



Professional Engineers  
Ontario

# ENGINEERING DIMENSIONS

SEPTEMBER/OCTOBER 2016

A low-angle photograph of a diverse group of people, including men and women of various ethnicities, with their hands stacked in a circle. They are all smiling and looking upwards against a clear blue sky. The image conveys a strong sense of unity, teamwork, and volunteerism.

## THE POWER OF **VOLUNTEERISM**

PM 40063309

# HIRE WATERLOO

for all your talent needs

“ The talent pool at Waterloo is unrivalled and includes many **intelligent, super-motivated** individuals who have an **entrepreneurial spirit.** ”

AL WALCROFT, Contracting Sales Director, HTS Engineering

- » **BENEFIT** from the fresh ideas and ready-to-learn attitude that our students have
- » **PARTICIPATE** in Waterloo's world-renowned co-op program, with more than 19,000 students
- » **HIRE** for full-time, part-time, and summer work, all year round

Advertising a job is free and easy. Contact us today.  
[hire.talent@uwaterloo.ca](mailto:hire.talent@uwaterloo.ca) | 877-928-4473



UNIVERSITY OF  
**WATERLOO**

# REGULATING EMERGING ENGINEERING DISCIPLINES



George Comrie  
MEng, P.Eng., CMC, FEC  
President

**A DISTINGUISHING** feature of engineering is its rapid growth in new scopes of professional practice—what we often refer to as emerging disciplines. Perhaps because of the exponential pace of development of new technology, engineering seems to evolve faster than other senior professions. One of PEO's important tasks as a regulator is to ensure that new engineering disciplines and areas of specialization are incorporated into our regulatory regime in a timely manner so that the public is protected by those who are practising on “the leading edge.”

I wish I could say that our profession's record of proactivity in embracing emerging engineering disciplines is good. Traditional scopes of practice within the fields of civil, electrical and mechanical engineering, for example, are generally well understood and recognized as the exclusive purview of licensed professional engineers. More often than not, however, we have missed the boat on their newer derivatives, such as computer, environmental and software engineering.

Software engineering is a good case in point: I remember in 2001 trying to convince the directors of the Canadian Council of Professional Engineers (now Engineers Canada) that software engineering was, indeed, the practice of professional engineering. Many of them were unconvinced on the grounds that the work product of software engineering was, in their minds, intangible (i.e. not manifested in concrete, metal or other traditional engineering materials, and instantly replicable). I can imagine their similar reaction to the field of nanomolecular engineering, where the artifacts are invisible to the naked eye. In any event, the net result of our tardiness in embracing software engineering as a regulated engineering discipline allowed non-engineers to dominate the field, and to this day it remains essentially unregulated. I believe it can be argued

that the public has suffered from the consequences of lack of discipline and accountability in the development and management of software systems. But to this day, we Canadian engineering regulators have yet to enforce against anyone practising safety-critical software engineering without a licence, although such unlicensed practice continues. (A convincing argument for software engineering as the practice of professional engineering may be found in Steve McConnell's book *After the Gold Rush: Creating a True Profession of Software Engineering*, whose 1999 publication date seems ironic in retrospect.)

### A PROACTIVE APPROACH

In an effort to avoid a repeat of our experience with software engineering, PEO's Emerging Disciplines Task Force has tried to take a more proactive approach with our two latest emerging engineering disciplines: communications infrastructure engineering (CIE) and nanomolecular engineering (NME). Unlike software engineering (which, one could argue, emerged more than 20 years ago), these new fields of engineering are truly still emerging—a fact that manifests itself in a few important ways:

- There are few, if any, established university engineering programs that prepare individuals to practise in them;
- Most of those currently practising in them have non-engineering backgrounds, and even those who are engineering graduates acquired their knowledge of the field on the job, not through formal education; and
- They lack a “critical mass” of licensed engineering practitioners to establish them from the outset as the practice of professional engineering.

These characteristics of emerging disciplines pose several challenges that do not apply to more established disciplines, and that require the regulator to adopt special strategies in order to integrate them successfully.

### STEPS FOR SUCCESSFUL INTEGRATION

First of all, it is critical to identify at least an initial set of scopes of practice for the emerging discipline that fit clearly within the definition of the practice of

## PRESIDENT'S MESSAGE

professional engineering in the *Professional Engineers Act* and for which a licence to practise is therefore required in the public interest. This step (defining restricted scopes of practice) should precede and should drive the definition of the core body of knowledge for the discipline, not the other way around. The temptation to consider emerging disciplines first from an academic point of view, especially if academic programs in the discipline have already been established or are in the process of being established, should be resisted.

Then comes the definition of the core body of knowledge for the agreed upon scopes of practice, which will be used for the following purposes:

- To evaluate the knowledge and experience of limited licence applicants to ensure they possess the depth of knowledge and skill required for their proposed limited scopes of practice;
- To establish syllabi against which the academic credentials of P.Eng. licence applicants can be evaluated;
- To create any new technical examinations that may be required for the emerging discipline before they are requested by applicants; and
- To assist academic institutions to design curriculum for programs and options that will prepare graduates to work in the emerging discipline and that will meet accreditation criteria.

Next, it is necessary to identify and recruit a core body of already-licensed practitioners who are practising in the emerging discipline and who are able and willing to serve as supervisors and referees for applicants for licensure, and as reviewers of applicants' academic credentials and experience on behalf of our Academic Requirements (ARC) and Experience Requirements (ERC) committees. These volunteers must be in place before applications for licensure in the emerging discipline can be processed fairly and expeditiously.

On the subject of licensure, it may be necessary with an emerging discipline to adopt greater latitude in the assessment of academic credentials than is customary for established disciplines. This is especially true in the early stages of accepting applications, when the goal is to build up a critical mass of licensed practitioners as quickly as possible in order to establish a "beachhead" in the new field. It may also be useful to test out our licensing processes in advance of the receipt of applications

I BELIEVE OUR FUTURE AS A SELF-REGULATING PROFESSION WILL DEPEND ON OUR SUCCESS AT INTEGRATING NEW FIELDS OF ENGINEERING PRACTICE AS—NOT AFTER—THEY EMERGE.

to ensure they are ready to handle what will inevitably be atypical applicants. Recently, staff and volunteers in PEO's licensing and registration function conducted a triage of potential applicants practising in the field of communications infrastructure engineering with a national telecommunications carrier to identify how they would be treated in our application process for both types of licence (P.Eng. and limited licence). This exercise has yielded useful information for both PEO and the applicants.

### INDUSTRY OUTREACH

Finally, success at integrating an emerging discipline into PEO's regulatory fabric requires extensive outreach into industry and government, and extensive communication to existing licensees and potential applicants who are already working in the field—what I usually think of as marketing, a term I hesitate to use given that PEO's core mandate is to license qualified applicants in a fair and consistent manner whenever they choose to apply. But if we simply wait for organizations and individual practitioners to recognize our jurisdiction and apply, we will have spent our effort to define the emerging discipline and to prepare to regulate it in vain. They need to be made aware that the practice of the emerging discipline is subject to regulation by PEO, that PEO stands ready to assist them in complying with the act, and that everyone will ultimately benefit from having licensed professional engineers take responsibility for their work. We need to identify champions in key target industries, and to engage them in supporting our efforts to build professionalism among their staff, clients and suppliers in the field. These necessary activities represent a significant departure from normal practice for PEO.

Another key aspect of outreach for an emerging discipline is to identify opportunities to create practice guidelines and standards and demand-side legislation that will accelerate demand for licensed professionals to work in the field. Such demand must, of course, be predicated on a need to protect the public interest through licensure, not on the self-interest of the profession or its members. Fortunately, in the case of communications infrastructure engineering and nanomolecular engineering, the potential for public harm from unregulated practice is so severe that the case for restricted scopes of practice can be made easily.

I believe our future as a self-regulating profession will depend on our success at integrating new fields of engineering practice as—not after—they emerge. As time goes on, more and more of PEO's licensees will be working in these emerging disciplines, especially as traditional scopes of engineering practice continue to be commoditized. We need to become proficient at this! Σ

# ENGINEERING DIMENSIONS

September/October 2016  
Volume 37, No. 5



27 **FEATURE ARTICLE**  
**Optimizing work of volunteers seen as path to regulatory enhancement**  
By Michael Mastromatteo

32 **Chapters remain the point of first contact for future PEO leaders**  
By Michael Mastromatteo



**SECTIONS**  
**ASSOCIATION BUSINESS**

- 3 **President's Message**
- 6 **Editor's Note**
- 23 **GLP Journal**
- 25 **Governance** The role of chapters and committees in PEO governance

## NEWS AND COMMENTARY

- 8 **News (CP)<sup>2</sup> Task Force** to recommend practice profile for licence holders; PEO still pressing forward to win repeal of industrial exception; Province not ready to release details of Nipigon bridge failure; Ontario Professional Engineers Awards celebrate professional achievements; Legislative interns tour PEO; Inner city MPP addresses PEO's Discipline Committee; Quebec regulator looks to rebound from government trusteeship; New designation for infrastructure specialists
- 22 **Datepad**
- 37 **Viewpoint** Inspiring innovation and entrepreneurship within PEO's Ottawa Chapter
- 41 **Letters**

## ADVERTISING FEATURES

- 39 **Careers & Classified**
- 39 **Ad Index**
- 40 **Professional Directory**

## GIVE AND TAKE OF THE VOLUNTEER EXPERIENCE



Michael Mastromatteo  
Associate Editor

SEVERAL PEO EVENTS I have covered over the last couple of years have included workshops or break-out sessions on such topics as stakeholder engagement, best practices in recruitment, and how to take full advantage of volunteer resources.

The recent PEO Education Conference, for example, featured a discussion of volunteer engagement strategies. The salient point was that the way an organization involves its volunteers is just as important as recruiting them in the first place. As well, the discussion focused on how volunteers better commit to an organization if they receive the

proper support, strategic leadership and recognition for their efforts.

In its most basic terms, PEO gets tremendous mileage out of its 1000-strong team of volunteers, from council members (who, we sometimes forget, are volunteers themselves) to the newly licensed recent graduate who is involved in his or her local PEO chapter.

Whether it is by way of a committee or task force or through the chapter system, volunteers remain the lifeblood of PEO operations. As such, it's only natural for PEO to make a fuss every so often about its dedicated team of volunteers through its Volunteer Recognition Program (see feature sidebar, p. 31).

As you might have guessed by now, the theme of this issue is volunteers and the contributions they make to the more effective governance of the engineering regulator. We've treated this issue a few times in the past 15 years, but it makes sense to revisit such a crucial aspect of PEO operations.

It would be trite to say that volunteers play an important role in regulating the profession and in developing policy ideas for its improvement. However, as the features in this issue attest, PEO has beefed up its efforts in recent years to celebrate and reward its volunteers, and

provide opportunities for leadership development (see pages 27 and 32).

The PEO *Volunteer Manual* updated just this year, outlines some of the benefits to individual members who answer the call to volunteer service. PEO provides volunteers many opportunities, such as:

- serving the engineering profession;
- sharing knowledge, wisdom and experience with others;
- promoting the engineering profession and reaching out to local communities;
- liaising with the provincial government;
- networking with engineers within local communities and across the province;
- learning and developing leadership skills;
- meeting new people, developing new skills and discovering new experiences; and
- receiving recognition for your services to the profession.

But as certain benefits accrue to the individual volunteer, there are also benefits to the organization as well. Simply stated, volunteering is an ideal source of talent for the development of future leaders of any organization. By providing leadership and development opportunities for its army of volunteers, PEO is in effect grooming the next generation of future leaders. It bears watching as the challenge to prove the benefits of engineering self-regulation play out over the next few years.  $\Sigma$

*Engineering Dimensions* (ISSN 0227-5147) is published bimonthly by the Association of Professional Engineers of Ontario and is distributed to all PEO licensed professional engineers.

*Engineering Dimensions* publishes articles on association business and professional topics of interest to the professional engineer. The magazine's content does not necessarily reflect the opinion or policy of the council of the association, nor does the association assume any responsibility for unsolicited manuscripts and art. Author's guidelines available on request. All material is copyright. Permission to reprint editorial copy or graphics should be requested from the editor.

Address all communications to The Editor, *Engineering Dimensions*, PEO, 40 Sheppard Avenue West, Suite 101, Toronto, ON M2N 6K9. Tel: 416-840-1062, 800-339-3716. Fax: 416-224-9525, 800-268-0496.

*Engineering Dimensions* is a member of Canadian Business Press.

Indexed by the Canadian Business Index and available online in the Canadian Business and Current Affairs Database. US POSTMASTER: send address changes to *Engineering Dimensions*, P.O. Box 1042, Niagara Falls, NY, 14304.

CANADA POST: send address changes to 40 Sheppard Avenue West, Suite 101, Toronto, ON M2N 6K9. Canada Publications Mail Product Sales Agreement No. 40063309. Printed in Canada by Web Offset.

**SUBSCRIPTIONS** (Non-members)

Canada (6 issues) \$28.25 incl. HST

Other (6 issues) \$30.00

Students (6 issues) \$14.00 incl. HST

Single copy \$4.50 incl. HST

Contact: Nicole Axworthy, 416-840-1093, naxworthy@peo.on.ca

Approximately \$5.00 from each membership fee is allocated to *Engineering Dimensions* and is non-deductible.



