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SPRING 2015

ELECTION EDITION

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PRINTED IN CANADA

MIX
Paper from responsible sources
FSC® C011825

PEG

VOLUME **6** | NUMBER **1** | **SPRING** 2015

(Print) ISSN **1923-0044**

(Online) ISSN **1923-0052**

Editor **George Lee** ✉ glee@apega.ca

Administrative Assistant **Catherine Hiemstra** ✉ chiemstra@apega.ca

US POSTMASTER: PEG (ISSN 1923-0044) is published quarterly in Spring, Summer, Fall and Winter, by the Association of Professional Engineers and Geoscientists of Alberta, c/o US Agent-Transborder Mail 4708 Caldwell Rd E, Edgewood, WA 98372-9221. $15 of the annual membership dues applies to the yearly subscription of The PEG. Periodicals postage paid at Puyallup, WA, and at additional mailing offices. US POSTMASTER, send address changes to PEG c/o Transborder Mail, PO Box 6016, Federal Way, WA 98063-6016, USA.

The publisher has signed an affiliation agreement with the Canadian Copyright Licensing Agency.

Please return Canadian undeliverables to: APEGA, 1500 Scotia One, 10060 Jasper Ave., Edmonton, AB T5J 4A2. Publications Mail Sales Product Agreement No. 40062712

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APEGA CONTACT INFO

HEAD OFFICE

1500 Scotia One
10060 Jasper Avenue NW
Edmonton AB T5J 4A2
PH 780-426-3990
TOLL FREE 1-800-661-7020
FAX 780-426-1877

www.apega.ca

email@apega.ca

CALGARY OFFICE

2200 Scotia Centre
700 Second Street SW
Calgary AB T2P 2W1
PH 403-262-7714
TOLL FREE 1-888-262-3688
FAX 403-269-2787

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Central Alberta **Sonny Nagra**, *P.Eng.* chair_rd@apega.ca
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Title:	Modern Power System Protective Relaying
Location:	Edmonton, AB
Date:	March 2-4, 2015
PDHs:	21

Environmental

Course Code:	05-0311-2303
Title:	Risk Assessment of Contaminated Sites
Location:	Calgary, AB
Date:	March 2-4, 2015
PDHs:	21

Mechanical & Industrial

Course Code:	05-0312-2303
Title:	Process Design and Engineering of Gas Processing Plant and Equipment
Location:	Edmonton, AB
Date:	March 9-12, 2015
PDHs:	28

Mechanical & Industrial

Course Code:	05-0313-2303
Title:	Design, Operation and Maintenance of HVAC Systems
Location:	Edmonton, AB
Date:	March 10-13 2015
PDHs:	28

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To view all of our upcoming courses, please visit: www.epictraining.ca/peg

Shaping the Future of Our Professions

BY **CONNIE PARENTEAU,** *P.ENG., FEC, FGC (HON.)*
APEGA President-Elect

As you receive this edition of *The PEG*, the one-month process to elect a new APEGA Council is imminent or just underway. Actually, "new APEGA Council" is something of a misnomer. Never are your Council and Executive completely replaced through the annual election. Rather, the election ensures that the governing body of APEGA is in a continual state of replenishment.

This planned overlap brings a balance of fresh ideas and sound experience to decision making, and it's a foundation of good governance. That's particularly important right now, as APEGA embarks on the process of creating the *APEGA Strategic Plan 2017-2019*. This is an exercise, really, in shaping the future — even though the future is something none of us can actually see.

A great example is the path I'm taking to your presidency. This is my second column in *The PEG*. If things had unfolded according to plan, you wouldn't have been reading my words until the summer edition arrived at your home or office.

However, as you are all aware, I was unexpectedly, as President-Elect, called upon to assume the responsibilities of the presidency. I cannot deny this was initially somewhat intimidating. That being said, the support I've received has been amazing, from within APEGA and beyond. Members, APEGA Council, the APEGA CEO and staff, the public, MLAs, MPs, municipal leaders — I've received encouraging words and input from many quarters, and I can't say thank you enough.

About four months have passed and I now have some perspective. Reacting to this unforeseen circumstance has allowed me to develop my vision, learn more than I had known about the amazing people who make up our membership and regulatory community, and immerse myself in my new role. I was empowered, in other words, to start the conversation early about my presidency and how it will influence the future of APEGA.

I'm excited about my upcoming presidency and what Members and Council can achieve together. Because of what I've learned during this unique transition, I can say with confidence that being your President will be a great honour and an extraordinary privilege.

> "I'm excited about my upcoming presidency and what Members and Council can achieve together… I can say with confidence that being your President will be a great honour and an extraordinary privilege"

One of the major roles of your next Executive and Council will be strategic planning. The current plan ends in 2016, but we're not waiting until then to get started. In fact, the groundwork began last year and continues this year, and we'll complete the plan in early 2016.

I can't tell you yet what the new strategic plan will look like. And trying to foresee what the future holds is no easy task. Former U.S. Secretary of Defense Donald Rumsfeld once spoke about known knowns, unknown knowns and unknown unknowns. He was criticized for his semantical choices, but what he said does contain some insight when applied to our planning process.

To paraphrase Mr. Rumsfeld, there are things we know, things we more or less know, and things we won't know at all until they happen. What we're doing is, to the best of our ability, shaping the future of APEGA and our role in Alberta, with the interests of the public, government and Members in mind. We can assume some constants about the future, but a good strategic plan has to be ready for the unexpected.

I'm a Six Sigma-trained analyst, a Black Belt, so I bring that discipline to this process. Although Six Sigma encompasses a wide variety of techniques and tools, it is very much about the study of variation. To do this, you look to reduce the variation experienced by identifying the defects that result in failures. Reducing defects through root cause analysis offers us learnings.

Can you take those learnings and make improvements to your own systems? Can you prevent failures from repeating? Wouldn't it be helpful if we had some real-life experiences in other jurisdictions to help guide us?

As it turns out, we do. Three of our sister associations have dealt with major failures that have shaken the public's confidence

President-Elect's Notebook

in Professional Engineering and, by extension, all professional, business and government communities.

In Quebec, Ordre des ingénieurs du Québec (OIQ) has had to adjust to revelations of corruption unearthed by the Charbonneau Commission. Professional Engineers Ontario (PEO) is re-examining the way it regulates in the wake of the report of the Elliot Lake Inquiry on the deadly collapse of the Algo Centre Mall. And in B.C., the failure of a tailings pond and the resulting spill at the Mount Polley Mine are raising questions about the pond's design — an issue of major concern to APEGBC.

For our recent strategy sessions, representatives from OIQ and PEO interacted with a cross-section of APEGA management staff to help APEGA turn their lessons learned into our lessons learned. The associations thanked us for the opportunity; we were the only other self-regulating organization to share and solicit information in this way, and they deeply appreciated our approach.

They learned a lot about the way APEGA regulates, too; these were dialogues, not speeches. I think this sharing of information will help all the parties involved and, ultimately, the public in each jurisdiction. It's a great example of the national leadership APEGA shows in the regulation of Professional Engineering and Geoscience, as we and our sister associations work towards better alignment of our processes.

Also, our strategic planning sessions included a deceivingly simple pair of questions: is our number one role to regulate the practices of Professional Engineering and Geoscience? Or is it to regulate the individuals who earn and maintain the privilege of their designations? I'm not sure there's a definitive answer, but simply posing these questions is a great way to examine the nature of our work.

Now, I've said quite a bit in this column about planning. But it's important to clarify that strategic planning does not affect most of the day-to-day business of the Association. It informs operations, resulting in some changed priorities. But business planning is always the responsibility of the CEO, and our regulatory functions and most of the services we provide are not going to change.

This is something that became clear to your Council over the last year. We had too many committees. Many of these committees had operational roles. Now, we have a small number of committees, and their work is strategic.

Members run for election to APEGA Council in the hopes of finding a meaningful way to give back and make a difference. That's certainly why I'm here. It's why I'm excited about the work we're doing on the next strategic plan. And it's why I'm thrilled to be your President-Elect (and soon-to-be President).

Questions or comments?
presidentelect@apega.ca.

Rethinking the Value of the Professions

BY **MARK FLINT,** *P.ENG.*
APEGA Chief Executive Officer

In his inauguration address in 1961, John F. Kennedy said: "Ask not what your country can do for you, ask what you can do for your country." These words resonated more than five decades ago and they continue to do so today. As Canadians we tend to gaze southwards, admiring the Americans for whatever they have; in the case of JFK, that was a well-defined vision of selfless nation-building.

Last year, one of our own leaders espoused a similar vision during her tenure as the 2014 Massey Lecturer. The Right Honourable Adrienne Clarkson, a former Governor General of Canada, recounted the history of individuals giving of themselves to build our great nation. "We are most fully human, most truly ourselves, most authentically individual, when we commit to the community," Ms. Clarkson said. "It is in the mirror of our community — the street, the neighbourhood, the town, the country — that we find our best selves."

So yes, we Canadians have a leader — and I am sure there are many others — willing to let us know that we create something bigger than ourselves when we work together and in doing so develop our own individuality. As I listened to Ms. Clarkson's story, it occurred to me that this was essentially the premise upon which self-regulation was founded. Let me expand.

Last year, APEGA Registrar Carol Moen, P.Eng., and I were involved in an interesting case. One of our Members was questioning the value he derived from belonging to APEGA. He was unhappy with the requirement to substantiate his ongoing professional competence and demanded to know what he was getting in return for his dues.

I am quite sure that many of you have had similar thoughts and posed similar questions. In fact, in one of my first *PEG* articles, I offered my thoughts on this very issue. Perhaps now, as I complete three years as your CEO, I have a less facile and more nuanced appreciation for the issue.

Perhaps I will start with a provocative stance: Do engineers and geoscientists need to be regulated? After all, anyone can take scientific principles and apply them to create, design, build and maintain stuff. Right?

How much education does anyone really need? I mean, every time I drive across a bridge, ascend a high-rise building, or witness the technological miracle that is Fort McMurray, I say to myself: yeah, we don't need to worry about this stuff. And I don't. But why not? Well, the answer is relatively straightforward: because APEGA is made up of competent professionals.

Granted, not every jurisdiction in the world does things the way we do them here in Alberta, or Canada for that matter. And yet, for the most part, buildings elsewhere are not falling down and passenger planes are not dropping from the sky. (Well, yes and no. I realize there are exceptions, of course, and I don't mean to minimize these tragedies.)

