:

- That council acknowledge that section 72 of Regulation 941 does not need to be rewritten to provide more concise definitions of unprofessional conduct;
- That council require the registrar to provide annual caseload statistics, such as the number of open and disposed complaints, matters currently before the Discipline Committee, matters resolved by the Discipline Committee, together with the time taken at each step, starting with the date complaint is filed; and
- Stand down the EPTF.

Of the six remaining recommendations, one was not moved and five were defeated by council. Σ

ENERGY POLICIES AND SOCIAL ACCEPTANCE OF SMALL WIND TURBINES

By Kevin Pope, PhD, and Greg F. Naterer, PhD



ONTARIO CENTRE
FOR ENGINEERING
AND PUBLIC POLICY

WIND POWER IS a sustainable source of renewable energy with many benefits, including environmentally benign operation, an ability to generate and provide electricity in remote locations, and reduced fuel dependence. Wind power provides a reliable and competitive energy option, establishes employment opportunities by investing in new technology, and increases the diversity of the energy supply, which therefore contributes to better energy security.

Substantial interest exists for power generation by small wind turbine (SWT) units installed in residential and business zones. SWTs offer several advantages over other sources, such as generating power where it will be consumed, removing or reducing the need for dedicated land, and allowing existing structures to be dual-purposed as support structures (for example, omitting the need for a tower).

Despite extensive technical advances and demonstrated installations, various barriers to social acceptance remain for SWTs. Social acceptance requires three distinct components to be fulfilled: socio-political acceptance, community acceptance and market acceptance (Wüstenhagen et al.). Socio-political acceptance requires broad acceptance with implementation policies for all stakeholders; community acceptance requires local residents and authorities of projects to agree with site decisions; and market acceptance requires participation in the technology implementation by all stakeholders (Wüstenhagen et al.). This article examines social acceptance of SWTs through the alignment of incentives (socio-political acceptance) with community-level barriers to market acceptance. Examining the alignment between socio-political and community acceptance can provide insights into strategies to overcome barriers to market acceptance.

SOCIO-POLITICAL ACCEPTANCE BY FINANCIAL INCENTIVE PROGRAMS

Consider incentive programs to gauge socio-political acceptance of SWTs in Ontario, California and the United Kingdom (UK). Government legislation and incentives that are in line with concerns and barriers that limit increased social acceptance are necessary for additional market acceptance of SWTs. Social and environmental benefits can initiate SWT installations. However, financial incentives and support programs are required to ensure financial viability and market acceptance (Ek).

As a result of the *Green Energy and Green Economy Act*, the microFIT (micro feed-in tariff) Program was created in Ontario for renewable energy projects smaller than 10 kW. Eligible installations are grid connected, use a metering system and do not have a pre-existing Ontario Power Authority

contract (excluding Renewable Energy Standard Offer Program contract holders because they can convert their contracts into microFIT contracts) (Ontario Power Authority).

The microFIT program offers 20-year contracts to homeowners, business owners, farmers, institutional managers and private developers at 11.5 cents/kWh for small wind projects. It is scheduled to be reviewed approximately every two years with 20 per cent of the contract price escalating with the Ontario Consumer Price Index. A 2014 target for microFIT procurement is 65.3 MW, which includes the unused capacity in 2013 of 15.3 MW (Ontario Power Authority).

Previously, California had a strong FIT program for SWTs that offered contracts for market-based, time-of-use tariffs that were calculated by the time of delivery and market price reference (California Energy Commission). However, as a result of Senate Bill 1018, the California Energy Commission has stopped the Emerging Renewables Program (California Energy Commission), leaving the federal *Energy Policy Act* of 2005 as the primary financial incentive for SWTs in California. Initially established for solar power and updated to include small wind power in 2008, the *Energy Policy Act* allows 30 per cent of small wind power costs to be claimed for a system that powers a residential unit.

To increase the installed capacity of renewable energy power generation, the UK initiated a feed-in-tariff scheme for most domestic technologies, including SWTs (Energy Saving Trust). Until March 31, 2014, the tariff rate is 22.23 p/kWh for a 20-year time period. Degression of the feed-in-tariff will commence on April 1, 2014, at a baseline of 5 per cent, although it will be dependent on usage rates.

COMMUNITY-LEVEL BARRIERS TO ACCEPTANCE

Compared to socio-political acceptance, community acceptance does not have a convenient measure and it is highly variable in different regions. This section considers technical and procedural factors that affect community acceptance, including site selection, capacity factors, efficiency, cost effectiveness, wind variability, economics and audio-aesthetics, as well as approval complexity, community engagement and legislative transparency.