# ENGINEERING DIMENSIONS

## PUBLICATIONS STAFF

### Publisher

David Smith  
416-840-1061  
dsmith@peo.on.ca

### Editor

Jennifer Coombes (on leave)  
416-840-1062  
jcoombes@peo.on.ca

### Associate editor

Michael Mastromatteo  
416-840-1098  
mmastromatteo@peo.on.ca

### Associate editor

Nicole Axworthy  
416-840-1093  
naxworthy@peo.on.ca

### Senior graphic designer

Stephanie Katchmar  
416-840-1063  
skatchmar@peo.on.ca

### Graphic designer

Cindy Reichle  
416-840-1067  
creichle@peo.on.ca

## ADVERTISING SALES

### Sales manager

Beth Kukkonen  
bkukkonen@dvtail.com

Dovetail Communications  
30 East Beaver Creek Road  
Suite 202

Richmond Hill, ON  
L4B 1J2

Tel: 905-886-6640  
Fax: 905-886-6615

## PEO COUNCIL

### OFFICERS

#### President

George Comrie, MEng, P.Eng., CMC, FEC  
gcomrie@peo.on.ca

#### Past president

Thomas Chong, MSc, P.Eng., PMP, FEC  
thomas.chong@rogers.com

#### President-elect

Bob Dony, PhD, P.Eng., FIEE, FEC  
bdony@peo.on.ca

#### Vice president (elected)

Patrick Quinn, PhD (honoris causa), P.Eng.,  
CEng, FCAE, FEC  
pquinn@peo.on.ca

#### Vice president (appointed)

David Brown, P.Eng., BDS, C.E.T.  
dbrown@peo.on.ca

#### Executive members

Changiz Sadr, P.Eng., FEC, CTP,  
CTME, ITILv3  
csadr@peo.on.ca

Marilyn Spink, P.Eng.  
mspink@peo.on.ca

## COUNCILLORS

### Councillors-at-large

Roydon A. Fraser, PhD, P.Eng., FEC  
rafraser@uwaterloo.ca

Roger Jones, P.Eng., FEC, MBA, SMIEEE  
rjones@peo.on.ca

Christian Bellini, P.Eng., FEC  
cbellini@peo.on.ca

### Northern Region councillors

Dan Preley, P.Eng.  
dpreley@peo.on.ca

Michael Wesa, P.Eng., FEC  
mwesa@peo.on.ca

### Eastern Region councillors

David Brown, P.Eng., BDS, C.E.T.  
dbrown@peo.on.ca

Guy Boone, P.Eng.  
gboone@peo.on.ca

### East Central Region councillors

Changiz Sadr, P.Eng., FEC, CTP,  
CTME, ITILv3  
csadr@peo.on.ca

Noubar Takessian, P.Eng., FEC  
ntakessian@peo.on.ca

### Western Region councillors

Ewald Kuczera, MSc, P.Eng.  
ekuczera@peo.on.ca

Gary Houghton, P.Eng., FEC  
ghoughton@peo.on.ca

### West Central Region councillors

Warren Turnbull, P.Eng.  
wturnbull@peo.on.ca

Danny Chui, P.Eng., FEC  
dchui@peo.on.ca

### Lieutenant governor-in-council appointees

Ishwar Bhatia, MEng, P.Eng., FEC  
ibhatia@peo.on.ca

Michael Chan, P.Eng.  
mchan@peo.on.ca

Santosh K. Gupta, PhD, MEng,  
P.Eng., FEC  
sgupta@peo.on.ca

Richard J. Hilton, P.Eng.  
rhilton@peo.on.ca

Tim Kirkby, P.Eng., FEC  
tkirkby@peo.on.ca

Vassilios Kossta  
vkossta@peo.on.ca

Lewis Lederman  
llederman@peo.on.ca

Mary Long-Irwin  
mlongirwin@peo.on.ca

Nadine Rush, C.E.T.  
nrush@peo.on.ca

Rakesh K. Shreewastav, P.Eng., AVS, FEC  
rshreewastav@peo.on.ca

Marilyn Spink, P.Eng.  
mspink@peo.on.ca

## ENGINEERS CANADA DIRECTORS

Annette Bergeron, P.Eng., FEC  
abergeron@peo.on.ca

David Brown, P.Eng., BDS, C.E.T.  
dbrown@peo.on.ca

George Comrie, P.Eng., FEC  
gcomrie@peo.on.ca

Chris D. Roney, P.Eng., BDS, FEC  
cronney@peo.on.ca

Rakesh K. Shreewastav, P.Eng., AVS, FEC  
rshreewastav@peo.on.ca

## PEO EXECUTIVE STAFF

### Registrar

Gerard McDonald, MBA, P.Eng.  
gmcdonald@peo.on.ca

### Deputy registrar, licensing and registration

Michael Price, MBA, P.Eng., FEC  
mprice@peo.on.ca

### Deputy registrar, regulatory compliance

Linda Latham, P.Eng.  
llatham@peo.on.ca

### Deputy registrar, tribunals and regulatory affairs

Johnny Zuccon, P.Eng., FEC  
jzuccon@peo.on.ca

### Chief administrative officer

Scott Clark, B.Comm, LLB, FEC (Hon)  
sclark@peo.on.ca

### Director, communications

David Smith  
dsmith@peo.on.ca

### Director, finance

Chetan Mehta, MS, MBA  
cmehta@peo.on.ca

### Director, information technology

Zico Sarmiento  
zsarmiento@peo.on.ca



## Professional Engineers Ontario

**THIS ISSUE:** It's all about volunteering. Whether it's a recent graduate looking to connect with the wider community or a veteran P.Eng. giving something back to the profession, PEO encourages members to avail themselves to the benefits—and challenges—of volunteer service to the profession.

### 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 416-840-1444 or 800-339-3716, ext. 1444. Or email [enforcement@peo.on.ca](mailto: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.

## (CP)<sup>2</sup> Task Force to recommend PRACTICE PROFILE FOR LICENCE HOLDERS

By Michael Mastromatteo

IT IS EXPECTED that PEO's Continuing Professional Competence Program (CP)<sup>2</sup> Task Force will recommend to council that licence holders, beginning in 2017, complete a practice profile to provide PEO with an accurate and up-to-date synopsis on its licence holders that will enable the association to more effectively carry out its role as regulator of the profession.



The proposed initiative would request licence holders to complete an online practice evaluation questionnaire and ethics module, and voluntarily report the number of hours spent on continuing professional development (CPD) activities during the past year. Under the proposal, information gathered through the online questionnaire would also be used to determine the recommended number of hours of professional development activity each practitioner should annually undertake to maintain a level of knowledge and skill commensurate with safeguarding the public interest.

Licence holders who complete elements of the annual practice profile would be identified in PEO's online directory.

Task force members say it's likely premature to move forward with any form of compulsory CPD program without having sufficient information about what licence holders may already be doing on their own. As such, the task force would like the regulator to gather more data on the ongoing professional development activities of licence holders before advocating for the adoption of a compulsory program.

The task force intends to present its final report and recommendations to PEO council at its November meeting, at which point council will determine the next steps.

In the meantime, PEO's information technology department is working with the task force to prepare the beta (CP)<sup>2</sup> website, which will contain the practice evaluation questionnaire and record details of a licence holder's professional practice.

(CP)<sup>2</sup> Task Force Chair Annette Bergeron, P.Eng., FEC, says focus group testing for the questionnaire has been completed and the task force will incorporate the feedback into the beta site, which will then be made available to licence holders in the fall for further review and testing.

## PEO still pressing forward to win repeal of industrial exception

By Michael Mastromatteo

With the completion of a research report into worker safety in Ontario, PEO council is now weighing its options in the effort to win repeal of the industrial exception.

The exception, section 12(3)(a) of the *Professional Engineers Act*, allows non-licensed workers to perform engineering acts on machinery or equipment used to make products in their employer's facilities.

PEO council has been awaiting the research report to buttress its long-standing argument that the exception represents a gap in worker safety in Ontario's manufacturing/industrial sector. Ontario is the only province in Canada with an industrial exception in its engineering legislation.

Whatever decision council follows, the effort to repeal the exception remains a priority for many PEO members.

The push for repeal suffered another setback in June with news of government legislation that will essentially remove the repeal from the government's books. The Ontario government's introduction of proposed amendments under the *Burden Reduction Act, 2016* would remove the chance for PEO to enhance workplace safety by having all manufacturing premises in Ontario covered by the *Professional Engineers Act*.

Meanwhile, PEO President George Comrie, P.Eng., FEC, and PEO Registrar Gerard McDonald, P.Eng., met July 14 with representatives from the premier's office, Ministry of the Attorney General, Ministry of Economic Development and Growth, and Ministry of Labour, to discuss the cancellation of the proclamation of the

repeal of the industrial exception. PEO maintains the view that the repeal is a safety issue and is not red tape as the government has determined.

At PEO's April 30 annual general meeting (AGM), for example, members supported a member submission urging the regulator to "continue discussions with the government and others to ultimately eliminate the Ontario industrial exception and align PEO with other engineering regulators."

Presented by Peter Broad, P.Eng., FEC, the long-time chair of PEO's Repeal of the Industrial Exception Task Force (RIETF), the submission said Ontario has a higher accident rate than provinces with no industrial exception in their engineering statutes, and that this province is the "least safe" regarding accidents in industrial settings. In putting the submission forward, it's not certain if Broad had access to the recently completed research study on worker safety in the province.

Member submissions put forward at AGMs are not binding on PEO council but serve to give leaders an idea of member priority.

The PEO AGM was also a forum for the outgoing and incoming presidents to raise the repeal issue. "Repealing the industrial exception is in the best interest of the public to ensure the safety of all Ontarians where engineering is practised," said Past President Thomas Chong, P.Eng., FEC. "If repealing the industrial exception were to save just one life, wouldn't it be worth it?"

Similarly, President Comrie said at the AGM that the problem of the industrial exception is compounded by the fact that there is a prevalent belief in many industries that all of their engineers are exempt from the requirement to be licensed. "This leads to the untenable situation in which unlicensed and licensed co-workers are working side by side on the same engineering tasks that fall outside the exception," Comrie said. "This constitutes a violation of the act, but PEO's ability to enforce against this illegal practice is ham-

pered by the difficulty of discovering, investigating and prosecuting such infractions. Further complicating the problem is the fact that much engineering work and product is being imported from offshore and used in Canadian jurisdictions without the involvement of a licensed Canadian engineer."

The industrial exception issue also came to the fore May 3 at the AGM of the Ontario Society of Professional Engineers (OSPE). There, Vic Fedeli, MPP for Nipissing and finance critic for the provincial Conservatives, cited the exception situation as an example of the government not listening to its engineers. "We [the opposition] once questioned the ministry of labour in an order paper about why repeal of the industrial exception was abandoned," Fedeli said. "We also asked what evidence did the government have that the costs of the repeal outweighed the safety issue of allowing non-engineers to do engineering work in manufacturing facilities, and what confirmed the validity of that data?"

"The answer I got, sadly, was not an answer at all. And, in fact, it was so disappointing, that one of your groups wrote to the minister and said, 'We have received your response to the question that was asked and it unfortunately does not provide the answer to what was posed.'"



## ▶ ENHANCE YOUR TECHNICAL KNOWLEDGE

Chemical · Civil · Construction · Electrical · Environmental · Industrial · Mechanical

Every EPIC course is designed and taught by a leading professional with extensive experience.

Choose from our listing of courses in locations across Canada and online.

Learn. Grow. Succeed.  
Discover EPIC today.

▶ EPIC

[epictraining.ca/ed](http://epictraining.ca/ed)  
1.866.754.3588

## PROVINCE NOT READY TO RELEASE DETAILS OF NIPIGON BRIDGE FAILURE

By Michael Mastromatteo



ENGINEERS LOOKING FOR information about the failure last winter of the cable-stayed Nipigon River Bridge in northwestern Ontario will have to wait a little longer.

In July, Ontario's transportation ministry advised that a final report into the causes of the bridge failure will not be made available until the fall.

The Nipigon River Bridge, which just opened to traffic in November of last year, was forced to close temporarily in December when a portion of the roadway separated from the underlying deck during an extreme cold snap.

A portion of the bridge was reopened to traffic days later after provincial engineers completed emergency repairs.

It was determined at the time that broken bolts contributed to the separation, and the Ministry of Transportation of Ontario (MTO) sent samples to both the National Research Council (NRC) lab in Ottawa and Surface Science Western at Western University for independent testing.

Although the results of those two tests have been completed, the MTO says it needs more time to determine the exact cause(s) of the bridge failure.

On its website, the MTO says the bolt studies provided only a partial answer about the bridge failure, "and as such we think it's premature to discuss it on its own at this time."

The ministry also says the investigation remains a top priority and that once all the work is complete and the causes are known, it will report back to the community and make the bolt and other reports available.

Annemarie Piscopo, an MTO spokesperson, told *Engineering Dimensions* in July that ministry bridge engineers are continuing their analysis to determine what happened to the bridge. At the same time, an independent engineering consultant with expertise in cable-stayed bridges, Associated Engineering (Ont.) Ltd., is conducting its own analysis.

An official with the NRC said July 25 their study compared the bolts that failed on the bridge to intact bolts from the bearing assembly on the other side of the bridge. No other work related to the bridge has been performed by NRC.

PEO continues to monitor the situation in the event any engineering practice issues come forward.



## SOLVE YOUR MOST PUZZLING BUSINESS CHALLENGES. RAM PROMASTER AND PROMASTER CITY.

Look up flexible in the dictionary and you'll see a picture of the 2016 Ram ProMaster.<sup>®</sup> Offering up to 15 configurations, this spacious vehicle helps any business reduce costs with an available 3.0L EcoDiesel I-4 engine that puts out 295 lb-ft of cargo-hauling torque; and gets surprisingly good fuel economy while doing it. It's also the only cargo van out there to offer front-wheel drive, which improves control and eliminates a transmission hump to maximize cargo floor space. No matter how you look at it, Ram ProMaster just adds up to better business – for any business.

CLASS-EXCLUSIVE  
**9-SPEED**  
AUTOMATIC  
TRANSMISSION

BEST-IN-CLASS  
**PAYLOAD**  
862 KG  
(1,900 LB)

BEST-IN-CLASS  
**CARGO**  
CAPACITY\*  
UP TO 3,729 L  
(131.7 CU. FT.)

BEST-IN-CLASS  
STANDARD  
**CARGO**  
CAPACITY\*  
UP TO 13,108 L  
(462.9 CU. FT.)

BEST-IN-CLASS  
TURNING  
**RADIUS**  
AS SHORT AS  
11.1 M\*  
(36.3 FT)

BEST-IN-CLASS  
STANDARD  
**INTERIOR**  
CEILING HEIGHT\*  
1,651 MM  
(65 IN)



CANADA FLEET OPERATIONS

fleet.fcacanada.ca | 1 800 463-3600

\*Based on Class 1 Small Cargo Vans. \*Based on WardsAuto Large Van segmentation.



## ONTARIO PROFESSIONAL ENGINEERS AWARDS celebrate professional achievements

*By Nicole Axworthy*

THIS YEAR MARKS the 69th anniversary of the Ontario Professional Engineers Awards, a program founded by PEO to recognize engineers for their professional achievements in such categories as engineering excellence, research and development, young engineer, and for their community service.

Since 2005, the awards have been presented jointly by PEO and the Ontario Society of Professional Engineers. This year, the following 10 awardees will be honoured at a special awards gala on Saturday, November 19 in Mississauga. For ticket information, visit [www.ospe.on.ca](http://www.ospe.on.ca).

### PROFESSIONAL ENGINEERS GOLD MEDAL

Larry Seeley, PhD, P.Eng., chair and chief executive officer, Seeley Group Ltd., has become an internationally recognized leader in developing successful mining and metallurgical processes, and profitable Canadian businesses. In 1971, he embarked on a 24-year career with Falconbridge Ltd., a major nickel mining company in Sudbury. In 1995, he facilitated the management buyout of Lakefield Research Ltd. from Falconbridge and led its growth from 120 employees to over 1000 employees. Seeley and management sold Lakefield Research in 2002, and in 2004 he left to lead a small start-up company of eight employees, Recapture Metals Ltd., as president and chief executive officer. In 2012, Seeley formed his own business, Seeley Group Ltd., which facilitates investments in commercial real estate acquisition and development, solar



Larry Seeley, PhD, P.Eng., is the recipient of this year's Gold Medal.

energy production, mining exploration, and protein production from canola. Throughout his career, Seeley has maintained a keen interest in developing the profession through his volunteer and financial support of numerous cultural, professional and educational institutions, as well as serving as a mentor for many young engineers.