Amazing feats of engineering are evident around the world in places that are regulated differently. Nevertheless, here in Canada we made a conscious decision almost 100 years ago to create our own system. A system demonstrating our belief that we were the people who had the most accurate knowledge and skills to create things that would be used safely by others. A system demonstrating that we were committed to the people in our communities and that we would not let them down. We would support them with clean water, safe infrastructure, electricity and other utilities.

We pledged that we would ensure public safety as fiduciaries of technical expertise. By that I mean that we have been entrusted to use our technical expertise on behalf of the public interest. We evolved a system that ensures that within Canada, engineering graduates have a common accreditation program that produces exceptionally well-grounded scientists who apply their education to serve the public. The world of geoscience education is more complex for many reasons, but the rationale of serving the public is still germane.

All of this is truly an outstanding approach to ensuring the responsible application of science. However, this system comes at a price. Here it is, you say. Here comes the punchline. Now is when he justifies the cost of our dues. Well, all right then.

APEGA currently employs a highly dedicated complement of 120 employees. Obviously that does cost money. However, we also "employ" about 1,200 active volunteers, some of whom volunteer 10 to 20 hours of their time a week — for free! By a conservative estimate, our volunteers do the work of 50 full-time employees, or 40 per cent or our workforce added to the regulatory and Member services work we do.

CEO's Message

Did I already say that we don't pay these people? And by the way, they are some of the best and brightest in our professions. Some of them have been doing this work for a long time (more than 30 years) and could really use some fellow professionals stepping forward to spell them off.

Some of you might say that perhaps the provincial government could adequately provide a regulatory framework.

That might be true. But would that model be more effective or efficient? I am uncertain.

It might cost less if the government was the regulator, I suppose, if the government could get 50 people to work for it for free. Some say that we could simply follow the U.S. model and let industry "regulate" the professions through the business model. There are lots of examples of some outstanding companies that have achieved amazing things. But none of this is really my point.

Here in Alberta (and Canada) we have decided that we want the right to self-determination. Our professions want to set our own standards, because no one knows our professions better than we do. I too believe this. While our system is not perfect, it is very good; and we are striving to make it even better.

What would be really useful would be not just to harness the power of a small full-time staff and 1,200 volunteers, but to harness our whole membership. Imagine what we could accomplish with a couple of hours per month of volunteer effort from each Professional Member?

We currently have a very ambitious agenda of transformation. We want to make APEGA great organization. We want to be a more efficient licenser and a more effective upholder of our professions. It is a significant task. But we decided 100 years ago that we should seize and maintain this responsibility on behalf of those who rely upon us, so let's not stop now.

In these uncertain economic times, it is easy to see the potential short-term negatives. But we should not lose sight of the long term. As Ms. Clarkson said, Canada was built by the individual efforts of great people faced with adversity and uncertainty. As we pay the annual fee that perpetuates our right to decide how we as professions will conduct ourselves, perhaps we should rethink what we get in return.

Furthermore, if you have not yet donated some of your time to your professions, I would ask you to think about the next few years and what you can give. You can support your peers directly in this way, and you can also gain a greater appreciation of what your peers are doing as professionals.

I accept that for some of you this might be the furthest thing from your minds. However, I urge you to reflect on this: self-regulation is a privilege that we asked for and that we pay for. On behalf of the professions, I would sincerely appreciate your assistance — even if for only a few hours.

As the Right Honourable Adrienne Clarkson implores us to commit to our country, so too should we commit to another great community: the community of the Professions of Engineering and Geoscience.

It continues to be a privilege to serve the professions as your Chief Executive. Thank you.

Questions or comments?
ceo@apega.ca

VOTING DATES

Poll Opens — Monday, March 2, 9 a.m.
Poll Closes — Saturday, April 4, 12 noon

CANDIDATE VIDEOS

apega.ca — available now for viewing

MEET YOUR CANDIDATES

MAKE YOUR DECISION

VOTE

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Frequently Asked Questions

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2015 COUNCIL ELECTION — FREQUENTLY ASKED QUESTIONS

I am an APEGA Member. Am I eligible to vote?

Most APEGA Members are eligible to vote in the APEGA Council Election. But it does depend on the type of membership you have.

If you are an Honorary Life Member, a Life Member, a Professional Member (P.Eng., P.Geo., P.Geol., P.Geoph.) or a Professional Licensee, you **can** vote.

If you are a Foreign Licensee, a Provisional Licensee, a Member-In-Training, an Applicant, an Exam Candidate, a Student Member, an ASAP Student Member or an Honorary Member, you **cannot** vote.

I'm eligible. How do I vote?

- Click on the voting icon at apega.ca. This will take you to the Member Self-Service Centre
- Once you've logged into Member Self-Service Centre, you'll see an election link. This link will take you to the ballot page
- From the ballot page in the Member Self-Service Centre, you can learn about the candidates and cast your votes

When will I be able to vote?

The poll and voting website open on
Monday, March 2, at 9 a.m.

and close on
Saturday, April 4, at 12 noon

I'm unable to log in to the Member Self-Service Centre. What should I do?

Please contact us, either by

Phone — 780-426-3990 or toll-free at 1-800-661-7020 (North America)

While the poll is open, these lines will be operational 24/7 for election questions

OR

Email — elections@apega.ca

In your email, be sure to include your **name, Member number** and **reason for contacting us**.

I want to vote — but not electronically. How do I cast my ballot?

We will mail you election materials in paper form.

Please **contact us as soon as possible, either by**

Phone — 780-426-3990 or toll-free at 1-800-661-7020 (North America)

While the poll is open, these lines will be operational 24/7 for election questions

OR

Email — elections@apega.ca

In your email, be sure to include your **name, Member number** and **reason for contacting us**.

Your completed paper ballots must be received by the Edmonton office no later than **4:30 p.m. on April 2.**

How do I learn about the candidates?

- Candidates' statements appear in this edition of *The PEG,* starting on page 12
- Videos and statements available online now
  - on the 2015 election page at apega.ca
  - and in the Member Self-Service Centre, accessible via apega.ca

I voted but have since changed my mind about how I voted. Can I change my vote?

No. As in any election, once your ballot is cast, your vote is final and will be counted.

Will anyone at APEGA know how I voted?

No. We will know whether you voted, but not who you voted for.

Will I be reminded to vote?

We will mail you a postcard reminder at the start of the 2015 election and send email reminders weekly during the election period until you vote. After you vote, you will receive a thank-you email, an email announcement of the poll closure, and an email announcement of the new Council.

What about Canada's Anti-Spam Legislation (CASL)?

As the regulator of Professional Engineering and Geoscience, we have a legal obligation to contact you regarding the election and your right to vote. If you have opted-out of receiving email notifications from APEGA, you be contacted by regular post.

QUESTIONS, COMMENTS, CONCERNS?

Phone — 780-426-3990 or toll-free at 1-800-661-7020 (North America)

While the poll is open, these lines will be operational 24/7 for election questions

Email — elections@apega.ca

NOMINEES FOR APEGA 2015 ELECTION

2015 PRESIDENT
Elected President-Elect in 2014

Connie G. Parenteau, *P.Eng., FEC, FGC (Hon.)*

2015 CANDIDATES
PRESIDENT-ELECT/VICE-PRESIDENT

Nima Dorjee, *P.Eng.*
Consultant
ENGIT Consulting Inc

Mary Ann Byrd, *P.Eng., FEC, FGC (Hon.)*
Head/Real Property
Defence R&D Canada
Suffield Research Centre

Steve E. Hrudey, *P.Eng., PhD, FCAE*
Professor Emeritus
University of Alberta

2015 CANDIDATES
FOR COUNCIL

Anil Mehrotra, *P.Eng., PhD, FEC, FGC (Hon.)*
Professor in Chemical & Petroleum Engineering
Schulich School of Engineering
University of Calgary

Gobind Khiani, *P.Eng.*
Director 1 Piping Systems & Material Engineering
Fluor Canada Ltd

Jennifer Enns, *P.Eng.*
Manager Engineering & Energy Services
Infrastructure & Information Services
The City of Calgary

John Rhind, *P.Geol.*
VP Oilsands
Shell Canada Energy

Art Washuta, *P.Eng.*
Senior Vice President – Operations
OPUS Stewart Weir

Jeff DiBattista, *P.Eng., PhD, MBA*
Principal
DIALOG

Dabir Naqvi, *P.Eng.*
Director
Lloydminster Chamber of Commerce

Nominations Are Closed

NOTICE OF ANNUAL GENERAL MEETING

In accordance with Bylaw 16(2) of *The Engineering and Geoscience Professions Act*, official notice of the Annual General Meeting is hereby given.

Friday, April 24, 2015 | 2 p.m.
TELUS Convention Centre
Calgary, Alberta

Attendance Qualifies for CPD Credit

Candidate Statements

Which candidates in the 2015 APEGA Election are receiving your vote? To help you make up your mind, APEGA had each nominee submit a statement, and the statements are published on the following pages.

Note that the first statement is from someone who's technically not running for office. The President-Elect earned her position in last year's election.

You're allowed to vote for one candidate for President-Elect/Vice-President and up to four candidates for Council. You **do not** have to cast all of the votes available to you.

POLL OPENS Monday, March 2, 9 a.m.

POLL CLOSES Saturday, April 4, 12 noon

2015 PRESIDENT (ELECTED PRESIDENT-ELECT IN 2014) Connie G. Parenteau, P.Eng., FEC, FGC (Hon.)

Connie Parenteau, P.Eng., was raised and educated in Edmonton. She graduated from the University of Alberta in 1980 with a B.Sc. in electrical engineering.

Serving Members as APEGA President will be Connie's greatest honour and her most extraordinary privilege.

She has always believed our professions improve the quality of everyday life in Alberta and around the world. Our professions value public safety, societal well-being and the environment. Our professions are the most trusted by the general public because we care!

In her upcoming term as APEGA President, Connie will focus on two priorities.

The first priority is the review and revision of *The Engineering and Geoscience Professions Act*. Comprehensive engagement with various stakeholders will be needed to ensure choices made will enhance the self-regulation of our professions and fulfill our social responsibilities to the public.

Her second priority is the development of the 2017 strategic plan. The existing strategic plan finishes at the end of 2016, and a new 2017 strategic plan must be completed before the spring of 2016 to ensure any new initiatives for 2017 are identified well in advance. Connie believes APEGA should focus on becoming a stronger regulator while enhancing membership engagement and recognition. She believes a balanced approach is needed and can be established.

Connie is currently serving APEGA as President-Elect. During her term as President-Elect, she has been amazed by how many APEGA Members volunteer their time. She sincerely appreciates each and every Member who volunteers for the many events and roles. Without volunteers, much of the work APEGA does would not be possible. Thank you!