TECHNICAL FACTORS OF COMMUNITY-LEVEL BARRIERS

Typically, SWTs have a lower efficiency and capacity factor than large wind turbines that are designed for optimal efficiency and installed in locations with steady, high-velocity wind conditions. SWTs have a lower installation height with reduced wind velocity, more wind turbulence from nearby flow obstructions, and less control and design complexity than large wind turbine installations. These factors contribute to the results of an investigation involving micro-wind turbines (James et al.), which suggests that only rural sites should be considered for micro-wind generation because the annual capacity factor for urban and suburban installations is less than 2 per cent, whereas rural sites are up to 8 per cent. The capacity factor is highly dependent on a turbine's control system. Turbines with active controls continuously alter the pitch of turbine blades as the wind speeds change. The added costs associated with active controls can limit their use in small installations. However, without active controls, the blade pitch remains constant and significantly reduces the turbine's capacity factor. Therefore, techniques to provide cost-effective control strategies are important to improve the technical effectiveness of SWT systems.

Due to wind intermittency, a SWT cannot continuously deliver power at its rated capacity. A common requirement is energy storage or backup generation capacity. Recent research (Ela et al.) has reported wind power can improve power system reliability by using active power control to help generation match the electrical draw on the grid. The high responsiveness of active-controlled wind turbines allows for quick modifications to the power-generation capacity as the load increases or decreases. Another benefit of SWTs is the ability to flatten the distribution variability by distributing power production over a wide area.

The cost effectiveness of SWTs is highly variable, with rated capacity and wind conditions. For all turbines less than 100 kW, the Canadian Wind Energy Association (CanWEA) reports that the most cost-effective turbines are less than 1 kW and the least cost-effective are 1 to 10 kW turbines (CanWEA). Greater than 1 kW, the cost effectiveness decreases by approximately 310 per cent, and then improves as size increases.

Several studies identified audio-aesthetic impact to be the most important factor of community acceptance, with more influence than risks to wildlife and habitat, noise or shadow flicker (Wüstenhagen et al.). SWTs in residential and business sectors require additional attention to audio-aesthetic barriers compared to larger installations that are placed in remote locations. Smaller and lower-capacity turbines need more installations than a large turbine to produce the same power output, which can increase the audio-aesthetic impact if not carefully regulated. Also, the local community is affected by the audio-aesthetic impact of SWT

projects without receiving financial benefits and the relative increase of audio impact can increase at night with the decrease in ambient noise.

PROCEDURAL FACTORS OF COMMUNITY-LEVEL BARRIERS

Perceived procedural fairness for a proponent installing a turbine and the local community is required to increase social acceptance of SWTs, which includes planning permission and approval complexity, community engagement and transparency, among others (Jobert et al.). A community is more likely to accept a result if the process that determined the outcome is perceived to be fair. A complexity and capacity for community input on the approval process within SWT legislation is an important procedural factor. A relatively simple process with reasonable timelines while maintaining perceived fairness, trust and transparency can increase community acceptance and the quantity of SWT installations. Community members should be able to trust industrial and government stakeholders, including local authorities, utilities, turbine manufacturers and contractors to ensure adequate acceptance. Open communication of SWT projects, incentives and legislation can improve perceived procedural fairness. Conversely, ineffective communication, inaccurate perceptions and lack of relevant SWT knowledge can deteriorate community acceptance by creating misconceptions and mistrust among the community (Jobert et al.).

MARKET ACCEPTANCE AND GROWTH TRENDS

The market trends of SWTs provide insight into the alignment of socio-political legislature and incentives with community-level barriers in Ontario, California and the UK. Globally, SWT market size increased from \$156 million in 2008, to \$609 million in 2012, and is predicted to rise to \$3 billion by 2020 (Verma). Regional statistics of SWTs are typically unavailable and most manufacturers cannot report data by region (American Wind Energy Association). Therefore, as presented in Table 1, the installed capacity of SWTs for Ontario and California is examined with country-specific data.

All three countries are exhibiting promising growth in SWTs. Recent changes in legislation for SWTs in the UK have greatly accelerated their installation rates. In 2012, the UK had the largest

TABLE 1. SWT TRENDS IN INSTALLED CAPACITY

	Number of new units	New capacity [MW]	Total installed capacity [MW]	Total electricity consumption [GWh] ⁴
Canada ¹				
2009	3140	3.0		
2008	2294	2.3	12.6	536,054
United States				
2009 ²	9800	20.3		
2008 ²	10,500	17.3	100 ¹	3,872,598
2012 ⁴			216	
United Kingdom				
2009 ³	3280	8.62		
2008 ³	3453	7.26	≈30 ¹	345,798
2012 ⁴		50	118	