### ENGINEERING MEDAL—ENGINEERING EXCELLENCE

George J. Anders, PhD, P.Eng., president, Anders Consulting, and adjunct professor, department of electrical and computer engineering, University of Toronto (U of T), helps develop new computational techniques and standards for power cable ampacity computations as a Canadian representative and co-convenor of a working group of the International Electrotechnical Commission, the international standards and conformity assessment body for all fields of electrotechnology. He established new mathematical models and computer programs for power system modeling and reliability evaluation during 37 years with Ontario Hydro and its successor companies. Several dynamic rating systems, whose software was designed by Anders, are used by major utilities in Canada and the US.

**Prepare for PEO's Professional Practice Exam with OSPE's Examination Skills Preparation Program for International Engineering Graduates**

Course fee:

**\$99** +HST

This excellent value includes:

- Required textbooks and course manual
- Supplementary exam booklet
- Free 1-year OSPE membership (based on eligibility)

We are offering programs in the GTA, Kitchener/Waterloo and Ottawa areas. **Apply early – space is limited!**

To learn more or to apply, please visit [www.ospe.on.ca/ite-exam-prep](http://www.ospe.on.ca/ite-exam-prep) or email [avig@ospe.on.ca](mailto:avig@ospe.on.ca)

Funded by: Ontario

\*Applicants to the program must have a CLB (or equivalent) of 7 or higher.

His work with power cables also led to the development of novel techniques for dielectric fluid leak detection in pipe-type cables. Anders is the author of three books and over 90 published papers in several international journals.

Vaughn Betz, PhD, P.Eng., associate professor, electrical and computer engineering, University of Toronto (U of T), has revolutionized the use of programmable chip technologies to allow engineers to rapidly create new hardware systems and realize their design visions. Betz created a packing, placement and routing tool and methodology, known as Versatile Place and Route (VPR), which is now legendary in the field programmable gate arrays (FPGA) field for being flexible, robust and accurate for area modeling and timing analysis. Today, VPR is the world's most commonly used toolset for modeling new FPGA ideas, downloaded by more than 180 companies and more than 1100 universities. To commercialize his research, Betz co-founded Right Track CAD Corporation in 1998. In 2000, the company was acquired by Altera Corporation, a Fortune 1000 semiconductor company, to obtain exclusive access to its technology.

John T.W. Yeow, PhD, P.Eng., professor, systems design engineering, Canada research chair in micro/nano devices, University of Waterloo, and president, ARTsensing Inc., was the first to develop a 3-D micromachine-based optical coherent tomographic (OCT) imaging system, which acquired the first 3-D OCT images of the central nervous system of a fruit fly. This technology enables the use of a miniaturized catheter for the early diagnosis of cancer in human cavities too small to access by existing methods. He also developed a carbon nanotube field emitter design that generates the highest current to date. This patented technology paves the way for the next generation of computed tomography (CT) architecture consisting of multiple beam x-ray sources. An innovator with an entrepreneurial spirit, Yeow founded ARTsensing Inc., a high-tech company specializing in nanotechnology-based sensors and instruments, to commercialize



Reboot  
your career

Apply for 1 of 3  
\$12,500 scholarships  
from Engineers Canada and Manulife

#### Who's eligible?

Professional engineers returning to university for further study in an engineering field.

For Scholarship details  
and applications visit:  
[engineerscanada.ca/scholarships](http://engineerscanada.ca/scholarships)

Deadline: **March 1, 2017**



\* The term ENGINEERING is an official mark owned by Engineers Canada. Manulife and the Block Design are trademarks of The Manufacturers Life Insurance Company and are used by it, and by its affiliates under licence. Manulife, P.O. Box 670, Stn Waterloo, Waterloo, Ontario N2J 4B8

## [ NEWS ]

technology developed in his lab. A charismatic researcher, he supervises one of the largest and most productive nanotechnology groups in Canada.

### ENGINEERING MEDAL—RESEARCH AND DEVELOPMENT

James Stewart Aitchison, PhD, P.Eng., professor, electrical and computer engineering, University of Toronto (U of T), is an innovative researcher and entrepreneur working in non-linear optics, nano-photonics and lab-on-a-chip technology. His recent research has increasingly focused on developing lab-on-a-chip technologies, which will have a major impact on health outcomes in developing countries, and has wider applications in the diagnosis of infectious diseases. Since 2013, he has served as the associate scientific director for the India-Canada Centre for Innovative Multidisciplinary Partnerships to Accelerate Community Transformation and Sustainability (IC-IMPACTS), a network that has supported researchers who have provided clean water solutions to First Nations communities, deployed new road technologies in India and developed new portable health-care solutions. Aitchison has also made significant contributions to engineering research and development through U of T. From 2004 to 2007, and from 2010 to 2011, he served as director of the school's Emerging Communications Technology Institute, an open research facility currently supporting the research of approximately 125 graduate students working in nanotechnologies.

Susan Louise Tighe, PhD, P.Eng., Norman W. McLeod professor of sustainable pavement engineering, director of the Centre for Pavement and Transportation Technology, and professor of civil and environmental engineering, University of Waterloo, has successfully established a research program that spans fundamental materials science to experimental performance evaluation through to implementation of innovative materials and designs on roads and airfields in Canada and abroad. Her practical research findings are used by the Ministry of Transportation of Ontario, municipalities and companies across the province to reduce costs, improve performance and reduce waste. As a founding member of the Centre for Pavement and Transportation Technology at the University of Waterloo, the first academic concrete pavement research program in Ontario, Tighe has influenced pavement

management in many countries throughout the world. She is the only Canadian to sit on the Expert Task Force that informs the US government on long-term pavement performance programs and is president-elect of the Canadian Society for Civil Engineering. She was also the recipient of the Engineering Medal in the Young Engineer category in 2004.

### ENGINEERING MEDAL—YOUNG ENGINEER

Ebrahim Bagheri, PhD, P.Eng., associate professor, department of electrical engineering, Ryerson University, equips software engineers and data scientists with new, cutting-edge tools and techniques that aim to take machines from being storage devices that support human data analysis to systems that can make sense of user-generated content themselves. The Denote software platform created by Bagheri and his research team in the Laboratory for Systems, Software and Semantics at Ryerson University recognizes positive and negative emotions in user-generated content and provides insights about the underlying meaning of social data. He is also developing software that can analyze patterns in social media posts to identify emerging trends among different communities and predict potential issues of concern. His groundbreaking work is sought after by both government and industry partners, and he is one of the most successful researchers at Ryerson in terms of industry partnerships, securing over \$3 million in the past three years. In 2016, Bagheri was appointed Canada research chair in software and semantic computing, cementing his status as a leader in the emerging field of semantics-enabled data analytics.

Lin Tan, PhD, P.Eng., associate professor, electrical and computer engineering, University of Waterloo, is an ingenious software engineering researcher who has pioneered a new branch of research that leverages various forms of software text for software bug detection in source code and code

continued on p. 16

## Does your inspection group need help?



Confined Space Entry  
Working at Heights  
Hazmat

Some jobs just need special gear and skills.

Call us 866-484-1233

or

Email [tim@trademarksafetyandrescue.com](mailto:tim@trademarksafetyandrescue.com)  
[www.trademarksafetyandrescue.com](http://www.trademarksafetyandrescue.com)

Making work less dangerous!

# ENTERTAINMENT GUARANTEED

BOOK YOUR NEXT GROUP EVENT & SAVE

MIRVISH THEATRE



Save on tickets with a group  
and host a private party!

Theatre makes for an  
entertaining gift.

Book your holiday party today!



## MAGNIFICENT THEATRES IN DOWNTOWN TORONTO

Customize your theatre  
group booking:

- ★ Variety of catering choices
- ★ Historic theatre tours
- ★ Team-building workshops
- ★ Concession & drink vouchers
- ★ Mirvish & show merchandise

Group events and experiences  
at the theatre are perfect for:

- ★ Hosting clients
- ★ Staff appreciation
- ★ Social committees
- ★ Friends & Family
- ★ Fundraisers



### MATILDA

NOW ON STAGE  
THRU DEC 18, 2016

ED MIRVISH  
THEATRE

GROUPS 10+  
SAVE UP TO 20%



### COME FROM AWAY

NOV 15, -  
JAN 8, 2017

ROYAL ALEXANDRA  
THEATRE

GROUPS 15+  
SAVE UP TO 25%



### ILLUSIONISTS

DEC 13, 2016 -  
JAN 7, 2017

PRINCESS OF WALES  
THEATRE

GROUPS 12+  
SAVE UP TO 20%

CALL MIRVISH GROUP SALES AT 416.593.4142 | 1.800.724.6420

Visit [mirvish.com](http://mirvish.com) for full show listing.

continued from p. 14

comments. Her iComment and Document-Assisted Symbolic Execution (DASE) tools are innovations that enable dramatically more effective, accurate and efficient bug detection through automated analysis of code comments and documentation. Tan has built an impressive research portfolio, securing more than \$1.3 million in research funding from provincial and federal sources, and substantial contributions from industry. Leading companies, including Google and IBM, are key partners in her research and also support internship and full-time jobs for many of her students. She has trained over 60 graduate and undergraduate students in the last six years, many of whom have held prestigious scholarships and awards.

**CITIZENSHIP AWARD**

Valerie J. Davidson, PhD, P.Eng., university professor emerita, School of Engineering, University of Guelph, has been for the past three decades an exceptional citizen within the engineering community and a dedicated champion of diversity in the profession. During her career, Davidson developed groundbreaking, fundamentals-based, engineering models of complex food processing systems. The first PhD graduate of the University of Toronto’s Canadian food engineering research program, she went on to serve as a professor at the University of Guelph’s School of Engineering from 1988 to 2012, where she pioneered many of the food engineering research and teaching programs. A passion-

ate advocate for creating a more inclusive profession, Davidson served as the Natural Sciences and Engineering Research Council (NSERC) Ontario region chair for Women in Science and Engineering from 2003 to 2011. She has also advocated for the profession through the Ontario Society of Professional Engineers, where she served several terms on the board of directors, as well as on several of its committees.

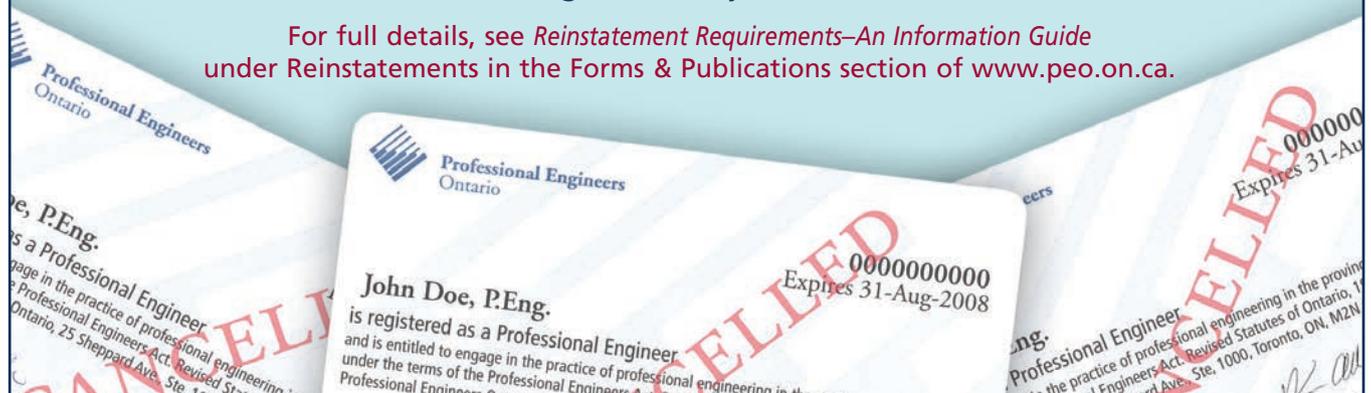
Eduardo (Ted) Maulucci, P.Eng., chief information officer, Tridel Corporation, has created industry-leading solutions in software and smart buildings that have advanced the broader real estate technology sector. His leadership in this area has set the standard for other software companies. He has leveraged his high profile in the IT sector to assist engineering programs at universities and colleges gain access to industry resources, such as financial support for student projects and in-kind contributions from industry for research. Committed to advancing social innovation through unique partnerships and collaborations, Maulucci co-founded One Million Acts of Innovation in 2010, a global, not-for-profit organization dedicated to increasing Canada’s global innovation ranking by partnering with business, government and post-secondary students. He also applies his decades of engineering and business experience as chief entrepreneur-in-residence at the Toronto Rehabilitation Institute, where he works with young engineers and researchers to develop and commercialize solutions to common problems that significantly affect people with disabilities, older people and their caregivers.

# DID YOU KNOW?

Licence holders looking to reinstate their licences are subject to rules under Regulation 941.

If you have resigned your licence or it has been cancelled for nonpayment of fees, there is a graduated reinstatement system in place. Fees and obligations increase based on the length of time your licence has been cancelled.

For full details, see *Reinstatement Requirements—An Information Guide* under Reinstatements in the Forms & Publications section of [www.peo.on.ca](http://www.peo.on.ca).



# IMAGINE CONNECTING

AN ENTIRE PROJECT WORKFORCE WITH ONE SOLUTION

When Barton Malow Company was tasked with a \$400 million reimagining of the historic Daytona International Speedway®, project engineer Jennifer couldn't let paper slow down the coordination of over 60 project partners and 1,000 trades workers. Learn how the PDF creation, markup and real-time collaboration features in Bluebeam® Revu® were deployed across the entire DAYTONA Rising workforce, streamlining communication and keeping everyone on the same page throughout this project.

Imagine the possibilities

[bluebeam.com/historic](http://bluebeam.com/historic)



bluebeam®  
A NEMETSCHEK COMPANY

**Barton  
Malow**



**LEGISLATIVE INTERNS TOUR PEO**

The Ontario engineering regulator hosted a half-day tour of its headquarters June 20 for the latest cohort from the Ontario Legislature Internship Programme (OLIP). Legislative interns have made it an annual tradition of visiting PEO and learning more about the regulator's interaction with the provincial government. The photo includes OLIP Academic Director Peter Constantinou, PhD (front row, right); along with (back row, left to right) PEO government relations consultant Howard Brown; interns Brittany Davis, Julia Redmond and Sara O'Sullivan; PEO Manager of Government Liaison Programs Jeannette Chau, P.Eng.; interns Olivia Labonté and Eric Zinn; PEO summer engineering student Yourdanos Tsegay; and (front row, left to right) interns Matt Banninga and Justyna Zegarmistrz.