She has also been actively involved in Council's governance renewal, which streamlined Council's committee structure. She has led a Council working group that considered the need to have ethics regularly refreshed and understood in the minds of Members to ensure public safety.

She has really enjoyed officiating in APEGA Member induction, volunteer recognition and other Member awards events. Working with APEGA Members and other stakeholders has been a highlight for her.

Connie is known for her passion for getting things done. She has a keen interest in understanding people's issues, goals, fears and dreams. She thrives in dynamic work environments, especially those where she is always learning.

She is a strong advocate of the importance of being involved in professional and community affairs. She has been active in non-profit organizations related to the performing arts and literacy and volunteered at Edmonton's Food Bank and Meals on Wheels.

In her 33-year career with TELUS Communications, Connie has held a variety of technical, managerial and leadership positions. Connie acted as a Responsible Member for the TELUS Corporation Permit to Practice for more than 15 years. She worked on key initiatives such as TELUS TV and Next Generation Networks. She was also a manager of the TELUS Graduate Engineer Program and continues to mentor young engineers.

Connie is a very proud Member of APEGA. In 1993, she was the recipient of the APEGA Early Accomplishment Summit Award. She was granted the Engineers Canada Fellowship in 2009 and the Geoscientists Canada Fellowship (Honorary) in 2013.

Connie and her husband, Peter Lyons, are proud parents and live in St. Albert. She enjoys time with family and friends, travelling, golfing, sporting events, music, theatre and entertaining.

APEGA Activities

- President-Elect (2014-present)
- Vice-President (2013-2014)
- Member, Executive Committee, Compensation (2013–2015)
- Member, Ethics Working Group (2014)
- Member, Finance, Public Issues, Women in APEGA (2013-2014)
- Member, Nominating Committee (2004–2006; 2000–2002)
- Member, Emerging Disciplines Task Force (1998–2000)
- Member, Corporate Regulation Task Force (1997)
- Member, Discipline Committee (1995–1997)
- APEGA Liaison, Consulting Engineers of Alberta (1998-1999)
- Second Vice-President, Council (1997–1999)
- Member, Council (1994–1997)
- Member (1980–present)

Affiliations, Corporate or Community Service

- President, APEGA Education Foundation (2005-2006)
- Chair, Camp 6 — Edmonton, Corporation of the Seven Wardens (2002–2011)
- Alternate Warden, National Camp, Corporation of the Seven Wardens (2005–present)
- Guest Speaker, Canadian Centre for Women in Science, Engineering, Trades and Technology Workshop (2012–2014)
- Role Model, Women in Scholarship, Engineering, Science & Technology (WISEST) (1991–present)

FOR PRESIDENT-ELECT/VICE-PRESIDENT Nima Dorjee, P.Eng.

Nima Dorjee, P.Eng., was born in a Tibetan refugee settlement in India. Nima has called Calgary home since 1981. He graduated with a bachelor of science degree in chemical engineering from the University of Calgary in 1992. While attending the University of Calgary in 1989, he was elected President of the 18,000-member students' union.

Upon graduation, Nima founded EngIT Engineering Services, which specialized in providing E.I.T.s to employers for a short-term basis. In 1995, he joined the Faculty of Engineering at the University of Calgary. Under his leadership, the engineering internship program became the largest of its kind in Canada. In 2008, he was recognized with the Schulich School of Engineering's Champion Award.

The YMCA recognized Nima's involvement in human rights by awarding him the Canada Peace Medal in 1997, and in 2007, he received the Calgary Freedom of Expression Award.

Since 2008, Nima has devoted his time to projects related to the Dalai Lama's work on human values. This included working at the private office of the Dalai Lama in India. Since 2011, Nima has served as the President of Project Tibet Society, which is responsible for the resettlement of 1,000 Tibetan refugees from northern India to Canada.

Nima and his wife of 24 years, Dr. Tsering Dorjee, have two daughters.

APEGA Activities

- Member, Investigative Committee (2012–present)
- Member, Nomination Committee (2011-2012; 2004)
- Member, Licensure Task Force (2001–2003)
- Member, Council (2000–2003)
- Member (1992–present)

Affiliations, Corporate or Community Service

- Board Member, Calgary Catholic Immigration Society
- Co-chair, International Tibet Support Network
- Chair, Engineering Alumni Chapter, University of Calgary
- Member, Task Force on Racial and Cultural Diversity, City of Calgary
- President, Students' Union, University of Calgary
- Member, Board of Governors, University of Calgary

Personal Statement

With more than 75,000 Members, APEGA is the largest professional association in Alberta. We have been entrusted with the privilege of self-regulation and with this comes great responsibility. First and foremost is our responsibility to maintain the public's trust through the licensing of competent and ethical Professional Engineers and Geoscientists.

In today's environment, it is conceivable for a project to have the entirety of its engineering and design work completed overseas (outside of APEGA's regulatory authority) and only to have the final work assembled in Alberta. As a result, one of the most important issues facing APEGA today is the challenge of regulating the engineering profession in an era of outsourcing and offshoring.

I believe that the intent of *The Engineering and Geoscience Professions Act* is to protect and ensure public safety in Alberta. Our Members are best served and the public interest is best protected when APEGA regulates the professions effectively.

We must find the right balance between adapting to changes in the global economy and APEGA's duty to uphold professional and ethical standards to ensure public safety in Alberta.

APEGA Members work on some of the most complex engineering and geoscience projects around the world. They provide technical solutions to some of the most challenging problems society faces. We have a duty to participate in the public debate on the issues that involve our professions, and to inform the public and elected officials of options so that they can make the right decisions to serve Alberta's interests.

I believe APEGA must provide the forum in which our Members — with their professional and technical expertise — can be heard and engage in discussions with the public to better serve our communities and our province.

Our professions' impact on Alberta and our province's economy is significant, and we must not be shy in advancing the interests of our Members and professions with government.

We must also be mindful of the enormous trust society has placed on us. We must not be shy in showcasing our contributions and demonstrating Professional Engineering and Geoscience as noble professions and pursuits.

APEGA has a team of incredible staff that manages its administration. It is the duty of Council to provide the direction that implements the balance between regulatory requirements and Member services.

I look forward to engaging you in discussions on these and other matters that concern our Association. Please contact me at nd@engit.ca.

FOR PRESIDENT-ELECT/VICE-PRESIDENT Mary Ann Byrd, P.Eng., FEC, FGC (Hon.)

Mary Ann Byrd, P.Eng., was born and educated in the U.S., graduating with a bachelor of science degree with distinction in chemical engineering from North Carolina State University in 1984. Mary Ann immigrated to Alberta shortly after graduation, having studied for one year as an international student at the University of Alberta in an exchange program. A believer in lifelong learning, she earned a Project Management Professional designation from Mount Royal in 2004 and is currently working towards an International BOMI Facilities Management Administrator designation.

Mary Ann worked in academic research at the University of Alberta after graduation, then in manufacturing at Catalyst Recovery and Methanex Corporation after moving to Medicine Hat. She spent five years at Quinn Contracting Ltd., and progressed to being the Engineering Manager and the Permit to Practice Responsible Member before becoming General Manager of S&EC Ltd., an engineering consulting firm, for three years. Mary Ann has been with Defence Research and Development at the Suffield Research Centre since 2003, holding increasing technical and leadership roles in maintenance and facilities, as well as infrastructure and construction. She is currently head of real property and the Suffield liaison to the Department of National Defence for real property, maintenance and facilities. Her broad experience has provided a wide-ranging perspective on how the professions work and are impacted by APEGA.

Mary Ann has been an active Member of APEGA, receiving her 15-year service award in 2014 and having volunteered at the branch, committee and Council levels, including several leadership positions as Chair. She was named Mentor of the Millennium in 2000 by the Alberta Women's Science Network. Being an active participant in APEGA has allowed her the opportunity to see the responsibilities and contributions of Professional Engineers and Geoscientists in action.

Mary Ann believes APEGA is at an inflection point in its history. She would work broadly to engage Members at all levels to understand and support one of the most important initiatives APEGA has undertaken in recent decades — updating *The Engineering and Geoscience and Professions Act*. The way Members practise Professional Engineering and Geoscience has changed in the past 30 years; the legislation is due for a comprehensive review. Member engagement with this initiative will demonstrate to the government and the general public that APEGA Members take their responsibility to protect the public seriously and with due diligence. It will promote confidence in Members' ability to self-regulate in a responsible manner.

Mary Ann and her husband, Gary Soucey, live in Medicine Hat and are the proud parents of four grown children. She enjoys spending time with family, reading, travelling, quilting and taking part in outdoor activities of all kinds.

APEGA Activities

- Chair, Women in APEGA Committee (2014)
- Vice-Chair, Past Chair and Sub-Committee Lead, Women in APEGA Committee (2011–present)
- APEGA Representative, Engineers Canada Women in Engineering Advisory Group (2010–2012)
- Member, Governance Committee (2010)
- Member, Public Interest Issues Committee (2009)
- Member, Council (2008–2011)
- Member, Audit Committee (2008)
- Member, Nominating Committee (2003-2004)
- Chair, Medicine Hat Branch (2001–2003)
- Branch Executive, Medicine Hat Branch (1992–2000)
- Member (1988–present)

Affiliations, Corporate or Community Service

- Classroom Presenter, Praxis Science & Technology Hotline (2012)
- Outreach Advisory Committee, Engineers Canada National Women and Aboriginal (2011-2012)
- Chair, Construction Committee, Habitat for Humanity — Medicine Hat Chapter (2010–2013)
- Volunteer, Habitat for Humanity — Medicine Hat Chapter (2010–2013)
- Volunteer Project Manager, St. John's Presbyterian Church, Capital Construction Project (2008-2009)
- Volunteer Judge, Kiwanis Regional Science Fair (1997–2009)
- Chief Judge, Kiwanis Regional Science Fair (1994–1996)
- Long-term Volunteer, Canadian Cancer Society

FOR PRESIDENT-ELECT/VICE-PRESIDENT Steve E. Hrudey, P.Eng., PhD, FCAE

Steve E. Hrudey, P.Eng., is a retired University of Alberta professor and currently principal of his own environmental risk consulting firm. Steve has been a Member of APEGA for almost 45 years and an APEGA Permit Holder with his consulting firm for 33 years. He was born, raised and initially educated in Edmonton, and he is now based in Canmore. Steve obtained his B.Sc. in mechanical engineering at the University of Alberta before earning an M.Sc. and a PhD in public health engineering from Imperial College, University of London. He was awarded a career academic degree of D.Sc. from the University of London in 2002 and an honorary D.Sc. from the University of Alberta in 2012. He has been awarded the 1991 Berry Medal from the Canadian Society for Civil Engineering for significant contributions to environmental engineering in Canada, the 1995 Emerald Award for environmental research, the 2012 A.P. Black Award of the American Water Works Association — its top research award — the 2013 APEGA Summit Award for Research Excellence and a Queen Elizabeth II Diamond Jubilee Medal. He was elected a Fellow of the Royal Society of Canada in 2006, of the Society for Risk Analysis in 2007, of the International Water Association in 2010, and of the Canadian Academy of Engineering in 2014.