¹ Canadian Wind Energy Association

² American Wind Energy Association

³ Central Intelligence Agency

⁴ Verma

*Data from UK and US include all wind power with a capacity up to 100 kW and Canadian data includes systems with a capacity up to 300 kW.

increase (50 MW) worldwide in SWT installed capacity (Verma). Until the recent changes in California's incentive programs, Ontario, California and the UK had similar incentive programs with unique requirements for implementation of SWTs. The *Green Energy and Green Economy Act* provides a clear process for implementing SWTs in Ontario; however, it neglects community barriers by excluding a method for community input on the approval process, which can increase community opposition. Before cancellation, California's financial incentives allowed communities to establish an ordinance within the guidelines of the California Government Code, which helped to create high levels of community acceptance. In the UK, a method for community input on the approval process is excluded; however, financial incentives are provided for an on-grid and off-grid SWT installation that includes significant benefits for a wide variety of SWT applications and increases the quantity of effective locations.

The cost effectiveness of SWTs is an important factor for social acceptance (Ek). During this period of rapid growth, it's important that cost-effective systems with low audio-aesthetic impact are installed to maintain high levels of social acceptance. Yet, none of the three jurisdictions investigated in this paper place an emphasis on selecting suitable sites and ensuring high-quality engineering practices with suitable power coefficients, capacity factors and audio-aesthetic impacts for the installation locations. Implementing legislation to ensure cost effectiveness while maintaining a straightforward approval process can help to increase the social acceptance of SWTs.

CONCLUSIONS

The incentive programs and supporting legislation show high levels of socio-political acceptance for SWTs in several jurisdictions; however, community-level barriers are challenges to more widespread implementation. The alignment between socio-political

incentives and community-level barriers is an important element to maximize the potential and ensure appropriate market acceptance. A suitable alignment between the cost of installed capacity, audio-aesthetic impact and a relatively simple approval process within the SWT legislation can facilitate further growth in installed capacity. Σ

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CALLING ALL CANDIDATES: 2014 PROVINCIAL ELECTION DEBATES PUT ENGINEERING ON THE AGENDA

By Howard Brown and Kaitlynn Dodge



MPP candidates attended a June 4 all-candidates debate organized by PEO's Mississauga Chapter. Front row (left to right) Michelle Bilek, Mississauga-Erindale (NDP), Bob Delaney, MPP–Mississauga-Streetsville (Liberal), Amrit Mangat, MPP–Mississauga-Brampton South (Liberal), Nina Tangri, Mississauga-Streetsville (PC), Pauline Thornham, Bramalea-Gore-Malton (Green), and Vivek Gupta, Mississauga-Erindale (Green). Back row, Colin Moore, P.Eng., FEC, former PEO councillor; Phil Maka, P.Eng., FEC, former PEO councillor and Engineers Canada director; Art Kirmichansky, P.Eng., PEO Mississauga Chapter chair; Khaled El-Rahi, P.Eng., Mississauga Chapter GLP chair; Paul Acchione, P.Eng., OSPE acting CEO; Lisa MacCumber; Gerard McDonald, P.Eng., PEO registrar; Thomas Chong, P.Eng., FEC, PEO president-elect; and Jeannette Chau, P.Eng., PEO manager of student and government liaison programs.

ELECTION CAMPAIGNS are fast, busy, hard to predict and over in the blink of an eye.

In Ontario, the writ was drawn up on May 7, launching the start of a 36-day campaign to be concluded on June 12. The campaign meant that engineers across the province had an opportunity to put key regulatory issues on the agenda.

As an organization committed to public safety, it was important that PEO educate candidates on the need to repeal section 12(3)(a) of the *Professional Engineers Act*, also known as the industrial exception, and its recommendations for the way inspections and other engineering activities should be done, especially in light of the Elliot Lake Inquiry.

Thanks to PEO's dedicated volunteers, three all-candidates debates took place for the 2014 provincial election in the cities of Ottawa, Kitchener and Mississauga.

The first, on May 27, was hosted by Ottawa Chapter in partnership with the Ontario Society of Professional

Engineers (OSPE), and the Kanata Career Group at the Vitesse Re-Skilling offices in Kanata.

The second, held May 30, was hosted in Kitchener by Grand River Chapter in partnership with the Ontario Association of Certified Engineering Technicians and Technologists (OACETT) at the Central Ontario Chinese Cultural Centre.

The third was hosted by Mississauga Chapter on June 4 at the Noel Ryan Auditorium in the Mississauga Central Library.