**INNER CITY MPP ADDRESSES PEO'S DISCIPLINE COMMITTEE**

Han Dong (right), Liberal party MPP for the Trinity-Spadina riding, was a special guest of PEO's Discipline Committee for its June 27 meeting. Discipline Committee Chair Ravi Gupta, P.Eng., FEC, is at left. Dong, the parliamentary assistant to the minister of advanced education and skills development and the minister responsible for the poverty reduction strategy, was invited to the meeting to discuss some of the provincial government's latest initiatives in innovation and skills training. Dong later answered questions from committee members and welcomed help from engineers in enhancing Ontario's learning environment, particularly for international students.



# QUEBEC REGULATOR LOOKS to rebound from government trusteeship

By Michael Mastromatteo

**T**he president of Quebec's engineering regulator is optimistic the association will retain the confidence of its 60,000 members despite a recent move by the provincial government to put the association under trusteeship.

Kathy Baig, ing., FEC, president of the Ordre des ingénieurs du Québec (OIQ), told *Engineering Dimensions* August 2 that while the association is disappointed with the province's decision, it is committed to working with the government to improve regulation of the profession in the public interest.

"The OIQ is disappointed in that this decision was made after two years of major efforts and results in line with our mission of protecting the public," Baig says. "But since we are pursuing common objectives—sound management and governance—we respect this decision."

Baig was responding to the Quebec justice ministry's July 6 decision to put the OIQ under trusteeship for its allegedly slow and insufficient response to regulatory enhancement.

The Quebec justice ministry's Office des professions, a body that oversees Quebec's professional bodies, made the recommendation to put the OIQ under trusteeship.

continued on p. 20

WATERLOO

## educated success



### Management Sciences Graduate Degrees: Activate Your Potential

The Science of Management in today's corporate world.

Ensuring the leaders of tomorrow have the foundations needed to make informed decisions.

Operations Research, Information Systems & Management of Technology; key solutions applied to complex problems.

MSciOnline Master's program. Developed and made available for working professionals.

Forge new skills and hone your competitive edge with Management Sciences at the University of Waterloo.

[uwaterloo.ca/management-sciences](http://uwaterloo.ca/management-sciences)

**WATERLOO  
ENGINEERING**

8529

Management Master's from a World Leader



Kathy Baig, ing., FEC, president of the Ordre des ingénieurs du Québec, says the association has made significant progress in restoring confidence in engineering regulation in that province.

continued from p. 19

“The Office [des professions] determined that the effective execution of its activities of control of the profession and the financial stability of the OIQ are seriously affected, to the point of putting in doubt the capacity of the OIQ of carrying out its primary mission of protecting the public,” the office said in a July 6 media release.

The move also stems from the November 2015 release of the Charbonneau Commission report, which was called to investigate corruption and mismanagement in Quebec’s wider construction industry. A number of major Quebec-based engineering firms were implicated in the scandal.

The Quebec government in January 2015 rejected an OIQ plan to improve its governance and operations in response to the Charbonneau inquiry. At the time, Quebec Justice Minister Stéphanie Vallée described the OIQ’s report as “insufficient,” and said more work was required to ensure the OIQ fulfills its central objective of protecting the public interest.

President Baig says the OIQ is already on the right path to restor-

ing trust with members and the provincial government. “By continuing to work closely with the Office des professions du Québec as it has done in recent years, we will be able to speed up the transformation and restore the bond of trust with our stakeholders,” she says.

She adds that the OIQ is working on modernizing its public protection activities, specifically by rethinking professional inspection and improving inquiry management so that cases take less time to process. The order is also stepping up its efforts in the area of ethics.

“Both the Quebec government and the Office des professions du Québec acknowledge the work that the OIQ has accomplished to date and it is in this spirit of co-operation that we want to continue working with them,” Baig says.

**“OIQ IS THE FIRST PROFESSIONAL ASSOCIATION IN QUEBEC TO FALL UNDER PROVINCIAL TRUSTEESHIP, BUT IT IS NOT THE ONLY ASSOCIATION IN CANADA TO HAVE CAUGHT THE ATTENTION OF A GOVERNMENT”**

Pierre Lapalme, ing., P.Eng.

Pierre Lapalme, ing., P.Eng., a Laval, Quebec-based civil engineer who has a special interest in ethics and continuing professional development for engineers (and who is licensed in several provinces, including Ontario), is not overly concerned with the OIQ’s current circumstances. He does, however, believe that self-regulating associations across the board shouldn’t become too complacent.

“OIQ is the first professional association in Quebec to fall under provincial trusteeship, but it is not the only association in Canada to have caught the attention of a government,” he said in an interview. He cited the recent case of the British Columbia government withdrawing the right of self-regulation from that province’s real estate council, allegedly for favouring members’ rights over those of consumers.

“There are indications that what is the root of OIQ woes is present in other provinces. What is illegal in Quebec may not be in other provinces, but the money trail seems similar.”

Lapalme for one remains confident the OIQ will continue to regulate engineering in the public interest. “However, it’s a good sign that the government is keeping an eye on professional associations,” he says. “Let’s hope it’s a sharp eye.”

# NEW DESIGNATION FOR INFRASTRUCTURE SPECIALISTS

By Michael Mastromatteo

THE NATIONAL engineering association has developed a new certification for engineers with special expertise in infrastructure resilience.

Engineers Canada, the national organization of the provincial and territorial engineering regulators, developed its Infrastructure Resilience Professional (IRP) certification this summer. The first cohort of six IRP-designated engineers received their certificate in June.

Each of the six engineers completed a series of professional development workshops to enhance their competency in planning, designing and managing resilient infrastructure in the face of a changing climate and extreme weather—as well as practical application of their knowledge.

The six IRP recipients include David Lapp, P.Eng., practice lead for globalization and sustainable development at Engineers Canada; Guy Felio, P.Eng., infrastructure management specialist at RV Associates' Ottawa office; Brent Burton, P.Eng. (BC), senior engineer of water services at Metro Vancouver; Dirk Nyland, P.Eng. (BC), chief engineer with the British Columbia Ministry of Transportation and Infrastructure; Jeff O'Driscoll, P.Eng. (Manitoba), division manager at Associated Engineering in Winnipeg; and Roger Rempel, P.Eng. (Manitoba), a senior environmental engineer with MMM Group in Winnipeg.

"I am proud to present these accomplished engineers with our first-ever Infrastructure Resilience Professional certifications," said Engineers Canada CEO Kim Allen, P.Eng., FEC. "Infrastructure owners and operators, governments and the public can have increased confidence that the recommendations and approvals made by these engineers are supported by advanced training and experience in climate vulnerability assessment, risk management, and climate adaptation."

**TD Insurance**  
Meloche Monnex



## Scholarships to support you on your path to greater knowledge

TD Insurance Meloche Monnex, provider of the home and automobile insurance program endorsed by Engineers Canada, is proud to be associated with the Engineers Canada Scholarship Program by offering three scholarships for 2017.

### Three TD Insurance Meloche Monnex Scholarships of \$7,500

Each scholarship will assist the candidate to pursue studies or research in a field other than engineering. The discipline should favour the acquisition of knowledge which enhances performance in the engineering profession. Candidates must be accepted or registered no later than September 2017, in a faculty other than engineering.

**APPLICATION DEADLINE: March 1, 2017**

**Application forms are available at**  
[engineerscanada.ca/awards-and-honours/scholarship-program](http://engineerscanada.ca/awards-and-honours/scholarship-program)  
or by contacting the Engineers Canada Scholarship Program at  
[awards@engineerscanada.ca](mailto:awards@engineerscanada.ca)

**Building on ENGINEERING\* knowledge**



\*The term ENGINEERING is an official mark owned by Engineers Canada.  
©The TD logo and other TD trade-marks are the property of The Toronto-Dominion Bank.

## SEPTEMBER 2016



**SEPTEMBER 11-13**  
Canadian Healthcare Engineering Society 36th Annual Conference, Vancouver, BC  
[www.ches.org/conferences-and-events/2016-national-conference](http://www.ches.org/conferences-and-events/2016-national-conference)

**SEPTEMBER 11-15**  
International Mineral Processing Congress, Quebec City, QC  
[www.impc2016.org](http://www.impc2016.org)

**SEPTEMBER 11-15**  
International Symposium on Superalloys, Seven Springs, PA  
[www.tms.org/meetings/2016/superalloys2016](http://www.tms.org/meetings/2016/superalloys2016)

**SEPTEMBER 16**  
Steel Day, across Canada  
[www.steelday.ca](http://www.steelday.ca)

**SEPTEMBER 18-21**  
Canadian Society of Safety Engineering 2016 Professional Development Conference, Vancouver, BC  
[www.csse.org/annual\\_conference](http://www.csse.org/annual_conference)

**SEPTEMBER 19-20**  
Sustainable Built Environment Conference of the Americas & Green Building Festival, Toronto, ON  
[sbcanada.org/conferences/sbe16-toronto](http://sbcanada.org/conferences/sbe16-toronto)

**SEPTEMBER 21-23**  
SAE 2016 North American International Powertrain Conference, Chicago, IL  
[www.sae.org/events/naipc](http://www.sae.org/events/naipc)

**SEPTEMBER 25-28**  
Transportation Association of Canada 2016 Conference & Exhibition, Toronto, ON  
[www.tac-atc.ca/en/conference](http://www.tac-atc.ca/en/conference)



**SEPTEMBER 26-30**  
International Pipeline Conference & Expo, Calgary, AB  
[www.ipcyyc.com](http://www.ipcyyc.com)

**SEPTEMBER 28-30**  
ASME 2016 Conference on Smart Materials, Adaptive Structures & Intelligent Systems, Stowe, VT  
[www.asme.org/events/smasis](http://www.asme.org/events/smasis)

**SEPTEMBER 29**  
CISC National Steel Symposium, Toronto, ON  
[ciscsymposium.ca](http://ciscsymposium.ca)

## OCTOBER 2016

**OCTOBER 2-5**  
69th Canadian Geotechnical Conference, Vancouver, BC  
[www.geovancouver2016.com](http://www.geovancouver2016.com)

**OCTOBER 5-8**  
Biomedical Engineering Society Annual Meeting, Minneapolis, MN  
[www.bmes.org](http://www.bmes.org)

**OCTOBER 16-18**  
17th Canadian National Conference on Drinking Water, Ottawa, ON  
[centreforwaterresourcesstudies.dal.ca/water-conference](http://centreforwaterresourcesstudies.dal.ca/water-conference)

**OCTOBER 23-25**  
ACEC-Canada National Leadership Conference, Ottawa, ON  
[www.acec.ca](http://www.acec.ca)

**OCTOBER 24**  
Construction Engineering Products Expo, Ottawa, ON  
[www.canadianconsultingengineer.com/cepe](http://www.canadianconsultingengineer.com/cepe)

**OCTOBER 26**  
10th PEO Queen's Park Day Reception, Toronto, ON  
[www.peo.on.ca](http://www.peo.on.ca)

## NOVEMBER 2016

**NOVEMBER 2-3**  
Advanced Manufacturing Canada Conference & Exhibition, Toronto, ON  
[www.advancedmfg.ca](http://www.advancedmfg.ca)



**NOVEMBER 2-3**  
13th International Conference & Expo on Emerging Technologies for a Smarter World, Melville, NY  
[www.cewit.org/conference2016](http://www.cewit.org/conference2016)

**NOVEMBER 6-10**  
2016 American Nuclear Society Winter Meeting & Nuclear Technology Expo, Las Vegas, NV  
[www.ans.org/meetings/c\\_1](http://www.ans.org/meetings/c_1)

**NOVEMBER 11-17**  
International Mechanical Engineering Congress & Expo, Phoenix, AZ  
[www.asme.org/events/imece](http://www.asme.org/events/imece)

**NOVEMBER 19**  
Ontario Professional Engineers Awards Gala, Mississauga, ON  
[www.ospe.on.ca](http://www.ospe.on.ca)

# SAFETY IN MANUFACTURING: CAN YOU SPOT THE DIFFERENCE?

*By Howard Brown and Blake Keidan*

PEO OWES A LOT to its volunteers, especially the Government Liaison Program (GLP) chapter representatives.

These women and men work tirelessly to bring PEO's message to Ontario's MPPs.

Through grassroots events and initiatives, they are building strong relationships with MPPs that are valuable to PEO when dealing with government representatives on important issues facing the profession.

The Ontario government's decision not to proclaim the repeal of section 12(3)(a) of the *Professional Engineers Act*, often referred to as the industrial exception, was disappointing for everyone at PEO. New legislation was introduced in June that will actually remove the repeal from the government's books.

During meetings with ministers, MPPs and other government officials in recent months, PEO representatives have been asking why workers in manufacturing premises aren't entitled to the same protections as other members of the public.

For example, the lathe can be a dangerous machine and it is desirable to protect workers from potential hazards. One way is to add a guard to the machine to prevent workers from having access to the moving parts. An interlock can be used to disconnect power to the lathe if the guard isn't in place.

In the example below, the first image shows a lathe with a guard and interlock that was designed by an external contractor hired by the company. The second image also shows a lathe with a guard and interlock but one that was designed by an employee of the company.

The difference is that the external contractor would require a PEO Certificate of Authorization with the design prepared and reviewed by a professional engineer.

In the second scenario, under the industrial exception, there is no requirement that the design be reviewed by a professional engineer. It is also not required that the designer be a professional engineer.

Ontario is the only province in Canada that does not require that engineers oversee complex manufacturing machinery design where worker safety is at risk.

Making sure manufacturing machinery is safe is one step toward preventing workplace injuries. This can be accomplished by ensuring that those design-

## CAN YOU SPOT THE DIFFERENCE?



ing and overseeing our manufacturing equipment and processes are not only properly trained but are also willing to put their careers on the line by taking professional responsibility for the safety and quality of their work.

The struggle of moving towards increased workplace safety has been an uphill battle for PEO for many years. The Ontario government's introduction of the *Burden Reduction Act, 2016* in June would cancel the repeal. It would crush any chance PEO has of addressing a long-time goal to increase workplace safety by having all manufacturing premises in Ontario covered by the *Professional Engineers Act*.

It has often struck us that one of the reasons governments do not understand engineering regulatory issues is because there are not enough engineers in government. It is not a well-known fact that for the first time in at least four decades, the Ontario governing caucus does not have an engineer on its benches.

When Ottawa-Orléans MPP Phil McNeely, P.Eng., retired in 2014, he was replaced by the very competent Marie-France Lalonde, now the minister of government and consumer services. However, the result is there is currently no engineer in the provincial Liberal caucus.