He worked as an environmental regulator with B.C. and Environment Canada before joining the University of Alberta in 1975. Steve spent 13 years in the Department of Civil Engineering, and then moved to the Faculty of Medicine in 1988 to establish an interdisciplinary environmental health program (now the Division of Analytical and Environmental Toxicology). He spent 13 years as a cabinet-appointed member of the Alberta Environmental Appeals Board (EAB), the last four years as Chair. At the EAB, he served on 36 public hearing panels, 19 of them as Panel Chair. He has also served on 25 expert panels, eight of them as Chair.

These panels include

- Chairing a March 2014 international expert panel in Washington for the Water Research Foundation of Denver
- Serving on an expert management panel on risk for Calgary City Council following the June 2013 flood
- Chairing the Royal Society of Canada expert panel on environmental and health impacts of the oil sands industry (2009-2010)
- Serving on a three-member expert panel conducting nine public hearings across Canada on safe drinking water for First Nations, for Jim Prentice, then the federal Minister of Indian and Northern Affairs
- serving the research advisory panel to the Walkerton Inquiry (2000-2002)

His diverse, interdisciplinary career has provided Steve with a unique perspective on the roles and responsibilities to society of Professional Engineers and Geoscientists.

Steve and his wife, Elizabeth, have two sons, both Professional Engineers (in computer engineering and engineering physics) — one works in Alberta and the other in Boston; and a daughter, who is a pharmacist currently working at the University of Amsterdam Medical School. In 2004, Steve co-authored with Elizabeth *Safe Drinking Water: Lessons from Recent Outbreaks in Affluent Nations*, the best-selling book ever for IWA Publishing. In June 2014, they published a case-study sequel for frontline drinking water personnel with the American Water Works Association.

Steve is completing his three-year term on APEGA Council — a professional career highlight. This service has included contributing to a major re-focusing of APEGA governance to allow greater opportunities for Council to deliberate major issues facing Professional Engineers and Geoscientists. Given that the APEGA membership of about 75,000 is almost two per cent of Alberta's population, Professional Engineering and Geoscience judgment has an unacceptably low profile within provincial government decision-making. APEGA needs to build on and expand efforts to make Professional Engineers and Geoscientists as influential in government policy as Member numbers and contributions to Alberta's economy clearly warrant.

APEGA Activities

- Acting Chair, APEGA Council Governance Committee (2013-2014)
- Chair, Public Issues Committee (2013-2014)
- Member, APEGA Council (2012–2015)
- Member, Subcommittee of the Practice Standards Committee to prepare the *Guideline for Management of Risk in Professional Practice* (2004–2006)
- Member, Environment Committee (1995–1998)
- Member, Subcommittee of the Practice Standards Committee to prepare the first edition of *Environmental Practice — A Guideline* (1990–1993)
- Presenter, four technical seminars at branch meetings and APEGA venues

Affiliations, Corporate or Community Service

- Professor Emeritus, University of Alberta (2008–present)
- Member, Management Advisory Board, Alberta Water Research Institute (2007–2009)
- Chair, Environmental Appeals Board (2005–2009)
- Member, Science Advisory Council, Public Health Agency of Canada (2005–2007)
- Board Member, Environmental Appeals Board (1996–2009)
- Associate Editor, Canadian Journal of Civil Engineering (1988–1992)
- President, Steve E. Hrudey & Associates Ltd. (1981–present)
- Presenter, over 190 invited presentations worldwide to scientific, professional and public groups in the past 20 years

FOR COUNCIL Anil Mehrotra, P.Eng., PhD, FEC, FGC (Hon.), FCIC

Anil Mehrotra, P.Eng., obtained a bachelor's degree in chemical engineering from BITS–Pilani in India, a master's degree in environmental engineering from AIT in Bangkok, Thailand, and a PhD in chemical engineering from the University of Calgary. Since 1981, he has been a professor at the University of Calgary. His expertise includes transport and thermophysical properties of heavy crude oils and bitumens, solids deposition in pipelines, heat transfer, and energy and environmental engineering. Anil has published extensively on topics of industrial relevance. He continues to provide consulting to the oil and gas industry.

Anil has held several leadership positions at the University of Calgary, including interim Dean of the Schulich School of Engineering (2010-11). He currently serves as the founding director of the Centre for Environmental Engineering Research and Education (2002–present), which offers specializations in energy and environmental engineering. He is also the academic director of the interdisciplinary master's degree program in Sustainable Energy Development (2012–present).

For over 17 years, he served diligently as an academic examiner of chemical and environmental engineering on the APEGA Board of Examiners (BOE). As one of the most active and knowledgeable members of APEGA's BOE, he introduced a number of policy changes to enhance consistency and fairness in processing applications, and served as an examiner for technical examinations in chemical engineering. He also served on the APEGA Nominating Committee, and he served on three teams of the Canadian Enginnering Accreditation Board for the review and accreditation of Canadian engineering degree programs. He is a co-chair of the Technical Program Committee for the 65th Canadian Chemical Engineering Conference to be held in Calgary in October 2015.

Anil has received many teaching awards from undergraduate students in the Schulich School of Engineering. He is a two-time winner of the University of Calgary Students' Union Teaching Excellence Award. He is a recipient of four APEGA awards, namely the Excellence in Education Award, the Voluntary Service Award, the L.C. Charlesworth Professional Service Award, and (as a co-recipient) the Environment and Sustainability Award. He is a Fellow of Engineers Canada and of the Chemical Institute of Canada, and an Honorary Fellow of Geoscientists Canada.

Anil is a strong proponent of transforming engineering and geoscience training to include, besides a solid foundation in applied sciences and design principles, the important topics of safety, economics, the environment, energy conservation, sustainability, ethics and public policy. This well-rounded training is critical for APEGA Members to continue providing leadership in wealth creation and improved quality of life for all Albertans. He believes that a successful engineering or geoscience career demands honesty, integrity, ethics and commitment, and not compromising on safety and environmental preservation. He envisions even stronger partnerships between educational institutions and industry for the benefit of tomorrow's Professional Engineers and Geoscientists.

Anil believes that APEGA's ability and success in regulating *The Engineering and Geoscience Professions Act* depend largely on the contributions of all Professional Engineers and Geoscientists, who devote their time and expertise as dedicated volunteers. He advocates APEGA's critical role of promoting the professions by continually informing society of Members' innovative and transformational achievements. APEGA should also become a catalyst for ensuring adequate mentorship and stable career opportunities for the next generation of Professional Engineers and Geoscientists.

Anil and his wife, Rashmi, are proud parents to their son, Sachin, a manager for Suncor in Calgary, and their daughter, Shaily, a dentist in Saskatoon. They are also proud of their son-in-law, Nishant Sharma, a medical resident in Saskatoon. Anil and Rashmi enjoy travelling, hiking in the mountains, and listening to Indian classical music.

APEGA and Engineers Canada Activities

- Member, APEGA Nominating Committee (2004–2006)
- Member, CEAB Accreditation Teams (2001, 2002, 2006)
- Member, Canadian Engineering Qualifications Board, Committee for the Environmental Engineering Examination Syllabus (2001)
- Member, APEGA Board of Examiners (1996–2013)
- Member, APEGA (1982–present)

APEGA Awards and Recognition

- Fellow (Honorary) of Geoscientists Canada (2013)
- Fellow of Engineers Canada (2009)
- The Environment and Sustainability Award (2009, co-recipient)
- The L.C. Charlesworth Professional Service Award (2006)
- The Voluntary Service Award (2003)
- The Excellence in Education Award (2000)

Teaching, Education, Service and Professional Awards

- Outstanding Teaching Performance Award, Schulich School of Engineering (2013, 2014)
- Outstanding Teacher Award, Schulich School of Engineering (2013)
- Mentoring Excellence Award, Schulich School of Engineering (2012)
- Excellence in Professional/Occupation Field Award, India-Canada Association of Calgary (2007)
- Champion of the Schulich School of Engineering Award (2006)
- Service Excellence Award, Schulich School of Engineering (1999, 2002)
- Excellence in Education Award, Engineering Students Society (1998, 2006, 2007, 2010, 2012)
- Teaching Excellence Award, Schulich School of Engineering (1997, 2013)
- Teaching Excellence Award, University of Calgary Students' Union (1988, 2013)

FOR COUNCIL Gobind Khiani, P.Eng.

Gobind Khiani, P.Eng., currently working for Fluor, has spent more than 20 years in the energy and power business and has worked in the U.K., Dubai and Canada, with more than 10 years in the western Canadian oil and gas industry. He graduated from the University of Calgary's Schulich School of Engineering in pipeline engineering.

Gobind's knowledge of materials, engineering design and specifications of various equipment has led to his voluntary participation in various industry standard committees. He is currently serving as the Chair for the APEGA Calgary Branch Meetings Committee and is the Vice-Chair of the Standards Council of Canada.

His passion has led him to present and publish technical papers in the interest of sharing engineering knowledge and industry best practices in his areas of expertise to organizations such as ARAMCO in Houston, APEGA, Schulich School of Engineering, VMA, API, NACE, ISA, ASME and Valveworld.

He is an active volunteer and lives and works in Calgary. His commitment to family drives him to volunteer for Junior Achievement, FIRST Canadian Western Robotics, CYDC Panthers, Calgary Rangers and the APEGA mentoring program.