All three events were well attended, had multiple parties participate, and gave engineers in the community an



A May 30 all-candidates debate organized by PEO's Grand River Chapter attracted eight MPP candidates. Left to right, Shervin Reyhani, C.E.T. (OACETT), Wayne Wettlaufer, Kitchener Centre (PC); Marion Thompson Howell (moderator), Tracey Weiler, Waterloo (PC); Daiene Vernile, MPP-Kitchener Centre (Liberal); Jamie Burton, Waterloo (Liberal); Wayne Wright, Kitchener-Conestoga (Liberal), Catharine Fife, MPP-Waterloo (NDP), Stacey Denckert, Waterloo (Green), Gabe Tse, P.Eng., PEO Grand River Chapter GLP chair; and Margaret Johnston, Kitchener Centre (NDP).

opportunity to hear first-hand about the platforms of those up for election.

In Ottawa, issues such as the regulation of engineering, infrastructure investment and job creation attracted the participation of three candidates: Jack MacLaren, P.Eng., the incumbent Progressive Conservative candidate for Carleton-Mississippi Mills, John Hansen, P.Eng., a New Democratic Party (NDP) candidate, and Gordon Kubanek, P.Eng., a Green Party candidate.

MacLaren shared his views on how to create jobs and where the party stands on key campaign issues.

When asked if his party supports the repeal of the industrial exception, MacLaren said, "Our party does not support the repeal because we have been told that it will place an undue burden on business, especially the manufacturers in the province." He went on to say that the economy is their number one priority.

Hansen shared his experience in the IT sector and how he felt his party could help create jobs and benefit the economy, if elected. When asked about the repeal he noted, "If other provinces have done it then I don't see a reason why Ontario should be any different."

Kubanek referenced lessons from Scandinavian countries and indicated he was happy the group was looking at issues broadly and not just as they relate to Ontario. He was also supportive of the repeal.

The Kitchener debate attracted eight candidates from three ridings who met with engineers and community members and thoroughly discussed issues of importance to over 80 members of the public, of whom over half were engineers.

When asked what the candidates said regarding their position on the repeal, Gabe Tse, P.Eng., GLP chair, Grand River Chapter, reported that there was an interesting discussion on the repeal and most candidates thought it was an issue that needed more consultation.

Tse said: "Catherine Fife (incumbent NDP MPP) was passionate about promoting worker safety in Ontario industries and was supportive of the repeal of the industrial exception."

Fife and her colleague, NDP MPP Taras Natyshak, both wrote the government in June 2013 in support of the repeal of the industrial exception.

Mississauga Chapter's event also gave engineers an opportunity to meet their provincial candidates and learn their stances on issues important to the profession's regulation in Ontario. The event was well attended and positioned PEO as an organization that contributes to the democratic process in Ontario. Participants included two incumbent MPPs: Bob Delaney, who, prior to the election call, was chief government whip and parliamentary assistant to the minister of energy; and Amrit Mangat, who was also a parliamentary assistant prior to the election.

All chapters engage with local MPPs on a regular basis, which makes it easier to pull together these large events within a short period of time.

"Elections are short, but their outcomes are what determine the course of history in Ontario," says Jeannette Chau, P.Eng., PEO's manager of student and government liaison programs. "Engineers want to be involved, have a say and, where possible, contribute to giving residents an opportunity to make an informed choice on election day."

Achieving these outcomes starts with volunteers who bring people together and do the hard work to create a forum for discussion during what is often an adversarial time in the political process. Σ

Howard Brown is president of Brown & Cohen Communications & Public Affairs Inc. and PEO's government relations consultant. Kaitlynn Dodge is account director at Brown & Cohen and PEO's government relations coordinator.

EXCEPTIONAL ENGINEERS HONOURED WITH AWARDS

By Nicole Axworthy

THE AMERICAN Public Works Association has chosen the Keswick effluent outfall project as one of its Public Works Projects of the Year for 2014. The prime consultant of the project was Hatch Mott MacDonald (HMM), which recommended combining open-cut trenching, microtunneling and marine dredging to increase the effluent capacity of the water pollution control plant. The project included the first curved drive completed in Canada, the first underwater reception of a microtunnel drive completed in Canada, and the first compound curve tunnel drive completed in North America.

HMM's King Road grade separation project in Burlington was honoured with a Gold Award from the Massachusetts chapter of the American Council of Engineering Companies. The project involved using an open-cut, bridge-jacking technique to slide a new, separately built concrete underpass under an existing railway crossing. Although the project was located in Ontario, it drew on the talents of geotechnical, structural, transportation and construction management staff from various HMM locations, including Westwood, Massachusetts, and Mississauga, Ontario.