One way to improve this situation is for engineers to actively engage MPPs, and this is where PEO GLP volunteers help. They are constantly holding discussions with ministers and MPPs. These discussions are one of the most critical avenues currently available to PEO. This is particularly true when it is part of a wider grassroots campaign taking place across the province. These meetings provide an opportunity to form relationships and foster ongoing dialogue about engineering issues with key decision makers.

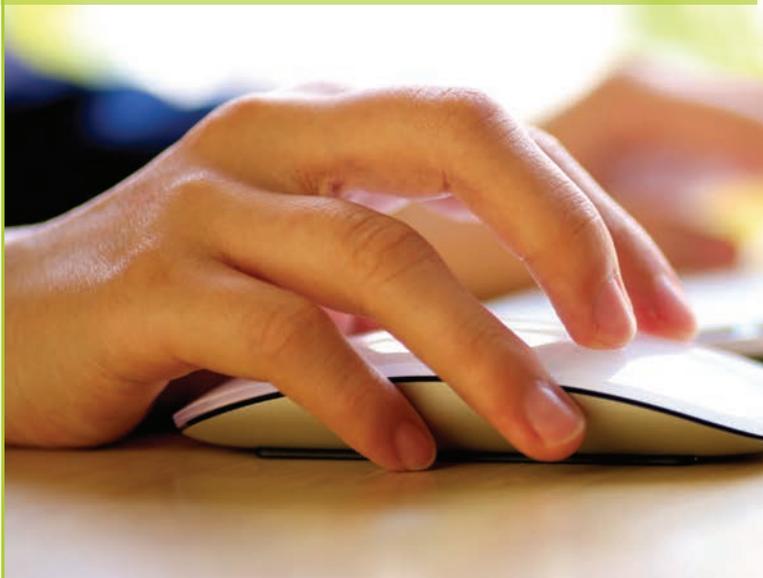
The relationships that PEO fosters through its event attendance open many doors. MPPs receive a lot of requests for their time and the organizations that tend to get heard are those whose representatives connect with MPPs on a regular basis, by attending constituency events, hosting public meetings and engaging them in the organization's activities.

"I know how important the involvement of our volunteers are to ensuring our message is heard," says Jeannette Chau, P.Eng., PEO's manager of government liaison programs. "We can't give up."

PEO will never stop addressing issues affecting the profession, including increased workplace safety. PEO volunteers make it possible to continue on. Thank you!  $\Sigma$

**Howard Brown is president of Brown & Cohen Communications & Public Affairs Inc., and PEO's government relations consultant. Blake Keidan is an account coordinator at Brown & Cohen, and PEO's government relations coordinator.**

## Did You Know? YOU'RE IN CHARGE OF YOUR SUBSCRIPTION



The *Professional Engineers Act* requires PEO to distribute copies of its official magazine to all members. You have the option of receiving the magazine digitally or in hard copy, and you can manage your subscription options with the click of a button.

Simply go to [www.peo.on.ca](http://www.peo.on.ca) and click on the Pay Fees/Manage Account tab. The *Engineering Dimensions* delivery options can be changed by logging into PEO's member portal. You can update your email and mailing addresses there, too.

## THE ROLE OF CHAPTERS AND COMMITTEES IN PEO GOVERNANCE

By Changiz Sadr, P.Eng., FEC

PEO WAS established in 1922 as a self-governing and self-regulating entity to protect the welfare of the public under the *Professional Engineers Act* (PEA). Back then, PEO delivered its mandate via a council of elected representatives and a limited number of committees. Its chapter system, which provides a crucial communications link between members-at-large and PEO council, wasn't established until many years later.

Today, PEO consists of 36 chapters across Ontario, two regional offices, a number of established and ad-hoc committees, task forces and working groups, and a council as the highest decision-making body. Some of PEO's committees are mandated by the PEA to assist the association in developing specific policies and guidelines and to run the association's core business, including its licensing function. Task forces are created temporarily to deal with special projects or issues.

Any self-regulating organization looking to improve its governance structure, and to be fully accountable to its stakeholders, has an obligation to include its members in policy development and decision making. While council remains the ultimate decision-making body, PEO's committees and chapters have no small level of influence in overall operations.

### BOARD COMMITTEES

PEO's board committees have a fiduciary and/or oversight role in PEO operations. They operate on a council-year basis—from the date of PEO's annual general meeting (AGM) in the spring to the AGM the following spring. The majority of committee members are sitting members of the current council, and members are selected either by position, election or appointment at a council meeting. PEO's board committees include:

- Executive Committee;
- Finance Committee;
- Human Resources Committee;
- Legislation Committee;
- OSPE-PEO Joint Relations Committee; and
- Regional Councillors Committee.

### OTHER COMMITTEES REPORTING TO COUNCIL

These committees share some of the same characteristics of board committees, such as their duty to report to council, but their membership is open to the general membership. Some of them have a limited number of members while others have more than 100 members. Current committees in this category include:

- Academic Requirements Committee;
- Advisory Committee on Volunteers;

- Awards Committee;
- Central Election and Search Committee;
- Complaints Committee;
- Complaints Review Councillor;
- Consulting Engineer Designation Committee;
- Discipline Committee;
- Education Committee;
- Enforcement Committee;
- Equity and Diversity Committee;
- Experience Requirements Committee;
- Fees Mediation Committee;
- Government Liaison Committee;
- Licensing Committee;
- PEO-OAA Joint Liaison Committee;
- Professional Standards Committee and subcommittees;
- Registration Committee;
- Regional committees; and
- Volunteer Leadership Conference Planning Committee.

### TASK FORCES

These committees are temporary, set up for a specific timeframe and are terminated when their mandates are accomplished. The current task forces in operation are:

- Continuing Professional Competence Program (CP)<sup>2</sup> Task Force;
- Council Term Limits Task Force;
- Emerging Disciplines Task Force;
- PEO National Framework Task Force; and
- Repeal of the Industrial Exception Task Force.

### REGIONAL OFFICES

PEO's regional offices were established as centres of activity to provide administrative support to PEO chapters, promote the value of licensure to university students, and support PEO's Student Membership Program in engineering schools. PEO regional offices are:

- Northern Regional Office, located in the engineering department of Lakehead University in Thunder Bay; and
- Western Regional Office, located in the engineering department of Western University in London.

### CHAPTER SYSTEM

Chapters are made up of PEO members and engineering interns in cities across Ontario and, at the grassroots level, are the main contact for the general membership and the public. Each chapter is governed by its own board of executives, comprising five officers (chair, vice chair, treasurer, secretary, and past chair) and a number of executives, that

## GOVERNANCE

meets several times a year. Chapters carry out a broad range of activities and functions, including but not limited to organizing licence certificate presentation ceremonies, hosting technical seminars and social events, providing a forum for members to exchange knowledge and ideas, and offering professional networking opportunities for members.

Another subtler objective of the chapter system—one that has been coming to the fore over the years—is to act as a training ground for the development of future leaders for PEO council and committees. In many instances, chapter volunteers acquire administrative, decision-making and governance skills that are extremely valuable not only to the individual, but to PEO as an organization.

PEO's 36 chapters are located within five distinct regions. They are:

- Eastern Region: Algonquin, Kingston, Ottawa, Peterborough, Quinte, Thousand Islands, and Upper Canada chapters;
- East Central Region: East Toronto, Lake Ontario, Scarborough, Simcoe-Muskoka, Willowdale/Thornhill, and York chapters;
- Northern Region: Algoma, Lakehead, Lake-of-the-woods/Atikokan, North Bay, Porcupine/Kapuskasing, Sudbury and Temiskaming chapters;
- West Central Region: Brampton, Etobicoke, Kingsway, Mississauga, Oakville, Toronto-Humber, and West Toronto chapters; and
- Western Region: Brantford, Chatham-Kent, Georgian Bay, Grand River, Hamilton-Burlington, Lambton, London, Niagara, and Windsor-Essex chapters.

Chapters' mandates are defined through five "essential purposes" as follows:

1. Presence: Enhance public awareness for the engineering profession in the local community;
2. Communication: Facilitate two-way communication with the licence holders and PEO council, and report non-compliance issues;
3. Grassroots participation: Promote participation of licence holders in chapter and other PEO activities, and encourage licence holders to take an interest and participate in PEO governance—voting in PEO elections, through conversations, coming out to town hall meetings, asking questions, etc.;

4. Recognition: Recognize individual members for their support of the profession, firms for their support of chapters and of the profession, and chapters for exceptional leadership and programming; and
5. Governance: Encourage P.Engs to participate in regulatory roles, and enforcement and discipline activities at PEO.

With an annual budget allotted by PEO, the chapters can focus on core activities like chapter AGMs, licence presentation ceremonies, producing a regular newsletter for their local membership, and optional activities like mentoring programs and student outreach activities. All activities must meet the above-mentioned essential purposes.

Optional activities are what chapters decide to deliver based on their specific geographical areas and members' demands. With these activities, chapters extend PEO's reach throughout Ontario and, in some cases, they have inspired PEO headquarters to expand on those activities. For example, the Engineering Project of the Year Award that the York Chapter launched in 2012 has now been adopted by PEO's Awards Committee. PEO's Mississauga, Brampton, Oakville, Scarborough and York chapters conducted a pilot mentoring program, which resulted in the establishment of the Licensure Assistance Program and is deployed by about 20 chapters. In addition, the Oakville and York chapters initiated full-day industrial and technical symposiums that attracted hundreds of people from the membership, industry and academia.

PEO has a regular staff of about 100, and close to 1000 volunteers who participate on committees, task forces, council and within the 36 chapters, combining to carry out the mandate of the association. All told, committees and chapters play an important but easily overlooked role in ensuring the smooth operation of PEO governance and administrative enhancement. Σ

**Changiz Sadr, P.Eng., FEC, is chair of the Regional Councillors Committee, senior East Central Region councillor on PEO council and a member of the Executive Committee.**

### WHO WILL YOU NOMINATE?

The Ontario Professional Engineers Awards recognize professional engineering excellence in innovation, leadership and entrepreneurship, and honour contributions to society as well. In addition to these individual tributes, an exciting new award category was added in 2015 to recognize a project or achievement by a team of professional engineers that has had a significant impact on society, industry or engineering.

OPEA eligibility requirements and nomination forms are available at [www.peo.on.ca](http://www.peo.on.ca).

The nomination deadline is **Wednesday, February 22, 2017.**

# VOLUNTEERS needed

## Optimizing work of volunteers seen as path to regulatory enhancement

Volunteers have always been a key part of PEO operations, but the regulator is now offering leadership development as an additional reward for getting more involved in administrative and governance work.

By Michael Mastromatteo

**PEO President** George Comrie, P.Eng., FEC, was characteristically forthright with some of his comments at the association's 2016 annual general meeting.

While discussing his priorities as president for the coming year, Comrie offered a few thoughts on the importance of volunteer input in the governance and administration of the engineering regulator.

"I don't believe it is reasonable for an organization like PEO to just assume that everyone who volunteers comes with the background and skills necessary to make an effective contribution," Comrie said. "I have long felt that we could do a better job of ensuring that candidates for volunteer leadership in PEO have a solid common understanding of the mandate, roles and responsibilities, authorities and procedures of the organization."

Rather than dissuading potential volunteers, however, Comrie's remarks actually highlight the

challenge PEO faces in better utilizing the talent, dedication and commitment of member volunteers.

It's an issue that has long concerned PEO as it seeks to preserve the privileges and responsibilities of self-regulation in the public interest. In the last few years, for example, the regulator has stepped up its efforts to attract the right candidates for volunteer positions on task forces and committees, while at the same time enhancing its volunteer recognition and appreciation programs. PEO also holds its 36 chapters as a point of first contact for would-be volunteers, which often serve to attract members and acclimatize them for long-term volunteer service with the regulator and the engineering profession (see page 32).

In 2009, PEO created its *Committees and Task Forces Policy-Reference Guide*, which calls for broadened volunteer engagement and for efforts to ensure

committees facilitate ongoing volunteer learning and leadership development.

Although volunteer appointments have always been an avenue for members to support PEO's work, it has only been recently that they have been touted as a form of leadership succession. In other words, encouraging volunteerism, either at the committee or chapter level, is emphasized as a path to develop future leaders.

PEO has certainly enhanced its services to volunteers in the years since. As PEO Registrar Gerard McDonald, P.Eng., notes in PEO's *Volunteer Manual* ([www.peo.on.ca/index.php/ci\\_id/29876/la\\_id/1.htm](http://www.peo.on.ca/index.php/ci_id/29876/la_id/1.htm)): "My goal is to create an environment where our volunteers can be very productive. This will help to attract more volunteers and enable us to plan for leadership succession—and help our future leaders prepare."

PEO also has leadership succession in mind with some recent council initiatives intended to bring more diversity to its volunteer talent pool. In addition to looking for ways to engage new and younger volunteers, PEO council is also studying the concept of term limits for council members and volunteers as another way to create more opportunities for those interested in serving PEO and the profession. There is no doubt volunteers are the *sine qua non* of PEO operations. As stated in the *Volunteer Manual*, volunteers play a significant role at PEO by contributing their time, energy and exceptional talents to its operations.

## VOLUNTEER RECRUITMENT

At present, about 1000 engineers, engineering interns and non-engineers volunteer their time each year to work on behalf of the regulator, either by serving on committees and subcommittees, task forces or through the chapter system.

PEO volunteers may become involved at the chapter level, proceed to a committee or task force, and eventually seek a seat on council—with the possibility of becoming one of PEO's future leaders.

But that isn't always the case. Not all PEO volunteers get their start at the chapter level. Occasionally, PEO's people development department has a need for volunteers with special expertise to fill positions on different committees and task forces. In these instances, volunteer recruiting becomes more active. PEO looks to match the right experience and skill set with certain roles when selecting volunteer talent for service on committees and task forces. It is also keen on recruiting younger and more diverse volunteers.

PEO members looking to volunteer on a committee or task force go through a selection process developed by the people development department that begins with a review and assessment of applications and resumes. A shortlist of the



At the recent annual general meeting, President George Comrie, P.Eng., FEC, cited the importance of PEO providing the right training and leadership development opportunities for members looking to take a more active role in the regulator's operations.

Long-time PEO volunteer and former president Peter DeVita, P.Eng., FEC, requires volunteers with special expertise in his role as chair of PEO's Emerging Disciplines Task Force.



PEO's recently updated volunteer website explains the role of volunteering to overall operations and directs would-be recruits to the latest opportunities.

most qualified candidates is sent for approval to the committee chair or whole committee for final selection.

Fern Gonçalves, CHRL, director of people development at PEO, reminds members that recruiting volunteers for some committee and task force work can be competitive. "Many times, the committees are looking for specific competencies, not just labour," she tells *Engineering Dimensions*. "This requires us to look for the volunteer with the right combination of skills and experience. Some potential volunteers might be disappointed when they offer their services to PEO but don't get selected for a specific committee. We have to let members know that there may be limited opportunity on a specific committee, but we keep all applications on file in our volunteer database for future volunteer opportunities."