APEGA Activities

- Legislative Review – Champions Collaborative
- Mentoring Program
- Graduating Workshop, Iron Ring Ceremony
- Calgary Branch Executive Committee
- Calgary Branch Meetings Committee

Affiliations, Corporate or Community Service

- Vice-Chair, Standards Council of Canada (2014-present)
- Member, Standards Council of Canada (2011–present)
- Member, American Petroleum Institute on Standards (2010–present)
- Notary Public, Government of Alberta (2007–present)
- Volunteer Coach, Calgary Rangers Soccer Club, Calgary Girls School, Bishop Pinkham School
- Regular Blood Donor, Canadian Blood Services
- Annual participant, Fluor Canada Ltd.'s United Way campaign (ambassador), Fluor Canada Ltd.'s National Engineering & Geoscience Month activities (speaker) and Growing Representation & Opportunity for Women (participant)
- Participant, Emerging Leaders Group, Valve Users Group, the Canadian Prairie Group of Chartered Engineers
- Contributing Author, Gas Process Industry, Pumps & Systems, Valve World, Flow Control, Inc., Valve Magazine, Chemical Engineering, Hydrocarbon Processing, LNG Magazine
- Member, APEGBC, APEGS, APEGM, API, ISO, NACE, ASME

What would you say or do to encourage a young person to enter the Engineering or Geoscience Profession?

I tell young people that Professional Engineering and Geoscience are exciting, challenging professions with a large diversity of opportunities, both technically and in career development. I emphasize that public safety is paramount, and it is the professional's role to protect this element while finding sustainable solutions balanced with environment, social and economic benefits. We, as engineers, stamp documents and drawings, putting our reputation on the line, and helping to ensure the public of our expertise and knowledge, while proudly delivering solutions to serve our country and abroad through marvelous engineering practices.

Does APEGA's permitting of companies engaged in the practice of engineering or geoscience help protect public safety and well-being?

The APEGA Permit to Practice and the Permit Holder's Professional Practice Management Plan (PPMP) are instrumental in safeguarding public interest. They are especially helpful in larger organizations where there are competing demands and influences. A well-written PPMP reflecting well-thought-out management processes ensures appropriate practices are in place and being followed. These ensure due diligence, affect public safety and well-being, and maintain the quality of the work produced by the Permit Holder.

Last, but not least, I am going to work for and represent my fellow Members in improving policy at APEGA.

FOR COUNCIL Jennifer Enns, P.Eng.

Born in England, Jennifer Enns, P.Eng., moved to Canada as a teenager. She received her bachelor of civil engineering degree from Carleton University in 1978, then started her career with Bell Canada. She moved on to a number of project management roles and worked as a transportation engineering consultant. In 2002, Jennifer moved to Calgary with her family. She has worked for the City of Calgary for more than eight years, first in transportation planning and then as Leader for Professional Practice, for which she developed the city's professional practice seminars. During this period, she grew the city's E.I.T. Rotation Program to one of the largest and best-in-class programs in the country.

Currently, Jennifer is the Manager of Engineering and Energy Services, a group that focuses on sustainable buildings, energy efficiency and management, professional practice, and the city's industry relationships. The group also delivers engineering advice and design review services for city-owned buildings, and develops building-design guidelines. In this role, Jennifer is an in-house resource for professional practice issues and maintains the city's engineering and architectural consultant engagement framework. Jennifer is an active supporter of the use of qualifications-based selection (QBS) in procuring professional services. She frequently presents on and has published on the subject, and has supported QBS pilots. She also sits on a number of industry liaison committees and contributes to a variety of procurement documents, standards and guidelines.

A strong supporter of self-regulation and APEGA's role in safeguarding the public interest, Jennifer has brought this commitment and passion to her role as a volunteer member of APEGA's Practice Review Board for the last six years. She also serves as APEGA's representative on the University of Calgary's Schulich School of Engineering Faculty Council. She mentors E.I.T.s and Professional Engineers, and has been the reference for many APEGA applicants over the years. She has also presented to groups of internationally educated graduates looking to become licensed in Alberta.

Jennifer's support of self-regulation led her to serve as the public member for the Alberta Association of Architects. She also has a long history of volunteering for community organizations, including chairing and judging science fairs, launching a pilot science magazine with university journalism students, teaching science programs in after-school and community programs, and supporting school career days by speaking about careers in engineering.

Having worked in a number of industries and a variety of roles in Ontario and Alberta, Jennifer has gained an appreciation of the challenges faced by Professional Engineers and Geoscientists in various industry sectors. This has been invaluable in her volunteer work with APEGA and at the City of Calgary. Her years working in the public sector have reinforced her belief in the importance of APEGA's role and given her a strong appreciation of the competing demands and influences APEGA Members face in delivering infrastructure and services that affect all Albertans every day. This experience would add significant value to Council discussions of issues and in developing policy.

Jennifer lives in Calgary with her husband, Bill. Her daughter attends graduate school, and her son is an APEGA Professional Engineer.

APEGA Activities

- APEGA representative, University of Calgary Schulich School of Engineering Faculty Council (2009–present)
- Member, Practice Review Board (2008–present)
- Member (2004–present)
- Graduating Workshop, Iron Ring Ceremony

Affiliations, Corporate or Community Service

- President, City of Calgary Society of Professional Engineers (2014-present)
- Judge, Consulting Engineers of Alberta Showcase Awards (2011–present)
- Public Member, Practice Review Board, Alberta Association of Architects (2008–present)
- Member, Institute of Transportation Engineers (2007–2014)
- Member, various industry liaison committees (2007–present)
- Member, City of Calgary Society of Professional Engineers (2006–present)
- Volunteer of the Year Award Recipient, Central Volunteer Bureau of Ottawa-Carleton
- Member, various school and resource centre boards
- Volunteer Judge and Chair, various science fairs

FOR COUNCIL John Rhind, P.Geol.

John Rhind, P.Geol., was born in Toronto but lived in many other cities before finally landing in Edmonton in 1979. John obtained his B.Sc. in geology in 1984 from the University of Alberta. His executive development included completing the Operations Management Program from the Richard Ivey School of Business, the Executive Management Program from the Queen's School of Business, and the Senior Executive Management Program from Shell Executive Development.

John has been involved in oil and gas for 31 years, primarily in the oil sands business. He started his career as a Professional Geologist with Syncrude Canada Ltd., followed by a secondment to Imperial Oil in 1989. Returning to Syncrude in 1991, John moved into a business development role for two years, followed by successively more senior leadership roles to manage different parts of the business, including mining, extraction, utilities and upgrading. John joined Shell Canada Ltd. in 2008, where he became the Chief Operating Officer for Albian Sands Energy. He was responsible for integrating Albian into Royal Dutch Shell in 2009, and after that, in 2010, was appointed Vice-President of Oilsands Operations. John then became the Vice-President of Oilsands in 2014 and has had full profit-and-loss accountability for the business.

John has developed a reputation for implementing diversity and inclusion in every business he has led. As part of this effort, he has developed a passion for mentoring people to enable them to contribute at greater levels in their fields.

John and his wife, Gail, have two adult children, both whom live in Calgary. John and Gail have a home in Comox, B.C., where they enjoy walking the dogs, playing golf and exploring all that the island has to offer. John will retire in 2015, but he intends to keep involved in the industry, albeit on a more relaxed basis.

APEGA Activities

- Member (2005–Present)

Affiliations, Corporate or Community Service

- Board Member, Alberta Chamber of Resources (2013–2015)
- Board Member, Canadian Association of Petroleum Producers (CAPP) (2012–2014)
- Chair, CAPP Environmental Planning Group (2011–2013)
- Executive Committee Member, Mining Association of Canada (2009–2014)
- Chair, Keyano College Human Resources Committee (2009-2010)
- Board Member, Mining Association of Canada (2008–2014)
- Board Member, Keyano College (2008–2011)
- Member, Canadian Institute of Mining and Metallurgy (1994–present)
- Industry Director, Junior Achievement (1990–1993)

FOR COUNCIL Art Washuta, P.Eng.

Art Washuta, P.Eng., is a first-generation Canadian, born to Polish immigrant parents in McLennan, Alta. A 1973 graduate with distinction from the University of Alberta (B.Sc., civil engineering), he has spent most of his life in Edmonton.

Art's 40-year professional career has focused on the consulting engineering industry. He's practised in firms from very small to medium-sized, such as Bolter Parish Trimble and UMA Engineering, to a huge global company, AECOM. At AECOM, Art was responsible for driving the growth, strategy and delivery of transportation services across Western Canada, with a total staff of 350. He was also previously responsible for the 400-person, multi-business line, northern Alberta operations. Over the course of his career and in addition to his corporate responsibilities, Art intentionally maintained an oversight role in the management of major projects to ensure client satisfaction, quality deliverables and value for money.

Over the past 10 years, Art led the delivery of numerous City of Edmonton LRT projects. They include the south tunnel from University Station to Health Sciences Station, and preliminary design of the extension from Century Park to Ellerslie Road, the north extension from Churchill Station through Station Lands to NAIT, and the $1.8-billion Valley Line from downtown to Mill Woods, which is currently in the P3 procurement stage. Art has also been involved with major projects for the Department of National Defence, including short-range radar sites, forward-operating location for CF-18 aircraft in Inuvik, and the environmental clean-up of distant early warning line sites across the Canadian Arctic. As Design Manager for the Oldman River Dam Spillway (the largest in Alberta), Art was deeply gratified when the project was recognized with an Award of Excellence at the first Consulting Engineers of Alberta Showcase Awards Gala in 1997.

Over the course of these major projects, Art became a strong proponent of structured team building, implementation of formal partnering, prudent risk management and value engineering. The process of forming and developing collaborative, accountable and effective teams has been a cornerstone of Art's multi-firm project successes and contributed to the leadership and sustained growth of corporate business units. His leadership style is also adaptable to the needs of a situation, whether it's democratic consensus building, coaching or authoritative.

Art currently serves as Senior Vice-President, Operations, for OPUS Stewart Weir, a 550-person geomatics and engineering firm operating in Alberta and British Columbia. Responsibilities include focusing on sustainable growth, strategic diversification and people leadership.

Art is a proud father of three adult children and is known as "Gramp Art" to six young grandchildren. He and his wife, "Chef Tanya," love to host family dinners and solstice celebrations, as well as spend time on Salt Spring Island. Art enjoys doing home renovations and looks forward to his regular Saturday co-ed "mud-wrestling" sessions at the Edmonton Potters' Guild!

APEGA Activities

- Member, Nominating Committee (2011–2012)
- Member (1975–present)

Affiliations

- Honorary Director representing Past Presidents, Consulting Engineers of Alberta (2013–2015)
- President, CEA (2009-2010)
- Representative, Practice Standards Committee, CEA (2007–2012)
- Board Member, CEA (2007–2011)
- Chair, Liaison Committee, CEA/City of Edmonton (2005–2007)
- Member, Liaison Committee, CEA/City of Edmonton (2001–2011)
- Liaison Committee, Association of Consulting Engineering Companies, Department of National Defence/Defence Construction Canada (2000–2011)
- Board of Directors, Centre for Transportation Engineering and Planning (2003-2004)
- Member, APEGBC (1994–present), NAPEG (1987–present), APEY (1987–present)
- Member, American Concrete Institute
- Member, Project Management Institute

Community Service

- President, Edmonton Potters' Guild (2006–2008)
- Member, Edmonton Potters' Guild (1997–present)

APEGA Priority Issues

Art has been following some of the key issues currently challenging APEGA.