Andreas Mandelis, PhD, LEL, professor, mechanical engineering, University of Toronto (U of T), was recently presented a 2014 Killam Prize, one of Canada's most prestigious scholarly awards. Mandelis' work focuses on combining applied physics and engineering for entirely new applications of lasers in materials science and biomedical engineering. His current research involves creating new tools that use light for the non-invasive diagnosis and management of such diseases as cancer and diabetes. The Killam Prize is presented by the Canada Council for the Arts and recognizes outstanding career achievement by scholars and scientists actively engaged in research. Only five \$100,000 prizes are awarded annually.

Two PEO members and a member of its student membership program have been presented 2014 Engineers Canada Awards. Michael Sefton, PhD, P.Eng., professor, Institute of Biomaterials and Biomedical Engineering, U of T, received the Gold Medal Award, which is presented to a professional engineer for achievement and distinction in engineering. Sefton received the award for his groundbreaking work in combining living cells with synthetic polymers to create artificial organs and tissues, a field known as tissue engineering. His current research into creating modular tissue components seeks to create cardiac muscle to treat heart failure and pancreatic tissue for diabetes, among other possibilities.

Michael Branch, P.Eng., CEO, Inovex Inc., received the Young Engineer Achievement Award, presented to a professional engineer under 35 for outstanding contributions in engineering. Branch founded his company, which develops web and mobile software applications for customers ranging from medical clinics to municipalities to oil and gas companies, more than 10 years ago. Under Branch's leadership, Inovex has prospered. Hanna Janossy, an industrial engineering student at U of T, received the Gold Medal Student



Faizul Mohee, P.Eng. (left), receives the Ontario Society of Professional Engineers (OSPE) President's Award in the young professional category from OSPE Past Chair and Acting CEO Paul Acchione, P.Eng. (see p. 46)



Michael Sefton, PhD, P.Eng. (right), receives the Gold Medal Award from Engineers Canada Past President W. James Beckett, P.Eng., FEC.



Michael Branch, P.Eng., received the Engineers Canada Young Engineer Achievement Award.

[AWARDS]



Winning projects of the Ontario Consulting Engineering Awards include: REMISZ Consulting Engineers Ltd.'s work on Ottawa's Rockcliffe Parkway (winner of the Willis Chipman Award), Integral Group's work on the Elementary Teachers' Federation of Ontario headquarters, and Cowater International Inc.'s work on rural water systems in Mozambique.



Award, presented to an undergraduate engineering student for outstanding leadership, contributions to society and volunteerism. Janossy is passionate about creating change by empowering students to become leaders in their communities. She has led 13 student organizations at U of T, including Women in Science and Engineering (WISE), where she hired 20 new executives, launched three new programs and an annual flagship conference, and raised more than \$20,000. Beyond U of T, Janossy has volunteered with several non-profit organizations and works extensively with young people with disabilities.

Faizul Mohee, P.Eng., an engineering graduate student at the University of Waterloo, is the recipient of the Ontario Society of Professional Engineers (OSPE) President's Award in the young professional category. Introduced for the first time this year, the award recognizes exceptional Ontario engineers who advocated for the engineering community through various roles during academic studies and following graduation. Mohee also received a graduate scholarship, sponsored by The Personal Insurance Company, valued at \$5,000.

Frances Lasowski, P.Eng., an engineering student at McMaster University, received OSPE's graduate scholarship. Undergraduate scholarships of \$5,000 were awarded to Alexis Wagner, University of Guelph, and Hanna Janossy, U of T. Sponsored by The Personal, the scholarships are awarded to OSPE student members with strong academic achievement and a demonstrated commitment to volunteer involvement.

Consulting Engineers of Ontario recently announced the winners of the 2014 Ontario Consulting Engineering Awards. The Willis Chipman Award, the top honour, went to REMISZ Consulting Engineers Ltd., for a project the firm completed at Ottawa's Rockcliffe Parkway. Instead of building a joint-use pathway with traditional retaining walls along a steep escarpment, a system of micro piles, elevated precast concrete slabs, and a new type of guardrail system was implemented for the first time in Ontario. The design re-used part of the old heritage wall system and paving stone to create a



More winning projects of the Ontario Consulting Engineering Awards include, clockwise from top left: Associated Engineering Ltd.'s work on the Scott Street Sewage Pumping Station, MMM Group Limited's work on the Quito International Airport, and Hatch Mott MacDonald's work on the Niagara Tunnel and Burlington railway underpass.

bluff area to make it more attractive for tourists, residents and cyclists. Awards of Excellence went to: Integral Group for designing a new headquarters for the Elementary Teachers' Federation of Ontario in Toronto; Cowater International Inc. for planning, scheduling, financial management, design and construction supervision of 600 rural water systems in Mozambique, Africa; Associated Engineering Ltd. for upgrading the century-old Scott Street Sewage Pumping Station in Toronto; and MMM Group Limited for the new Quito International Airport in Ecuador. Awards of Merit went to Hatch Mott MacDonald for the Niagara Tunnel

(industry, energy and resources category), the largest hydroelectric project in Ontario in the last 50 years, and for developing an innovative open-cut, bridge-jacking technique for a grade separation in Burlington (transportation category).