PEO has more than 30 established committees and five task forces currently in operation. This is over and above the board committees that are generally staffed by sitting members of council.

In keeping with the stepped-up outreach to members looking to support the regulator in its administrative and governance roles, in 2012 PEO launched a volunteer website (<http://forum.peo.on.ca/PEOVAA/Volunteer/VolunteeringHome.aspx>), which is now seen as the most effective recruitment tool. As of late August, there were 40 openings listed on the volunteer website. While most of these are for chapter-related positions, there are vacancies on such committees as the Academic Requirements and Consulting Engineer Designation committees.

Closely allied with recruitment work are PEO's moves to promote the leadership development potential of volunteerism. Benefits accru-

ing to volunteers at PEO include a sense of serving the engineering profession while sharing knowledge and experience with professional peers. Volunteers also promote and advance the engineering profession by reaching out to local communities. This latter point is especially seen by volunteers who get involved with their local chapters and the Government Liaison Program (GLP).

Some of the work of the people development department is assisted by PEO's Advisory Committee on Volunteers (ACV), which supports the training needs of PEO volunteers in accordance with human resources plans developed by and for committees and task forces.

Other objectives for the ACV include the enhancement of volunteer training and recognition programs; developing effective protocols for ACV's interactions with council, the registrar and other committees and task force advisors; and improving communications between ACV, all volunteers and PEO membership.

The ACV also identifies general knowledge and skills that PEO volunteers require in support of their volunteer work. To that end, the committee maintains tools for volunteer training and provides a means to recognize volunteers and their employers.

## LEADERSHIP DEVELOPMENT

At least two PEO bodies—the Human Resources Committee and the ACV—have also been involved in discussions related to member turnover and succession planning. The ACV, for example, is partway through a review of the *Committees and Task Forces Policy—Reference Guide*, which states that “committees, through their council-approved terms of reference, will determine the duration and limits on the number of years members of the committee can serve, including any limits on consecutive terms in the same position.”

Individual volunteers at PEO are quick to recognize not only the benefits of volunteering on behalf of the profession, but also the importance of PEO devoting some resources to leadership development.

Gabriel Tse, P.Eng., is chair of the Grand River Chapter’s GLP committee, and he serves as vice chair of the association’s Government Relations Committee (GLC). He is also a long-time volunteer with the Grand River Chapter. Through the government relations activities, Tse helps promote the work of PEO and engineering to his provincial member of parliament and to other stakeholders in the community.

Tse, principal of Lycath Technical Sales in Kitchener, Ontario, is one PEO volunteer who recognizes the mutual benefits to the individual and organization when it comes to volunteerism.

“It makes a tremendous difference to be able to network and build contacts by getting involved in these kinds of committees,” he says. “Working with GLC and various GLP chairs provided me with the opportunity to learn from different engineers of various specialties and backgrounds. I probably would not have had the chance to meet them otherwise. This is obviously not a direct enhancement of my technical capabilities, but gives me the chance to broaden my way of thinking and handling a problem.”

Newer PEO members are also quick to take up the volunteer cause. Priscilla Williams, EIT, of the Windsor-Essex Chapter, came to volunteer work at the invitation of PEO’s Education Committee. She is now heavily involved in the planning and preparation of the annual Education Conference, held each May at PEO headquarters in Toronto.



Peter Broad, P.Eng., FEC, has dedicated countless hours of volunteer service to PEO primarily through his work with the Repeal of the Industrial Exception Task Force.

“I wasn’t actually involved in my local chapter when I began volunteering,” Williams says. “I applied for a vacant volunteer position at the recommendation of my graduate supervisor, who saw the call for applications and brought the posting to my attention, feeling that I would be a good fit based on my experiences and long-term interests.”

Williams says longer-serving members have been instrumental in encouraging new members to volunteer. “I didn’t undergo specific leadership training when I began volunteering, but have been well-supported by my fellow volunteers when taking on new roles and responsibilities,” she says. “Generally speaking, I feel that natural turnover within, and expansion of, the committee has ensured a good balance of experienced and fresh perspectives during my time as a volunteer. I’m the EIT member on the Education Committee and we have a student member as well, so there is also a good mix of experiences in the profession at the table.”

President Comrie also recognizes that organizations making use of volunteer efforts have certain obligations of their own. “Taking the concept of leadership development even further, we [PEO] have an opportunity to give something back to our dedicated volunteers by investing in their leader-

PEO's people development team introduced the volunteer service recognition pin program in 2011. Here, long-time volunteer Comodore Ravindran, PhD, P.Eng., FEC (centre), shows off his pin for 15 years of service with the Experience Requirements Committee (ERC). Also pictured are (left to right) Pauline Lebel, P.Eng., manager of licensure, Michael Price, P.Eng., FEC, deputy registrar, licensing and registration, Santosh Gupta, PhD, P.Eng., FEC, ERC chair and lieutenant governor-appointed councillor to PEO council, and David Kiguel, P.Eng., vice chair of ERC.



ship development in terms of 'soft' skills such as facilitation, conflict resolution, team dynamics, and so on," Comrie said at the April 30 annual general meeting.

"I am pleased to be able to tell you that we have funds set aside to begin development of a series of online modules that will cover the important background information needed by new PEO volunteers. My hope is that we can eventually build a comprehensive leadership development program that includes some hands-on workshop modules as well. This initiative will help to ensure PEO has an adequate pool of skilled volunteer leaders for purposes of leadership succession. And the leadership skills our volunteers acquire will benefit them in their work and personal lives as well."

In his remarks, the PEO president also said volunteer organizations such as PEO make "excellent incubators" for leadership development skills. "The reason is simple: we can't force volunteers to do anything. We can only inspire and empower them to work for shared common goals. We can only show them the way by example. So I would be remiss if I did not take this opportunity to thank all of you for your commitment to PEO and for your support of our common goal—the strengthening of our great profession, and the betterment of the public we serve." Σ

## Recognition programs highlight special role for volunteers

PEO has been active with efforts to recognize and reward volunteers who commit a portion of their professional working lives to supporting the engineering regulator.

One of the longstanding volunteer recognition activities is the annual Order of Honour awards program, which recognizes professional engineers and others who have rendered conspicuous service to the engineering profession.

PEO also recognizes volunteers who have served on chapters, committees and task forces, or PEO council, and celebrates achievements of milestone years of service. One of the more recent additions to PEO's volunteer service program is the recognition pin, awarded to those with five, 15 and 20 years of work on behalf of the regulator (Engineers Canada's fellowship pin recognizes 10 years of service). The service pin program was established in 2011, and over the past five years has awarded more than 730 pins to committee, task force and chapter volunteers. A special sterling-silver pin is also presented to volunteers with 25 or more years of service.

In April, then PEO President Thomas Chong, P.Eng., FEC, issued a special statement as part of the regulator's recognition of National Volunteer Week: "The theme of National Volunteer Week 2016 emphasizes the similarities between those who graciously donate their time and ideas to help grow their communities with a seedling growing into a tree," Chong said. "Thanks to volunteers, our communities grow strong and resilient. Even the tiniest volunteer effort leaves a profound and lasting trace in a community, much like tree rings that appear over time. And I can think of no better example of the value and importance of volunteerism than is displayed every day at Professional Engineers Ontario."



## Chapters remain the point of first contact for future PEO leaders

It's axiomatic that good citizenry requires some degree of participation. For members looking to participate more fulsomely in the regulator's operations and governance, the local chapter is the best place to get started.

BY MICHAEL MASTROMATTEO

PEO's Mississauga, Oakville and Brampton chapters gathered to acknowledge the contributions of their members involved in PEO's pilot mentorship program in 2010. Close to 100 mentors, mentees and PEO council and chapter members attended the special event.



# K

ey discussion points at the 2016 Volunteer Leadership Conference (VLC), a major gathering that precedes PEO's annual general meeting, focused on how chapters and committees can work together to create "new pathways" to service. The conference was organized in part to discuss novel ways in which chapter and committee volunteers might work to help PEO achieve its mandate of regulating and advancing engineering practice to protect the public interest.

It was eminently sensible that the PEO chapter system be a major part of any examination of how volunteerism—the use of members' own time, talent and expertise—can best be used to further PEO's role.

The 36 PEO chapters, after all, are long regarded as the first point of contact for engineering interns and newly licensed engineers looking to give something back to the profession as they set out on their careers. The chapters allow them to get involved with their local professional engineering community and learn more about PEO. In fact, the virtues of volunteer work with the local chapter as a natural starting point for new members to become more active are usually extolled at licence presentation ceremonies across the province.

The significance of the chapter system as a catchment area for potential volunteers is not lost on PEO's human resources and people development officials. In PEO's recently updated *Volunteer Manual*, chapters are held out as the way to facilitate participation and training of licence holders in the succession planning for PEO leadership, and governance and statutory duties of the regulator.

Chapters are also charged with promoting the value of the profession to future licence holders and enhancing the importance of licensure and self-regulation not only within the profession but to community leaders and the general public. Finally, chapters encourage members to have a say in PEO's policy development process.

The references here to "succession planning" for PEO leadership should not be underestimated. The term generally refers to an organization's efforts to train and mentor stakeholders in anticipation of their taking on greater responsibilities as they grow within the organization.



Chapter volunteers across the province make possible the annual National Engineering Month events, which are opportunities to teach students about the benefits of engineering. Here, students show their excitement at PEO Grand River Chapter's Mathletics competition, held March 28, 2015 at Conestoga College.



Laurentian University students watch over their interactive display at PEO Sudbury Chapter's booth at the New Sudbury Shopping Centre, held on March 7, 2015.



Sudbury Chapter volunteers help students test the strength of a popsicle-stick bridge at the 2015 bridge-building competition as part of National Engineering Month. Photo: Rebecca Bose



As part of National Engineering Month, Nick Parcher, EIT, speaks to the students of The Grove Community School in Toronto on the possibilities and power of engineering to create meaningful social and environmental change.

It's not uncommon for chapter executive members to move on from chapter work to then volunteer on PEO committees or task forces, and eventually seek a seat on council.

There are countless examples of PEO leaders, including former presidents, who "came of age" through involvement in their local chapter. Current President George Comrie, P.Eng., FEC, for example, noted at this year's PEO Education Conference that education outreach provided the opportunity for him to get his first taste of PEO volunteerism.

Matthew Ng, P.Eng., PEO's chapter manager, says that while it's not compulsory for people to volunteer at the chapter level before moving on to more involved committee or task force work, it makes sense for would-be volunteers to start at the local level.

### TAKING ON NEW ROLES

Ng says the regulator is strongly committed to supporting its chapters as a training ground for volunteers and future leaders: "The local chapter is still an ideal place for members to get involved if they want to serve the local community and the profession. As volunteers take on new roles they often develop the confidence to take on bigger challenges, either within the chapter or on one of the committees and task forces that is looking for special expertise."

He also says the chapter system is open to devoting additional resources for some chapters to organize new and innovative projects. Earlier this year, the Regional Councillors Committee's (RCC's) special project fund supported the Upper Canada Chapter's participation in the Cornwall Construction event, an annual non-profit competition that sees teams of designers build eye-catching structures out of cans of food, with donations going to local food banks.

"The Upper Canada Chapter team was really excited and enthusiastic about this event. They applied for the special project fund and RCC thought it would

continued on p. 36



PEO provides networking opportunities for chapter volunteers at its annual AGM. Here, Galal Abdelmessih, P.Eng., FEC, vice chair, Mississauga Chapter, and Marcelo Sarkis, P.Eng., vice chair, Peterborough Chapter, get caught up on each other's latest activities.



The Ottawa Chapter launched its new entrepreneurship program in September 2015 with the assistance of a committee of volunteers. Here, retired engineer Edward Atraghji, P.Eng., displays a mock-up model of a 3-D printer developed at a University of Ottawa lab. Graduate student Robert Rayson looks on at left.



Above left: The annual Volunteer Leadership Conference often devotes some time to a discussion of how PEO chapters can help develop future leaders. At the 2014 conference, a panel of volunteers, including (left to right) Arash Yazdani, P.Eng. (Peterborough), Sohail Naseer, P.Eng. (Oakville), Matthew Xie, P.Eng., FEC (York), and Gabriel Tse, P.Eng. (Grand River), shared their views on how chapter volunteers can become leaders in their local communities.

Above: Mentoring and networking activity play a big part of volunteer work at York Chapter. Last November, the chapter organized an "accelerated mentoring" event that helped recent graduates and interns get a heads-up on the job search. Among the participants were (left to right) Daniel Liao, P.Eng., Nicholas Lo, Scott Wei, Xueying Zhang, P.Eng., and Paul Phillippe Champagne, EIT.

Oakville Chapter volunteers played a key role in organizing last fall's licence presentation ceremony. Among the guests and organizers at the September 2015 event were (left to right) Len D'Elia, P.Eng., Parisa Mahdian, P.Eng., Warren Turnbull, P.Eng., then PEO President Thomas Chong, P.Eng., FEC, his wife Lily Yan, Oakville municipal councillor Tom Adams, PEO West Central Region Councillor Danny Chui, P.Eng., FEC, and Oakville Chapter Chair Sohail Naseer, P.Eng.

continued from p. 34

be a good idea to offer the support,” Ng says. “It provided some encouragement to their local volunteers to keep coming up with different ideas for their chapter involvement.”

The availability of chapter-based volunteer opportunities is apparent on PEO’s volunteer website (<http://forum.peo.on.ca/PEOVAA/Volunteer/VolunteeringHome.aspx>). As of late August, more than three-quarters of the available volunteer positions were within the chapter system.

Despite the relative ease of entry for chapter-based volunteer positions, however, PEO is still keen on making chapter volunteering more mutually beneficial to the individual and the entire organization. The chapter and PEO benefit from the individual’s time and talent, while the individual is afforded an opportunity to develop leadership skills.

A paper on succession planning, term limits and continuity produced for the 2016 VLC indicates that some PEO chapters have addressed the issue of succession planning for executive positions. It appears most chapters are supportive of succession planning and even term limits for their volunteer leaders. Some of the larger chapters are considering adding term limits in their chapter bylaws.

For an organization like PEO, the VLC study continues, succession planning poses many challenges. One challenge is related to finding and retaining chapter executives as well as committee chairs. Another challenge is that the position of chair or other key positions are being held by the same person for an extensive period of time, which deprives others of an opportunity to serve in this role and obtain new experience. “This may potentially create a barrier for new ideas to come forward, and certainly impedes succession planning,” VLC officials conclude. “It can also make it difficult to fill the position when turnover eventually happens.”

Some degree of turnover, however, can be positive by infusing new membership while maintaining continuity.

So while the chapter system will remain the first point of entry for PEO members who want to volunteer, it will continually strive to make the volunteer experience more engaging to the individual and more beneficial to the wider profession.