- Review of *The Engineering and Geosciences Professions Act* — this significant endeavour will be guided by the Champions Collaborative Program and will address regulatory expectations and governance practices
- Application/Registration — efforts to increase staff and streamline processes to make this important activity more efficient
- Member mobility — with the use of virtual teams for major projects, mobility across Canada and the United States is critical
- Other issues — such as ongoing efforts to increase revenues and reduce operating costs, improve the process and timeliness of investigations, and revamp the APEGA website

"Having led business-line operations within privately held and publicly traded corporations, and assisted in the implementation of a governance board for the $1.8-billion Valley Line P3 project, I believe that I could contribute to many of the above-noted initiatives in a meaningful way. In addition, as an Honorary Director of the Consulting Engineers of Alberta, I could help to facilitate collaboration between the two associations. One example is the CEA priority initiative of seeking legislation for qualifications-based selection of professional services."

FOR COUNCIL Jeff DiBattista, P.Eng., PhD, MBA, LEED AP

A little bit about Jeff

Jeff DiBattista, P.Eng., has lived in Alberta for more than 20 years, after graduating with a B.A.Sc. in civil engineering from the University of Waterloo and moving west with his wife, Traci. Jeff then pursued graduate studies at the University of Alberta, earning an M.Sc. and a PhD in structural engineering.

Jeff is a Principal with the Canadian design firm DIALOG, where he has worked for the past 15 years. During that time, Jeff had the good fortune to work on the design of university buildings, hospitals, mixed-use developments, cultural facilities, bridges and LRT systems that have improved communities across Alberta.

At home, Jeff and Traci are parents of two amazing teenagers: Alyssa, 17, and Nicholas, 14. In the summer of 2010, Jeff set out on his bicycle across Canada, with Traci and the kids operating the support vehicle. Their goals were to invest time together as a family, to learn about our great nation and its people, and to raise money to fight cancer. By summer's end, Jeff had cycled 6,931 kilometres and helped inspire supporters to donate more than $40,000 towards the fight against cancer.

Most recently, in July 2014, Jeff and his family returned to Edmonton after living in Boston for one year. During that time Jeff completed an executive MBA as part of the Sloan Fellows Program in Innovation and Global Leadership at the Massachusetts Institute of Technology.

What does Jeff stand for?

Jeff is a passionate advocate for engineering excellence in all of its forms. He believes deeply that Professional Engineers and Geoscientists have an opportunity — and a societal obligation — to re-establish themselves as thought leaders and advocates for effective, evidence-based public policy. Professional Engineers and Geoscientists must also strive to contribute more holistically to the design of our built environment and advocate more proactively for the conservation of our natural environment.

At the heart of professional excellence is education and lifelong educational development. Jeff is a steadfast advocate for post-secondary education in Alberta and is an active supporter of the faculty of engineering at his alma mater.

How will Jeff serve you and the profession?

Over the years, Jeff has had the privilege of serving the engineering profession through volunteer leadership roles with technical societies like the Canadian Society for Civil Engineering (CSCE) and with business advocacy groups like Consulting Engineers of Alberta (CEA).

"I am honoured to have been nominated as an APEGA Council candidate and welcome the opportunity to contribute to excellence in the regulation of our professions," says Jeff. "If elected, I pledge to do my utmost to serve our Members and to help set APEGA on the right course for the decades ahead. In particular, I believe there are three areas upon which Council must focus.

"First, I believe that APEGA must revamp its operational practices to provide better service to Members and to the public. Recent growth in membership has stretched APEGA's operational infrastructure to the limit. Council must continue to implement policies that empower APEGA's executive to tackle the challenges of rapid growth, and I am eager to bring my board experience and my passion for excellence to those conversations.

"Second, there is an escalating need to enhance and uphold the reputation of engineering and geoscience amongst the professions. I will advocate for APEGA to heighten its portrayal of our professions in the eyes of the public. I will also promote that procurement of engineering consulting services must be based upon qualifications, and not on low price.

"Third, and most important, I will listen to you, the APEGA Members. I do not pretend to be apprised fully of all of the key opportunities and challenges that lie ahead for our professions. I pledge to advocate that Council should seek your input to learn more about the vital issues that relate to our professions in Alberta."

APEGA Activities

- Member, Practice Standards Committee (2012-2013)
- Member, Nominating Committee (2011–2013)
- Author, *Mechanics of Materials* technical exam, Board of Examiners (2005–2008)
- Member (1997–present)

Professional Involvement and Community Service

- Past-President, CEA (2011-2012)
- President, CEA (2010-2011)
- Co-chair, CSCE Conference 2012 Edmonton, Leadership in Sustainable Infrastructure-125th Anniversary Conference of the CSCE (2009–2012)
- Vice-President, CEA (2009-2010)
- Board Member, Consulting Architects of Alberta (2009-2010)
- Director, CEA (2008-2009)
- Associate Adjunct Professor, University of Alberta (2008–2014)
- Executive Committee, Canadian Society for Civil Engineering, Edmonton and Northern Alberta Section (1996–2008)

For more information about Jeff, please visit http://ca.linkedin.com/in/jeffdibattista

FOR COUNCIL Dabir Naqvi, P.Eng.

Dabir Naqvi, P.Eng., graduated from NAIT in 1974 in mechanical industrial engineering technology and completed his mechanical engineering degree at Lakehead University in 1978. He is standing as a candidate for Council in the 2015 APEGA Election.

Dabir is currently serving as an Outreach Coordinator for APEGA Vermilion River Branch. He is passionate about giving back to the community. He is also involved with the Lloydminster Chamber of Commerce and the City of Lloydminster. During his career he learned the value of teamwork, challenging the status quo and having a bias for action. He is able to apply these skills to help these organizations. If elected to Council he will make the time commitment required to help APEGA.

Upon graduation, Dabir moved to Calgary and started his career as a project engineer with PanCanadian Petroleum. After four years, he moved to Canterra Energy, which was later acquired by Husky Oil. He spent 29 years at Husky, retiring from the company in 2011. During this time he progressed to various positions with increasing responsibilities. This included selection of materials for high sour gas development, production engineering, facilities/operations engineering and project management — all in Calgary. In 1996, Dabir moved with Husky to Lloydminster as the Engineering Supervisor. In 2001, he moved to Rocky Mountain House to be the District Manager for the Husky Ram River District. The district included Ram River Sour Gas Plant and field operations. In 2005, Husky moved him back to Lloydminster, where he became the District Manager for Production Operations for Heavy Oil and Gas. After six years, he retired from Husky as the General Manager of heavy oil operations. One year later, he started work with Grit Industries, a metal fabrication company in Lloydminster, as the Vice-President of Product Development. After spending a year and a half with Grit Industries, Dabir decided to retire in 2013.

Dabir and his wife, Kiran, live in Lloydminster. They are proud parents of three children. Their eldest son is a P.Eng. with APEGA, their daughter is a Geol.I.T. with APEGA, and their youngest son is enrolled in his first year of engineering. Dabir enjoys travelling and salmon and halibut fishing. He is an avid cross-country skier, squash player and cyclist.

APEGA Activities

- Outreach Coordinator, Vermilion River Branch (2014-present)
- Life Member (2014-present)
- Member-at-Large, Vermilion River Branch (2013–present)
- Member (1980–present)

Affiliations, Corporate or Community Service

- Board Member, Family and Community Support Services, City of Lloydminster (2014-present)
- Board Member, Lloydminster Chamber of Commerce (2012–present)
- Member, Political Action Committee, Lloydminster Chamber of Commerce (2011–present)
- Board Member, Lloydminster Streetscapes (2011-2012)
- Board Member, Rocky Mountain House & District Chamber of Commerce (2001–2004)
- Vice-President, Rocky Mountain House & District Chamber of Commerce (2004)

Recognition

- Community Service Award, Rocky Mountain House & District Chamber of Commerce (2004)

CALLING ALL VISUAL ARTISTS

APEGA Members and their immediate family are invited to showcase paintings, sculptures or photographs at the 14th annual APEGA Art Show. It will be held prior to the 2015 Summit Awards® Gala on Thursday, April 23, at the Calgary TELUS Convention Centre.

To register for space or for more information, contact:
artshow@apega.ca

Registration deadline:
Friday, March 27

APEGA

Celebrate Your Professions, Enhance Your Skills, Network With Your Peers: APEGA Summit 2015

Professional Engineers and Geoscientists in Alberta are invited to connect face-to-face with their colleagues and their Association, at the APEGA Summit 2015 Annual General Meeting and Conference. The two-day conference takes place at the Calgary TELUS Convention Centre, April 23 to 24, 2015, and is filled with networking, career-building and social events for Members to enjoy.

PROFESSIONAL DEVELOPMENT

The 2015 APEGA Summit offers relevant professional development seminars that give Members a chance to improve their soft and technical skills as well as meet their APEGA Continuing Professional Development requirements. The seminars will be held on Thursday, April 23, and the morning of Friday, April 24. This is a great opportunity for Professionals in Engineering and Geoscience to build their skills and connect with industry experts.

SUMMIT AWARDS GALA

On the evening of Thursday, April 23, Members and their guests are invited to honour the valuable accomplishments of Alberta's Professional Engineers and Geoscientists. The annual Summit Awards® Gala is APEGA's premier recognition event, where leaders in business, industry, government and education celebrate the achievements of APEGA's Professional Members, as chosen by their peers.

During the gala reception, Members can view the 14th annual APEGA Art Show. Gala guests will enjoy various artistic and creative works made by APEGA Members and their families.

APEGA FUN NIGHT

On Friday, April 24, Members are invited to attend a fun and relaxing evening at APEGA's very own pub night at The Stamp & Seal, a pub created for the night. Games, prizes and dancing are all on the menu, along with great food and company.

ANNUAL GENERAL MEETING

The APEGA Annual General Meeting and luncheon are open to all Members of the Association and public observers. On Friday, April 24, APEGA Members have a chance to become involved in

the business of their Association, discuss issues of importance to the Engineering and Geoscience Professions, and vote on matters brought before Council.