The Canadian Engineering Memorial Foundation (CEMF) has announced its 2014 scholarship recipients. Frances Lasowski, a PhD candidate at McMaster University, is the recipient of CEMF's top prize, the 2014 Claudette MacKay-Lassonde Scholarship worth \$15,000. Through her research in chemical engineering, Lasowski is exploring the topic of drug delivery from novel endogenous lipids, fibrin gels and

[AWARDS]



model contact lenses for the treatment of retinoblastoma and myopia. Allison Scott, a chemical engineering student at McMaster University, has been named the 2014 Vale Master's in Engineering Scholarship winner. This \$10,000 scholarship is awarded annually to the most promising woman interested in the mining or metallurgical field, who is a full-time graduate engineering student at the master's level in Canada. Clarisse Schneider, a second-year software engineering student at the University of Waterloo, has been selected as the inaugural 2014 Allstream Information and Communication Technology Engineering Scholarship winner. The \$5,000 scholarship is awarded to the most promising woman interested in the information and technology engineering field at the university level. Three other Ontario students have been chosen for 2014 Vale Undergraduate Engineering Scholarships: Georgina Rainsford, a third-year mechanical engineering student at Queen's University, Romy Done, a first-year mineral engineering student at U of T, and Jennifer Taylor, a third-year mining engineering student at Queen's. The \$10,000 scholarships are awarded to the most promising women in an accredited undergraduate engineering program in Canada who are interested in the mining and metallurgical fields. Sara Maltese, a first-year engineering science student at U of T, is the Ontario region winner of the \$5,000 2014 CEMF Undergraduate Ambassador Scholarship, representing her region as the strongest ambassador for the profession based on leadership, volunteerism and community involvement. Σ



Canadian Engineering Memorial Foundation scholarship recipients include, clockwise from top left: Clarisse Schneider (with CEMF President Deborah Wolfe, P.Eng.), Frances Lasowski, Allison Scott and Georgina Rainsford.



Canadian Engineering Memorial Foundation scholarship recipients include, clockwise from top left: Romy Done, Jennifer Taylor and Sara Maltese.



[DATEPAD]

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[LETTERS]



Y2K HOAX MYTH

I write with an emphatic hope to help stamp out the perniciously cynical and completely false myth that the expenses and efforts invested to identify and repair Y2K-related software faults were some kind of gigantic hoax, perpetrated by greedy, thieving computer programmers.

And here is the myth again, repeated by engineer Ken Dias in his letter (“In need of study,” p. 54) in the January/February 2014 issue of *Engineering Dimensions*: “Remember Y2K and the scare tactics used then? My company, as did many others, spent millions on this, and we all knew what a hoax it was!”

Would Mr. Dias also complain that his 2013 fire insurance policy was a hoax because his house didn’t burn down?

As a “retired” software engineer with 30 years of independent, self-employed contract

experience working for a variety of clients in a range of economic sectors, I can assure engineer Dias that the managers of the very large financial corporation I worked for around the time of the Y2K race were not stupid enough to spend millions of dollars to fix a non-existent problem.

And I can assure engineer Dias that there was real fear and real stress for all those working on Y2K, and real career damage was suffered by some due to their Y2K work.

The irony of the Y2K software experience is that programmers did such a good job of finding and fixing the Y2K bugs that on Y2K day, the world kept functioning with almost no (only a few) glitches, and instantly adopted the Y2K hoax myth.

Steve Petrie, P.Eng., Oakville, ON

BRIDGING THE GAP TO GOVERNMENT

I was intrigued by your recent Government Liaison Program (GLP) journal articles related to engineers being involved in politics (“Engineers as politicians: It’s in the public interest,” January/February 2014, p. 38, and “Calling all candidates! How engineers can play a role in Ontario’s upcoming elections,” March/April 2014, p. 23). Although I have never been involved in the program, I applaud PEO’s focus on bridging the gap for engineers between our current mandate to serve the public through applied science to the broader mandate to serve the public through expertise and professionalism.

As a P.Eng. who is currently running for Toronto city council for Toronto-Danforth, I have found this understanding critical to my own decision to enter public life. Many of my engineering peers share my passion and social conscience to help build better communities and places to live. Yet we run up against many obstacles, such as a lack of support from workplaces, broad networks in local public engagement and financial resources.

I have been fortunate to have a workplace that shares my values of civic engagement.