“Anyone who has a strong conviction to give back to their profession but is unsure how to do it, the chapter system is a good place to start,” says Cliff Knox, P.Eng., PEO’s manager of enforcement, and a former member of PEO council.

“Shortly after getting my licence, my wife suggested that I get involved with my local chapter. I started out as a general member of the executive for the Thousand Islands Chapter in Brockville. Before I knew it, I was the secretary and later vice chair of the chapter. After my third term as chair, I made the leap to PEO council. This, in turn, led to service on a number of PEO committees and working groups. I guess that familiarity breeds commitment. What started out as a hobby ended up as a rewarding 17 years of volunteer service.” Σ



Long-time PEO volunteer Chris Kan, P.Eng., FEC (left), with Chapter Manager Matthew Ng, P.Eng., FEC, at the 2015 Order of Honour gala. Kan was named an Officer of the order due in part to his “inspiring and contagious” dedication to chapter affairs.

Dennis Woo, P.Eng., past chair of the PEO York Chapter, became a Member of the Order of Honour in April 2016. Woo was recognized for the award in part for his outstanding stewardship in managing chapter activities. He was also awarded for his efforts to promote succession planning and recruitment of new members to the chapter executive. “Volunteering,” Woo said at the time, “is a great way for all engineers to participate outside our comfort zone.”

## INSPIRING INNOVATION AND ENTREPRENEURSHIP WITHIN PEO'S OTTAWA CHAPTER

*By Tapan Das, PhD, P.Eng.*

Innovation and entrepreneurship are tightly linked to each other. Entrepreneurship is characterized by innovation and risk-taking, and is an essential part of a nation's ability to succeed in an ever-changing and increasingly competitive global marketplace. Invention can be defined as the creation of a product or introduction of a process for the first time, whereas innovation occurs if someone improves on or makes a significant contribution to an existing product, process or service.

Ted Hoff at Intel Corp. is credited with the invention of the micro-processor. By itself, the microprocessor was nothing more than another piece on the circuit board. It's what was done with that piece—the hundreds of thousands of products, processes and services that evolved from the invention of the microprocessor—that required innovation. Steve Jobs of Apple is a poster child of innovation. Innovation and entrepreneurship are so closely linked that I have taken the liberty of combining them into one word: “innopreneurship.”

### ENTREPRENEURSHIP CULTURE

Innopreneurship is key to Canada's competitiveness. Our productivity and innovation are closely linked to it, and we continue to lag behind our international competitors. According to a 2013 Conference Board of Canada report ([www.conferenceboard.ca/hcp/details/innovation.aspx](http://www.conferenceboard.ca/hcp/details/innovation.aspx)), Canada remains near the bottom of its peer group on innovation, ranking 13th among the 16 peer countries. The report says countries with the highest overall scores have successfully developed national strategies around innovation, giving them a substantial lead over their peers in one or more areas. Ireland has seen enormous success as a host for leading innovative companies; the US fosters a combination of top science and engineering faculties, broad and deep capital markets, and an entrepreneurial culture; and Switzerland, the top-ranked country, is a leader in the pharmaceuticals industry.

Countries stay developed because of innovation and entrepreneurship in science, engineering and technology-creating businesses. Canada needs more entrepreneurs and it needs to help current entrepreneurs not only to survive, but thrive. There are entrepreneurs in multinational corporations, small local businesses, among immigrants and Canadian families, and in rural and urban communities. The Conference Board of Canada report concludes that “Canada is well supplied with good universities, engineering schools, teaching hospitals and technical institutes. It produces science that is well respected around the world. But, with some exceptions, Canada does not take the steps that other countries take to ensure research can be successfully commercialized and used as a source for innovative companies seeking global

market share. Canadian companies are thus rarely at the leading edge of new technology and too often find themselves a generation or more behind in productivity growth achieved by global industry leaders.”

I worked in Silicon Valley for a few years and found that “innopreneurship” is a part of its culture. Brilliant graduates from the US and all over the world work there with only one mantra: be innovative and risk failure. There, failure is not shameful but an achievement that proves courage and entrepreneurship. Entrepreneurs gather and discuss their failures. There are investors and companies who also take risks to help the innovators—the number of seed investment deals in Silicon Valley is increasing. Even if they fail, they keep moving forward because if and when one attempt turns out successful, it could well outweigh the losses.

We need to develop this kind of culture in Canada to stay competitive in the world market. Natural resources like oil, woods and minerals will run out and cannot sustain our development. “Innopreneurship” has no limit and is the best way to stay developed and competitive.

### TYPES OF ENTREPRENEURS

I believe there are four types of entrepreneurs: those who want to be entrepreneurs but have no specific idea in mind or expertise; those who have particular ideas but need help to prove them; those who have proven their ideas with prototypes or research but need help to start a business; and those who have started a business to sell their products but need help to grow.

Our entrepreneurs need resources to support and prove their ideas with minimal or no cost initially. These resources include:

- Universities and colleges with their entrepreneurial courses and laboratory facilities;
- Business services like Invest Ottawa, MaRS and Research Innovation Commercialisation Centre;

## [ VIEWPOINT ]

- Various industries and companies;
- Funding resources like Futurpreneur Canada, Industrial Research Assistance Program, Invest in Ontario, Ottawa Community Loan Fund and Canada Business Network; and
- Mentors who are successful entrepreneurs.

### ENTREPRENEURSHIP PILOT PROGRAM

In April 2015 I was invited by the Ottawa Chapter's then Chair Guy Boone, P.Eng., to attend a chapter board meeting to propose a plan to start a chapter-run entrepreneurship program. The plan was unanimously approved. The program is meant to support individuals, including women engineers and entrepreneurs, university graduates and immigrant engineers, in all sectors for development of products and services. The entrepreneurship program has four key elements:

- Determine the needs of individuals interested in becoming entrepreneurs;
- Find the right resources for their needs;
- Facilitate the partnership between the resources and entrepreneurs; and
- Monitor the progress and provide other resources if and when required.

After receiving support from local schools, resource programs and experts, a pilot program was launched on June 29, 2015 with presentations from the Ottawa Chapter entrepreneurship program team: Professor Tony Ballelli, PhD, of Carleton University's technology innovation management program; Professor Hanan Anis of the University of Ottawa's School of Information Technology; Luc Lalande, executive director of the University of Ottawa's Entrepreneurship Hub; Peter Stewart of Invest Ottawa (now Christine Evans), and Marco Janeczek, director of L-Spark, an Ottawa-based incubator and accelerator of the enterprise software market.

Seven PEO members enrolled in the program as entrepreneurs, and Avo Bedrossian, P.Eng., founder of OpsInSynch—a company that helps businesses with operations improvement methodologies to achieve growth and profitability—volunteered as a mentor. Through the program, the entrepreneurs have been partnered with the appropriate resources and received helpful advice. One entrepreneur, Edward Atraghji, P.Eng., for example, had an idea for a multistage axial flow radial compressor for jet engines. University of Ottawa Professor Anis engaged a graduate student to help him use a 3-D

printer at the university's start-up garage to prove and create a mock-up model at no cost. Another entrepreneur, Emil Joannou, P.Eng., who created a start-up business called Naroch Networks for designing electronics for entrepreneurs and small businesses, met with Invest Ottawa for business advice. The entrepreneurship team also helped him hire an employee for his business.

Following a successful three-month pilot, the program was officially launched as PEO's Ottawa Chapter Entrepreneurship Program in a meeting on September 30, 2015. The chapter welcomed PEO's then President Thomas Chong, P.Eng., FEC, PEO Registrar Gerard McDonald, P.Eng., Ontario Society of Professional Engineers (OSPE) CEO Sandra Perruzza, OSPE then Vice Chair Michael Monette, P.Eng., and Ottawa Councillor Marianne Wilkinson at the meeting. Then President Chong hailed the program as one that will help shift our economy into high gear again by restoring growth, boosting employment, bringing back Ontario's leadership in high technology, and moving the country away from resource dependency. Councillor Wilkinson praised it as a "lead to win" entrepreneurship program.

The entrepreneurship program team and Ottawa Chapter board were excited with the results of the pilot program and the encouragement and support from the PEO president and Ottawa councillor. Although we enrolled 12 more entrepreneurs in the program, bringing the total number to 19, I received a letter from PEO Eastern Region Councillor David Brown, P.Eng., BDS, C.E.T., on October 27, 2015 stating that PEO's Regional Councillors Committee unanimously voted not to support the program since it did not fit within the regulatory mandate of PEO. The entire team was devastated with this outcome. Currently, the entrepreneurship program team is working with OSPE to create a joint entrepreneurship program.

As volunteers, we are spending our personal time, effort and sometimes money to make this program grow not only in Ottawa, but across Ontario to bring economic prosperity to Canada. The Ottawa Chapter is the largest PEO chapter with over 8500 licensed engineers, many of whom work in technical fields. We believe Ottawa is a technology hub teeming with talented professionals. Although we are receiving interest from Ottawa engineers to join the program, we may not be in a position to enroll many more entrepreneurs until we receive required funding and office support for the program. OSPE and the Ottawa Chapter are working together to address these issues. In the meantime, we will carry on with whatever funding and support we do receive for the program, although it may not be as large as we thought initially.

This is a long overdue program that greatly benefits our engineering community. Engineers can become entrepreneurs to innovate and create new products, launch new engineering businesses, create jobs and bring economic prosperity to the community, Ontario and Canada. We will do whatever we can to make this program a national success.

I sincerely thank our team members: Ray Barton, P.Eng., Guy Boone, P.Eng., Joe Podrebarac, P.Eng., David Mann, P.Eng., Sucha Mann, P.Eng., FEC, Gareth Wood, P.Eng., Sushanth Sankaran, P.Eng., and Lance Jelinski. Σ

**Tapan Das, PhD, P.Eng., is a director of PEO's Ottawa Chapter.**

# CAREERS & CLASSIFIED

For information on career and classified advertising, contact:

Beth Kukkonen  
Dovetail Communications  
905-886-6640, ext. 306  
fax: 905-886-6615  
bkukkonen@dvtail.com

## – FOR SALE –

Well Established  
Engineering Firm

Building Science, Structural  
& Civil Engineering.

Direct your inquiries to the  
Principal between  
11 a.m. & 3 p.m., Monday -  
Friday at 416-540-1779.

## DIRECT DEPOSIT = A GREENER PLANET



Now that the Canadian government has phased out paper cheques, we encourage all **PEO volunteers and vendors** to join our **electronic funds transfer** program.

Having expense reimbursements and invoice payments directly deposited is a fast, convenient, secure—and green—way to receive funds from PEO.

Signup is easy. All we require is a void cheque.

For more information, email [apfinancialservices@peo.on.ca](mailto:apfinancialservices@peo.on.ca)

## AD INDEX

Bluebeam Software <a href="http://www.bluebeam.com">www.bluebeam.com</a>	p. 17
Chrysler Canada <a href="http://www.chrysler.ca">www.chrysler.ca</a>	p. 11
EPIC <a href="http://www.epictraining.ca">www.epictraining.ca</a>	p. 9
Manulife Financial <a href="http://www.manulife.ca">www.manulife.ca</a>	p. 13, 43
Mirvish Productions <a href="http://www.mirvishproductions.com">www.mirvishproductions.com</a>	p. 15
Ontario Society of Professional Engineers <a href="http://www.ospe.on.ca">www.ospe.on.ca</a>	p. 12
TD Meloche Monnex <a href="http://www.melochemonnex.com">www.melochemonnex.com</a>	p. 21, 44
Trademark Safety & Rescue Ltd. <a href="http://trademarksafetyandrescue.com">trademarksafetyandrescue.com</a>	p. 14
University of Waterloo <a href="http://uwaterloo.ca">uwaterloo.ca</a>	p. 2, 19

## WHOM TO CONTACT AT PEO

Association staff can provide information about PEO. For general inquiries, simply phone us at 416-224-1100 or 800-339-3716. Or, direct dial 416-840-EXT using the extensions below.

### EXECUTIVE

Registrar  
Gerard McDonald, P.Eng., MBA 1102  
Senior executive assistant  
Becky St. Jean 1104

### LICENSING AND REGISTRATION

Deputy registrar, licensing and registration  
Michael Price, P.Eng., MBA, FEC 1060  
Manager, admissions  
Moody Farag, P.Eng. 1055  
Manager, registration  
Brian MacEwen, P.Eng. 1056  
Manager, licensure  
Pauline Lebel, P.Eng. 1049  
Supervisor, examinations  
Anna Carinci Lio 1095

### REGULATORY COMPLIANCE

Deputy registrar, regulatory compliance  
Linda Latham, P.Eng. 1076  
Manager, enforcement  
Cliff Knox, P.Eng., MBA 1074  
Manager, complaints and investigations  
Ken Slack, P.Eng. 1118

### TRIBUNALS AND REGULATORY AFFAIRS

Deputy registrar, tribunals and regulatory affairs  
Johnny Zuccon, P.Eng., FEC 1081  
Director, policy and professional affairs  
Bernard Ennis, P.Eng. 1079  
Manager, tribunals  
Salvatore Guerriero, P.Eng., LLM 1080  
Manager, policy  
Jordan Max 1065  
Manager, standards and practice  
José Vera, P.Eng., MEPP 647-259-2268

### COMMUNICATIONS

Director, communications  
David Smith 1061  
Editor, *Engineering Dimensions*  
Jennifer Coombes (on leave) 1062  
Manager, communications  
Duff McCutcheon 1068

### CORPORATE SERVICES

Chief administrative officer  
Scott Clark, B.Comm, LLB, FEC (Hon) 1126  
Manager, government liaison programs  
Jeannette Chau, P.Eng., MBA 647-259-2262

Manager, engineering intern programs  
Tracey Caruana, P.Eng. 1107  
Director, people development  
Fern Gonçalves, CHRL 1106  
Committee coordinator  
Viktoria Aleksandrova 416-224-1100, ext. 1207  
Recognition coordinator  
Rob Dmochewicz, MPR 416-224-1100, ext. 1210  
Human resources specialist  
Olivera Tosic, CHRP 416-224-1100, ext. 1114  
Manager, secretariat  
Ralph Martin 1115  
Manager, chapters  
Matthew Ng, P.Eng., MBA 1117

### FINANCE

Director, finance  
Chetan Mehta, MS, MBA 1084  
Manager, financial services and procurement  
Peter Cowherd, CPA, CMA 1090

### INFORMATION TECHNOLOGY

Director, information technology  
Zico Sarmento 1109  
Senior IT project manager  
Paula Habas 1108

# PROFESSIONAL DIRECTORY

Your business card here will reach 80,000 professional engineers. Contact: Beth Kukkonen, Dovetail Communications, 905-886-6640, ext. 306, fax: 905-886-6615, bkukkonen@dvtail.com

DEADLINE FOR JANUARY/FEBRUARY 2017 IS NOVEMBER 21, 2016.  
DEADLINE FOR MARCH/APRIL 2017 IS JANUARY 23, 2017.