SPONSORSHIP OPPORTUNITIES

APEGA Members and Permit Holders have an opportunity to enter into a special partnership with APEGA. Sponsorship of the APEGA Summit 2015 Annual General Meeting and Conference enables your organization to reinforce its image within the Professional Engineering and Geoscience communities while helping APEGA stage a successful conference. All sponsorship levels include seating at the Summit Awards® Gala, where you can network with your peers.

For more information about sponsoring and registering for the 2015 APEGA Annual General Meeting and Conference, please visit apegasummit.ca or the Summit 2015 section of this *PEG* magazine, pages 27 to 34. You can also follow #apegasummit on Twitter for current and live updates during the events.

Proudly brought to you
by Professionals in
Engineering and Geoscience

APEGA

www.apega.ca

APEGA SUMMIT 2015

ANNUAL
GENERAL MEETING AND CONFERENCE

April 23–24, 2015
Calgary TELUS Convention Centre

Info: 780-426-3990 | 800-661-7020 | www.apega.ca

ANNUAL
GENERAL MEETING AND CONFERENCE

APEGA Summit 2015 Annual General Meeting and Conference takes place at the Calgary TELUS Convention Centre and Fairmont Palliser Hotel from April 23 to 24, 2015. The Annual General Meeting and Conference is an opportunity for Members to attend two days of events filled with career-building, networking and socializing.

SUMMIT AWARDS® GALA

THURSDAY, APRIL 23, 2015	CALGARY TELUS CONVENTION CENTRE
Art Show and Reception 5:00 p.m.-6:00 p.m.	**Awards Presentation and Dinner** 6:00 p.m.-9:00 p.m.

The Summit Awards® Gala is an evening of celebration as we honour individuals and corporate members for their outstanding professional, technical and community service achievements.

Nominations for Summit Awards® are accepted throughout the year. APEGA encourages you to nominate a deserving individual or project for a Summit Award®. For more information and nomination packages, visit apega.ca or call the Edmonton office at 780-426-3990 or 800-661-7020.

DRESS: FORMAL OR SEMI-FORMAL

SUMMIT AWARDS®

Honorary Membership Award
The Research Excellence Award
The Frank Spragins Technical Award
The Excellence in Education Award
The Early Accomplishment Award
The Community Service Award
The Outstanding Mentor Award
The Women in Engineering and Geoscience Champion Award
The Environment and Sustainability Award
The Project Achievement Award
The Centennial Leadership Award

APEGA ART SHOW AND RECEPTION

THURSDAY, APRIL 23, 2015 **CALGARY TELUS CONVENTION CENTRE**
5:00 p.m.-6:00 p.m.

APEGA is pleased to present the 14th annual APEGA Art Show as part of the Summit Awards® Gala. This visual arts display includes paintings, sculptures and photographic works by Members and their families.

To register for space or for more information, contact **artshow@apega.ca**.

ANNUAL GENERAL MEETING AND LUNCHEON

FRIDAY, APRIL 24, 2015	CALGARY TELUS CONVENTION CENTRE	
Annual General Meeting Registration 11:00 a.m.–11:30 a.m.	**Annual General Meeting Luncheon** 11:30 a.m.–1:40 p.m.	**Annual General Meeting** 2:00 p.m.–5:00 p.m.

Become involved in the business of your Association. Vote on matters that are brought before Council, hear about important issues relating to APEGA and the professions, and present motions for consideration by Council.

DRESS: BUSINESS CASUAL

PROFESSIONAL DEVELOPMENT PROGRAM

Keeping current with technology and innovation is a challenge for every professional. Our professional development seminars are designed for Members to enhance their soft and technical skills in specific areas. To assist Members in meeting their Continuing Professional Development requirements, the APEGA 2015 Annual General Meeting and Conference offers professional development courses in five streams scheduled over one and a half days.

DRESS: BUSINESS CASUAL

STREAM 1 | STRATEGIC PLANNING*

THURSDAY, APRIL 23, 2015

Thinking Strategically in the Context of Engineering in Alberta
Dr. Janice Thomas, MBA

STREAM 2 | RESPONSIBILITIES OF SELF-REGULATION

THURSDAY, APRIL 23, 2015

What is Self-Regulation?
Carol Moen, P.Eng.
Katrina Haymond, Partner, Field LLP

About the Legislative Review
Mark Tokarik, P.Eng., LL.B., FEC, FGC (Hon.)
Dianne Johnstone

Ensuring Professional Responsibility with Offshore Work and Products
Ray Choudhury, P.Eng., MBA
Gavin Chan, P.Eng.

Authentication of Documents
Ray Choudhury, P.Eng., MBA
Gavin Chan, P.Eng.

FRIDAY, APRIL 24, 2015

Protecting the Integrity, Security and Authenticity of Electronically Sealed and Transmitted Documents
Patrick Cormier, B.Sc., LL.B., CD

APEGA Legislation Review Consultations – Spring 2015
Carol Moen, P.Eng.
Mark Tokarik, P.Eng., LL.B., FEC, FGC (Hon.)
Dianne Johnstone

STREAM 3 | HIGHLIGHTING DEVELOPMENTS IN ELECTRICAL ENGINEERING

THURSDAY, APRIL 23, 2015

CSA Z462-15 Risk Assessment Procedures for Energized Electrical Work
Terry Becker, P.Eng.

Switching Transients: Problems and Solutions
Scott Basinger, P.Eng.
Peter Pietramala, P.Eng.

Product Certification for Hazardous Locations
Allan Bozek, P.Eng.

FRIDAY, APRIL 24, 2015

Substation Grounding Transfer of Potential: Case Studies
Duane Leschert, P.Eng.

Fellow IEEE, "Codes and Standards" Update
Tim Driscoll, P.Eng.

STREAM 4 | WELLBORE INTEGRITY AND UNCONVENTIONAL RESERVOIR DEVELOPMENT

THURSDAY, APRIL 23, 2015	FRIDAY, APRIL 24, 2015
Unconventional Oil and Gas Development in the Western Canadian Sedimentary Basin: Part One Dr. Brad Hayes, P.Geol., FGC **Geomechanical Aspects of Unconventional Reservoir Development** Dr. Maurice B. Dusseault, P.Eng. **Hydrogeological Principles for Petroleum Geologists** Dr. Richard Jackson, P.Eng. (PEO)	**Unconventional Oil and Gas Development in the Western Canadian Sedimentary Basin: Part Two** Dr. Brad Hayes, P.Geol., FGC **Wellbore Integrity: Cement Shrinkage, Casing Shear, Sources of Gas Migration and Casing Corrosion** Dr. Maurice B. Dusseault, P.Eng. **Wellbore Leakage and Groundwater Contamination** Dr. Richard Jackson, P.Eng. (PEO) **Establishing Baseline Groundwater Quality Conditions** Dr. Richard Jackson, P.Eng. (PEO)

STREAM 5 | INTRODUCTION TO THE ENERGY INDUSTRY

THURSDAY, APRIL 23, 2015	FRIDAY, APRIL 24, 2015
Petroleum Geology Overview **Energy Industry Overview** **Geological Reservoirs** **Fundamentals of Land** **Safety in the Energy Industry** **Petroleum Economics**	**Athabasca Oil Sands** **Core: Overview, Core Research Centre and Samples** All topics within stream 5 are presented by Art Irwin, P.Geol.

LUNCH SPEAKER

THURSDAY, APRIL 23, 2015
Prairie Sea Monsters of the Ancient World Dr. Wayne Haglund

This program, including topics and speakers, are subject to change.

Registration deadline: April 10, 2015

To register for the professional development program, please complete the registration form on the last page of this insert or visit www.apegasummit.ca.

*Note: Stream 1 is a one-day event. Streams 2 to 5 are all one and a half days long. If you wish to register for any of these streams, you are required to register for the full session of each stream.

SCHEDULE AT A GLANCE

THURSDAY, APRIL 23, 2015	FRIDAY, APRIL 24, 2015
7:45 a.m.–3:30 p.m. **Professional Development Seminar Registration** Glen Foyer Calgary TELUS Convention Centre	7:45 a.m.–11:45 a.m. **Professional Development Seminar Registration** Glen Foyer Calgary TELUS Convention Centre
8:30 a.m.–4:30 p.m. **Professional Development Seminars** Glen Rooms Calgary TELUS Convention Centre	8:30 a.m.–11:45 a.m. **Professional Development Seminars** Glen Rooms Calgary TELUS Convention Centre
12:00 p.m.–1:00 p.m. **Lunch Speaker:** Dr. Wayne Haglund Macleod Hall A Calgary TELUS Convention Centre	11:00 a.m.–2:00 p.m. **Annual General Meeting Registration** Macleod Hall Calgary TELUS Convention Centre
5:00 p.m.–6:00 p.m. **Summit Awards® Reception and Art Show** Macleod Hall Calgary TELUS Convention Centre	11:30 a.m.–1:40 p.m. **Annual General Meeting Luncheon** **Speaker:** Dr. Patrick Moore Macleod Hall A Calgary TELUS Convention Centre
6:00 p.m.–10:00 p.m. **Summit Awards® Gala** Macleod Hall Calgary TELUS Convention Centre	2:00 p.m.–5:00 p.m. **Annual General Meeting** Macleod Halls B and C Calgary TELUS Convention Centre
	6:00 p.m.–10:00 p.m. **APEGA Pub Night** Crystal Ballroom Fairmont Palliser Hotel

SOCIAL PROGRAM

THURSDAY, APRIL 23, 2015

Summit Awards® Reception and Art Show

5:00 p.m.–6:00 p.m.

Macleod Hall
Calgary TELUS Convention Centre

Summit Awards® Gala

6:00 p.m.–10:00 p.m.

Macleod Hall
Calgary TELUS Convention Centre

Join APEGA Members, business professionals, government representatives and educators to celebrate Alberta Professional Engineering and Geoscience achievements.

DRESS: FORMAL OR SEMI-FORMAL

FRIDAY, APRIL 24, 2015

APEGA Pub Night

6:00 p.m.–10:00 p.m.

Crystal Ballroom
Fairmont Palliser Hotel

Join your colleagues for a fun and relaxing evening at APEGA's very own *The Stamp & Seal* pub night. Games, prizes and dancing are all on the menu along with great food and company.