At Morrison Hershfield, I have found a culture of integrity, accountability and mutual respect that extends beyond our office and our projects to the community at large. Through this organization’s support, including mentorship and skills training, I have been able to pursue excellence not only in my field of expertise but also beyond. Now I have the opportunity to enter public life with the support of my colleagues at Morrison Hershfield, in addition to my wife and children and local community.

If more engineers are to be active politically and seek public office, then in addition to PEO’s focus on this important issue, we need to engage forward-thinking engineering firms. We need to invest in collective and individual capabilities as they bring benefits not only to the bottom line, but also to our society through better governance. We are training and growing not only the future leaders of our organizations, but also governments.

It is a breath of fresh air for PEO to bring attention to this most important topic. I look forward to meeting engineering peers and colleagues in the lead up to the October 27, 2014 municipal election. I encourage other engineers to bring their perspectives to their local communities as I hope to in Toronto city council.

Dave Andre, P.Eng., Scarborough, ON

[LETTERS]

WE'RE NOT AT FAULT

Jatin Nathwani's article, "Poisoned politics of power plants" (*Engineering Dimensions*, March/April 2014, p. 37), was out of place in our publication. Nathwani not only scolds all voting citizens but suggests that by "pointing fingers" we are really the ones at fault.

The gas plants were not cancelled as he repeatedly points out; they were relocated at the point of substantial completion. The pressure on politicians came from the NIMBY (not in my back yard) self-interest groups. Power is in greatest need in the GTA and generating it hundreds of kilometres away, overburdening power lines and incurring transmission losses, does not help the environment.

I trust most Ontarians believe in democratic processes. Those who vote are guided by promises, programs and the integrity of the candidates and the government they form. At least Nathwani could have confirmed what most of us think—that politicians have largely abandoned their democratic mandate across Canada and at all levels of government. We are well aware of the many examples of entrenched entitlement and party politics of many elected politicians. Partisan politics trumped democratic principles, value for the greater good, and good judgment in the power plant fiasco.

I would submit that it is not rage and protest that undermines; it is party politics, weak government and self-serving politicians who make decisions they are not competent to make and who do not seek out competent advice or listen to it. Sole source crony consultants are part of the scam. In the power plant scandal, facts were hidden, documents destroyed and the criminal acts that may have been committed are being investigated.

Protests are a democratic right and, yes, they may undermine and harm our infrastructure or society. However, these protests can only bear fruit if the government permits this result, without competently weighing the consequences. In the Ontario case, the government listens to protests selectively: witness the industrial wind turbines of the *Green Energy Act*—it removed democratic powers of municipalities and no end in protests and lawsuits have had any effect. Perhaps Nathwani could have suggested a way to fix our democratic system rather than scolding us for pointing fingers and protesting too much.
Elio Comello, P.Eng., Camlachie, ON

COMPETENCE OVER FAIRNESS

With reference to "Is it time to do away with engineering's Canadian experience requirement?" (*Engineering Dimensions*, March/April 2014, page 17:

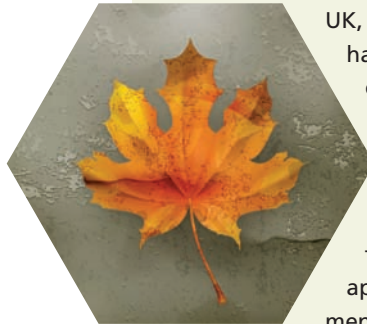
I was troubled by the article, an apologetic for dispensing with a 12-month, in-country experience requirement. The argument seems short on supporting data and relies partly on an appeal to emotion. The heartbreaking nature of stories of exclusion is sad but irrelevant when it comes to an assessment of competence to practise. It is fine to point out that there is no "clear, measurable outcome of what communications skills candidates are supposed to obtain" during the 12-month period. Surely that fact supports the development of a Canadian communication experience standard, and not doing away with the requirement altogether?

My primary role as an engineer involves failure investigation and the role of code or standard compliance in that failure. I sometimes need to refer to UK, US or even Australian standards, and have conducted investigations with US engineers. My experience with foreign standards (and even some from our southern neighbour) is that there are a multitude of different approaches involved, along with unstated assumptions that one only learns about through application of the standard under the mentorship of an engineer experienced in the entire framework that surrounds the standard. It has taught me that I could never step into another country and expect them to license me to practise without first going through that mentorship process. That includes the US, the nation that we are closest to in terms of harmony of standardization.

Perhaps the solution is for the regulator to create a Canadian experience practice exam that tests exactly those sorts of Canadian competencies. That would require the development of a standard that quantified what skills the profession feels are needed prior to licensure. A newcomer who believes they are competent to practise without that period of mentorship could then demonstrate that competence through meeting an objective standard. An ability to communicate in English or French at a satisfactory level could be a part of that.