## SteelBuildingExperts

### Using Manufacturer Designed Building Components?

Project Support for Steel Buildings, Cold-formed, Deck, Diaphragm, Composite Cladding, General Review

steelbuildingexperts.ca • 905 617-2729

### Accused of Professional Misconduct?



We can help you protect your reputation. James Lane has acted for numerous engineers in defending negligence claims and professional conduct charges.

BERSENAS  
JACOBSEN  
CHQUEST  
THOMSON  
BLACKBURN  
LLP  
BARRISTERS, SOLICITORS

416-982-3807  
www.lexcanada.com  
jlane@lexcanada.com

### APPLIED TECHNICAL TRAINING

- ELECTRICAL SMART GRID POWER SYSTEM TECHNOLOGIES
- SPECIALIZED TECHNICAL TRAINING OR LECTURE SERIES
- WE BOTH DEVELOP & DELIVER ANY SPECIALIZED TRAINING AS REQUIRED
- PROTECTION & CONTROL AND INSTRUMENTATION/METERING/SCADA SYSTEMS
- ONSITE CLASSROOM OR WEB BASED AND E-LEARNING



Patrick Van Brunt B.Sc., P. Eng.  
Program Manager  
Ontario, Canada  
Phone: 705 435 8814  
Cell: (416) 451-3414

Website: [www.pandftraining.com](http://www.pandftraining.com)  
Email: [pat.vanbrunt@symnetico.ca](mailto:pat.vanbrunt@symnetico.ca)

\*ALL TRAINING/LECTURE SERIES AVAILABLE UPON REQUEST\*

## AHYDTECH Geomorphic Ltd.



Advanced hydrology hydraulic geomorphology  
Fluvial Geomorphology, Water Resources  
& Coastal Engineering

Natural Channel Design, Channel Restoration, 1D & 2D Hydraulic Modeling, Hydrologic Modeling, Stormwater Management, Seawall Design, Flooding and Erosion Hazard, Surface Water Quality Analysis & Monitoring

22 Zecca Drive, Guelph, ON, N1L 1T1, Phone: 519-400-0264  
Fax: 519-341-7109, Email: bahar@ahydtech.ca

K.H.

# DAVIS

ENGINEERING CONSULTANTS LTD

structural | houses | small projects

WE'RE  
SPECIALISTS  
IN RESIDENTIAL  
PROJECTS.

416 489 1228

WWW.KHDAVIS.COM

Sound Analysis

Sound Experience

Sound Results

Sound Solutions to  
Acoustical Challenges

VALCOUSTICS  
Canada Ltd.

Consulting Acoustical Engineers

Architectural and Environmental  
Acoustics/Vibration

T: 905 764 5223 F: 905 764 6813

www.valcoustics.com solutions@valcoustics.com

### Experts in Measurement, Analysis & Control



ACOUSTICS



NOISE



VIBRATION



905-826-4546  
answers@hgcengineering.com  
www.hgcengineering.com

## Process and Environmental Controls

- Oil-in-water monitors
- Level Controls
- Leak Alarms
- Gas Detection



100% Canadian Designed and Manufactured [www.arjayeng.com](http://www.arjayeng.com)

Concrete Floor  
Contractors Association

Prequalify CFCA members because  
Safety, Quality, and Integrity matter!

www.concretefloors.ca Tel: (905) 582-9825

## Terraprobe since 1977

Consulting Geotechnical & Environmental Engineering  
Construction Materials Inspection & Testing

subsurface investigations, foundations, tunnels, erosion, slope stability studies,  
Phase 1 & 2 environmental site assessments, contamination studies,  
ground water availability, hydrogeology, septic tile bed design, pavements,  
soil, asphalt, concrete, steel, roofing, shoring design, retaining wall design

Brampton (905) 796-2650 Barrie (705) 739-8355 Sudbury (705) 670-0460 Stoney Creek (905) 643-7560  
www.terraprobe.ca



JOHN XU P.E., P.Eng.  
BROKER, TOP PRODUCER, PLATINUM CLUB  
約翰徐 (647)996-4222  
WWW.JOHNDXU.COM JOHNDXU@YAHOO.COM

Advertise Your Home In Both English & CHINESE Media : Free Home Evaluation  
HomeLife New World Realty Inc., Brokerage 正直的人品, 凶狠的投資眼光



This building can be used as an independent commercial or residential or office / retail / apartments, located in Bewdley town center, near the public boat launching , restaurants, etc. Lot: 110 ft x 75 ft, 4 bathroom . ASKING ONLY \$360,000

To advertise within  
the Professional  
Directory, contact:

Beth Kukkonen  
bkukkonen@dvtail.com  
905.886.6640, ext 306

## MYTHS SURROUNDING FIRST NATIONS

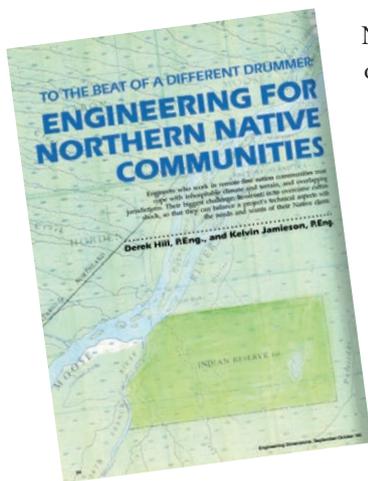
In the May/June 2016 issue, I was disappointed to see the letter from a fellow engineer entitled “Fuel cells at what cost?” (*Engineering Dimensions*, p. 77). As a practising engineer and a member of my governing council for my First Nation, reading this letter in my professional magazine is, to say the least, upsetting, as it is a stark reminder of how deeply-embedded myths surrounding First Nations continue to misguide the profession.

The letter perpetuates several myths, including:

- Taxpayers pay for everything on First Nations;
- The UNDRIP will impede natural resource development;
- Any development involving First Nations will cost development companies millions; and
- First Nations lack the capacity for management and operation.

While it is not my purpose here to provide a history lesson to my profession regarding First Nations in general, the letter contains many fallacies and assumptions about First Nations that are concerning. To obtain factual information on these issues, I would invite my fellow engineer to start by reading the Truth and Reconciliation Commission of Canada report and move on to the history of treaties in general within Ontario.

My purpose here in responding is twofold. The first is to express my deep disappointment that *Engineering Dimensions* would allow such a letter to be printed in the first place. The letter does not directly address the technical merits of the aforementioned article itself but rather presents unsubstantiated statements as though they are fact. The letter may be considered as a propagation of hate speech as defined by the *Canadian Human Rights Act*. The comments can be viewed as vicious, dehumanizing and marginalization against an ethnic population. It is no longer sufficient to hide behind a general disclaimer that “The ideas expressed do not necessarily reflect the opinions and policies of the association...” Propagation of hate speech through any media that allows for it must be held accountable, especially professional publications.



My second purpose is to provide a voice for my fellow First Nations engineering professionals who are currently practising or ones who are considering an engineering career. We come from a number of unique and distinctive First Nations cultures in Ontario with inherent rights and a long and rich history of traditions and language. Yes, there will be individuals with skewed perceptions of the reality of our people but there are professionals who do educate themselves with fact, and we as First Nations professionals have a role in that education.

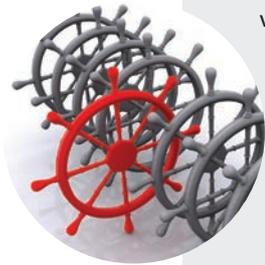
One of my fondest memories still remains the publishing of articles that I wrote for *Engineering Dimensions* in September/October 1992 outlining my work for First Nations communities as an engineer. I would encourage ED to reprint my platform article as it is still relevant today as it was in 1992.

The letter from my fellow engineer illustrates the alarming level of misconceptions that remain in our profession. It is incumbent as professionals to ensure we fully understand the social, historical and human elements of an issue before we allow ourselves to speak on it.

Kelvin Jamieson, P.Eng., Christian Island, ON  
Beausoleil First Nation

## OUR PRIVILEGED SELF-REGULATION

The May/June 2016 issue of *Engineering Dimensions* contains an inaugural address by President George Comrie, P.Eng., FEC, of profound importance to all PEO members who aspire to sustain our self-regulated profession (“What it means to be a self-regulating profession,” p. 3). Self-regulation for Canadian professionals is not guaranteed as recently discovered in British Columbia as errant real estate professionals are now under direct government supervision.



This privilege, granted by permissive provincial legislation, was accompanied by responsible graduate Canadian engineers who, with the Kipling oath, pledged their services in both technical and professional practice to the safety and well-being of society.

President Comrie’s leadership guidance for members strengthens the pursuit of PEO for developing and maintaining excellence in their fields of practice. Such excellence is fostered by initial and sequential examination of member competence in their practice with assurance of continuing education in a world of rapidly changing technological sciences and society objectives.

With dedicated commitment, PEO in plurality with designated officials and committees, accept our “social contract” by executing and updating its key legislated duties with assistance of skilled and trained staff. This includes recognition of the minority membership directly serving the public,

who have statutory regulation. This execution is accompanied by input from a wider swath of the profession, including a geographical representative chapter system and with volunteer-staffed committees supported and guided by managerial staff.

An update of the human resources policy for volunteer qualifications and their longevity on specific advisory committees can also be appropriate as part of social concern for ongoing training and education. By putting our house in order, as called for by President Comrie, we will have an improved position for maintaining public confidence in professional engineering.

President Comrie in the May/June *Engineering Dimensions* has also responsibly called on the provincial government to reconcile their apparent inattention to the long-standing “industrial exception” with the risk it sustains for non-registered persons to practise applied science and engineering without identified measures for public safety. Without such measures, public safety is at risk as evidenced recently with the insufficiently tested Tesla automobile on automatic pilot resulting in death. While corporate responsibility prevails for such failures it is always after the fact, dealing only with compensation as a substitute for preventing injury and death.

Roy H. Fletcher, P.Eng., FEC, Toronto, ON  
Past chair, CED Subcommittee on Key Role and Examinations

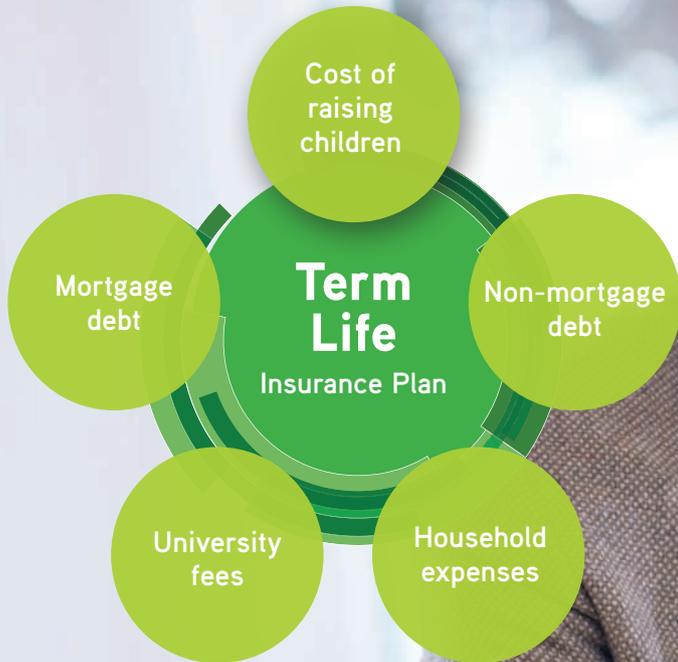
## CORRECTION NOTICE

In “Order of Honour recipients celebrated at gala,” *Engineering Dimensions*, July/August 2016, page 14, we incorrectly stated that Ontario Premier Kathleen Wynne appeared in a video message at the gala. Rather, it was Steve Orsini, secretary of the cabinet and head of the Ontario Public Service, who attended and spoke on behalf of the premier. Deputy Minister of Transportation Stephen Rhodes also attended the gala as a special guest.

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 [naxworthy@peo.on.ca](mailto:naxworthy@peo.on.ca).

# whatif one plan could cover you for life's expenses?



**Up to \$1.5 million in coverage:** The loss of a primary earner can have a major impact on those left behind who may still need to pay for major ongoing expenses. That's why Engineers Canada-sponsored Term Life Insurance Plan was created exclusively for engineers and geoscientists — to help protect those who count on you in more ways than one.

**See how the Engineers Canada-sponsored Term Life Plan can help you.**

1 877 598-2273 | [manulife.com/OSPE](http://manulife.com/OSPE)



Underwritten by The Manufacturers Life Insurance Company. Manulife and the Block Design are trademarks of The Manufacturers Life Insurance Company and are used by it, and by its affiliates under licence. © 2016 The Manufacturers Life Insurance Company. All rights reserved.

**The Manufacturers Life Insurance Company**

**TD Insurance**  
Meloche Monnex

Get more out of your membership.

Get **preferred insurance rates** today!

Take advantage of  
your group privileges:

You could **save \$415\***  
or more when you  
combine your home and  
auto insurance with us.

Because you've earned it.

At TD Insurance we believe your efforts should be recognized. That's why, as a **professional engineer in Ontario**, you have access to the TD Insurance Meloche Monnex program, which offers you preferred insurance rates and highly personalized service, along with additional discounts. **Request a quote and find out how much you could save!**

Our extended business hours make it easy.  
**Monday to Friday: 8 a.m. to 8 p.m. (ET)**  
**Saturday: 9 a.m. to 4 p.m. (ET)**



HOME | AUTO

Ask for your quote today at 1-866-269-1371  
or visit [melochemonnex.com/peo](http://melochemonnex.com/peo)



The TD Insurance Meloche Monnex program is underwritten by SECURITY NATIONAL INSURANCE COMPANY. It is distributed by Meloche Monnex Insurance and Financial Services Inc. in Quebec, by Meloche Monnex Financial Services Inc. in Ontario, and by TD Insurance Direct Agency Inc. in the rest of Canada. Our address: 50 Place Crémazie, Montreal (Quebec) H2P 1B6.

Due to provincial legislation, our auto and recreational vehicle insurance program is not offered in British Columbia, Manitoba or Saskatchewan.

\*Nationally, 90% of all of our clients who belong to a professional or an alumni group (underwritten by SECURITY NATIONAL INSURANCE COMPANY) or an employer group (underwritten by PRIMMUM INSURANCE COMPANY) that have an agreement with us and who insure a home (excluding rentals and condos) and a car on July 31, 2015 saved \$415 when compared to the premiums they would have paid with the same insurer without the preferred insurance rate for groups and the multi-product discount. Savings are not guaranteed and may vary based on the client's profile.

© The TD logo and other TD trade-marks are the property of The Toronto-Dominion Bank.