I get uneasy whenever I hear fairness being placed to trump competence. The Canadian public's primary concern, in light of things such as the Elliot Lake mall collapse, is certainly first and foremost on competence.

M.B. Oliver, CD, P.Eng., Edmonton, AB



SOLUTION IN SEARCH OF A PROBLEM

Engineering Dimensions' recent coverage on professional development treks through a well-ploughed field ("Continuing professional development on PEO horizon," May/June 2014, p. 24). No evidence is offered that the government or the public is demanding continuing professional development, nor is there a single example of a government imposing a mandatory continuing competency program on a profession.

Professional development and quality assurance are window dressing brought in by regulators who cannot take the liability for continuing competence but wish to give the public the impression they are doing their jobs. Until proof is offered that compulsory professional development or quality control has any impact on continuing competency, the CPDCQATF's tasks are a solution in search of a problem.

Competency can be defined as learning a task and doing it often enough that a reasonable assessment would conclude you knew what you were doing. When someone interviews either a contractor, employee or an engineer for a major contract, the first question asked is about experience, the second is about references that vouch for competency and character. I have never been asked, nor have I ever asked, in countless interviews, which books have been read, which conferences have been attended, or for an account of 240 hours of extra curricular activities over the last three years.

Incompetency is a much more complex determination. Mistakes, misjudgments and lapses of character are not, as of themselves, proof of incompetency. No one is infallible, and "measure twice and cut once," or "the person who never made a mistake never made anything," are truisms reflecting reality.

PEO has more urgent priorities, i.e.:

1. Establish the disciplines of engineering it regulates and provide standards of practice for each of these disciplines. Had adequate standards for the review of an existing building, or for the demolition of a structure, been in place in time, it is arguable that the fatalities at the Algo Centre Mall and the Uptown cinema could have been avoided.
2. Issue all member licences showing designated disciplines.
3. Provide Certificates of Authorization (Cs of A) at reasonable cost to permit actual practise only by those who take direct responsibility for their engineering work by professional seals on their work, or who qualify as consulting engineers, and only them to practise in their stipulated disciplines.
4. Require C of A holders to requalify every five years by providing evidence of up-to-date activity in their fields, and references from clients, employers or colleagues in their fields of practice, testifying to their competency and character.
5. Provide a distinct discipline process for C of A holders for allegations of incompetency and have judgment by peers.

There are factual precedents for governments abolishing self regulation of professions. The actions suggested above, implemented expeditiously, may preclude government action if the Algo Mall commission report deservedly criticizes PEO for its inaction in a critical area of a regulator's responsibilities. PEO cannot claim to regulate a profession like engineering without standards of practice for all disciplines.

Patrick Quinn, P.Eng., Toronto, ON

Letters to the editor are welcomed, but must be kept to no more than 500 words, and are subject to editing for length, clarity and style. Publication is at the editor's discretion; unsigned letters will not be published. The ideas expressed do not necessarily reflect the opinions and policies of the association, nor does the association assume responsibility for the opinions expressed. Emailed letters should be sent with "Letter to the editor" in the subject line. All letters pertaining to a current PEO issue are also forwarded to the appropriate committee for information. Address letters to jcoombes@peo.on.ca.

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ASSESSING CANADIAN EXPERIENCE

RE: "What's in store for the Canadian experience requirement?" *Engineering Dimensions*, January/February 2014, page 32.



John Boyd thinks that every engineer needs a year of Canadian experience to gain familiarity with, "above all else," our climate. Are you kidding me?! Would he like to tell an engineer from Alaska or Siberia that they need to experience a *real* winter before they can practise here as an engineer? Conversely, does he think that a year spent working

in Victoria would equip someone with all the climate-related knowledge needed to design HVAC in Iqaluit? There's no doubt there are many jobs for which consideration of the environment is critical—in which case I'm sure the employer will make that know-how a condition of employment no matter whether it was gained in Canada or elsewhere.

In my opinion, when you really question the reasons given in support of the Canadian experi-

ence requirement, they will all fall into one of three categories:

1. Industry or job specific requirements: climate, industry codes or regulations, etc. The mere fact that you spend a year in Canada working in Job A will not necessarily give you any of the specific requirements or knowledge for Job B;
2. General requirements that should be expected of all engineers: e.g. ethics, law, etc. tested in the professional practice exam (or additional exam if more requirements are identified); or
3. Subjective platitudes that can no more be assessed for Canadian engineers than for newcomers: e.g. appreciating our diversity and multiculturalism.

PEO needs to be clear-sighted enough to realize that only one of these categories should concern them, and then assess it consistently and fairly in all applicants, no matter their origin.

Anthony Jarrett, Ottawa, ON

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