DRESS: CASUAL

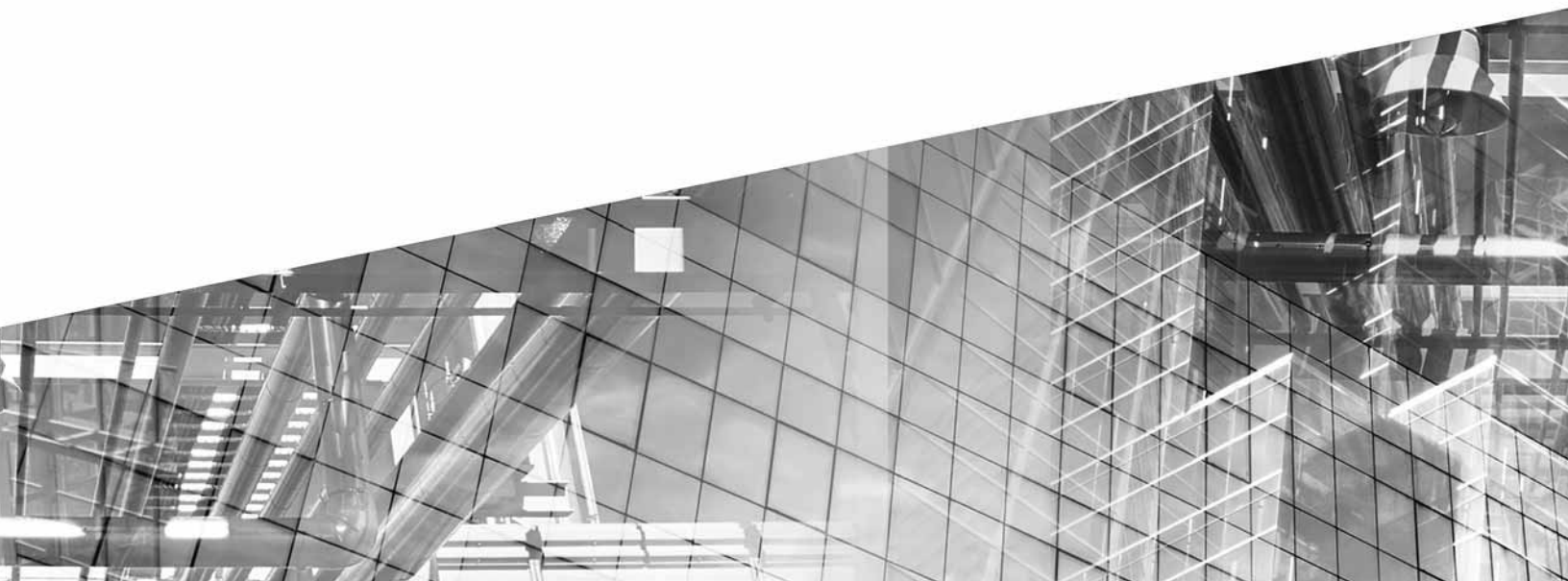
CONFERENCE REGISTRATION INFORMATION

Visit **www.apegasummit.ca** to register online or for more information.

Non-members of APEGA are welcome to register for any or all programs of the conference.

Please complete the registration form on the next page.

Registration deadline: April 10, 2015



APEGA SUMMIT 2015 ANNUAL GENERAL MEETING AND CONFERENCE REGISTRATION FORM

APEGA Member Number

Title (Mr./Mrs./Ms/Dr.) First name Last name Professional Designation

Organization name (if applicable) Mailing Address: Street

City Province Postal Code Telephone Fax

Email

Guest Name: Title (Mr./Mrs./Ms/Dr.) First name Last name Professional Designation

Please specify any special dietary requirements e.g. allergies, vegetarian

	Early Bird**	Cost	# Attending	Fee Total
Thurs., April 23 – Stream 1 Professional Development Seminar Thursday Only	$165	$199	_____	_____
April 23/24 – Stream 2 Professional Development Seminar Thursday and Friday	$165	$199	_____	_____
April 23/24 – Streams 3, 4 or 5 Professional Development Seminars Thursday and Friday, indicate choice below	$249	$299	_____	_____
Thurs., April 23 – Summit Awards® Gala		$150	_____	_____
Fri., April 24 – AGM Luncheon		$35	_____	_____
Fri., April 24 – Annual General Meeting		N/C	_____	_____
Fri., April 24 – Pub Night		$50	_____	_____

*** EARLY BIRD ENDS MARCH 20, 2015*

PD Seminars Corporate Discount: Every third registration of equal value received at the same time from the same organization will receive a 50 per cent corporate discount. To qualify for the discount, you must provide the names of the two other individuals registering from your organization.

1) _____ 2) _____

Your Professional Development Session Choices:

Please **circle** your session choice below. Stream 1 is a one-day event. Streams 2 to 5 are all one and a half days long. If you wish to register for any of these streams, you will be required to register for the full session of each stream.

Stream 1 Strategic Planning	**Stream 2** Responsibilities of Self-Regulation	**Stream 3** Highlighting Developments in Electrical Engineering	**Stream 4** Wellbore Integrity and Unconventional Reservoir Development	**Stream 5** Introduction to the Energy Industry
Thinking Strategically in the Context of Engineering in Alberta	What is Self-Regulation? About the Legislative Review Ensuring Professional Responsibility with Offshore Work and Products Authentication of Documents Protecting the Integrity, Security and Authenticity of Electronically Sealed and Transmitted Documents APEGA Legislation Review Consultations – Spring 2015	CSA Z462-15 Risk Assessment Procedures for Energized Electrical Work Switching Transients: Problems and Solutions Product Certification for Hazardous Locations Substation Grounding Transfer of Potential: Case Studies Fellow IEEE, "Codes and Standards" Update	Unconventional Oil and Gas Development in the Western Canadian Sedimentary Basin Geomechanical Aspects of Unconventional Reservoir Development Hydrogeological Principles for Petroleum Geologists Wellbore Integrity: Cement Shrinkage, Casing Shear, Sources of Gas Migration and Casing Corrosion Wellbore Leakage and Groundwater Contamination Establishing Baseline Groundwater Quality Conditions	Petroleum Geology Overview Energy Industry Overview Geological Reservoirs Fundamentals of Land Safety in the Energy Industry Petroleum Economics Athabasca Oil Sands Core – Overview, Core Research Center and Samples
THURSDAY ONLY	**THURSDAY/FRIDAY**	**THURSDAY/FRIDAY**	**THURSDAY/FRIDAY**	**THURSDAY/FRIDAY**

PAYMENT: ☐ Cheque, payable to APEGA ☐ Visa/MasterCard/AMEX # _____ Expiry date _____/_____

Fax this form to: 780-425-1722 **Email:** edmevents@apega.ca **Mail to:** APEGA, 1500 Scotia One, 10060 JASPER AVE NW, EDMONTON AB T5J 4A2
Phone enquiries: 780-426-3990 or 800-661-7020

Registration Deadline: April 10, 2015 Cancellation Policy: non-refundable after April 11, 2015 Prices include GST (GST #10672 8603 RT0001).
Online registration at www.apegasummit.ca. NOTE: non-members of APEGA are welcome to register for any or all programs of the conference.
This program, including speakers and topics, are subject to change.

Expand Your Network, PART I

Build Your Skills
Build Your Business
Build Your Professions — Face-to-Face

BY **CORINNE LUTTER**
Member & Internal Communications Coordinator

Building a new business from scratch isn't easy, especially when it comes to growing your client base. For Craig Boris, P.Eng., co-owner of Red Deer-based start-up 908 Engineering, it's been all about making connections — lots of them.

"We're a new firm and we've got the majority of our business through networking," says Mr. Boris, an electrical engineering consultant. His advice is simple. "Go to everything. Meet everybody you possibly can. You never know what doors it might open."

He's attended several events put on by the Consulting Engineers of Alberta (CEA) Young Professionals Group, and recently helped launch the Central Alberta Engineering & Design Group with fellow professional Fahim Quamrul, P.Eng.

Their aim is to bring together engineering and design specialists for social activities, with an emphasis on knowledge sharing and professional development. Since organizing the group last fall on meetup.com, about 50 people have joined. An inaugural social night was held in December, and more technical and social activities are being planned for 2015. There's only one rule: No office politics.

"The overall goal is to provide a good networking forum for the members to meet. With most of the electronic communication that goes on these days, a lot of time you never get a chance to actually meet people that you work with face-to-face," notes Mr. Boris.

APEGA's biggest networking and professional development event is Summit 2015: the APEGA Annual General Meeting and Conference, which takes place in Calgary this year, April 23-24, at the TELUS Convention Centre. *See pages 27 to 34 for full information.*

APEGA offers a variety of other networking opportunities for Members at all stages of their careers. Regional branches, for example, hold regular luncheons and social mixers, which are advertised online at apega.ca.

Want to perfect your networking skills? APEGA is offering a one-day professional development seminar on successful business networking techniques. Among the skills you'll practise: social conversation techniques, impression management and introductions.

What

- Networking: Building Strong Business Relationships

When

- April 8 in Edmonton
- April 13 in Calgary

For more information, visit apega.ca.

Coming This Summer

Social media networking makes it easy for professionals to connect online, but are you using it effectively? The goals may be similar to those of face-to-face networking, but the rules and strategies are often different.

Watch for Part II in this series in the summer 2015 edition of *The PEG*. We'll look at how to get the most out of LinkedIn, the world's largest professional networking site. We'll also look at the potential pitfalls of tweeting before thinking, and blending your personal and professional networks.

Notifications are also sent via email. For university students, APEGA offers speed networking events to help them connect with professionals.

NETWORKING FOR WOMEN

GeoWomen in Calgary started as a way to give young women who have just begun their careers an opportunity to network with women who are more established. Meetings over the past year have featured guest speakers addressing a range of topics, from diversity to management of maternity leaves. Since its inception in February 2014, the group has expanded to include internationally trained professionals and women returning to work after career breaks.

"It's a great networking tool for them because they meet women who are employed and have contacts they haven't been able to access," says Jocelyn Keith-Asante, P.Geol., a staff geologist with Shell Canada and one the group's founders.

It can sometimes be difficult for women in geoscience — especially those just starting out — to connect with female role models. "There is usually more opportunity for women to network in a larger company, but they can be quite isolated in smaller companies," explains Ms. Keith-Asante.

That was the case for Mandy Williams, P.Geol. She was working for a small resource company and was the only woman in a technical role on staff. A mutual acquaintance connected her with Ms. Keith-Asante, who became her mentor. Together, they formed GeoWomen to make it easier for women to support each other by sharing their experiences, ideas and career advice.

"We share stories, skills and strategies for getting through your career as a female in this industry," says Ms. Keith-Asante, who has found it rewarding to support other women, especially younger ones. "You get their energy, their enthusiasm, and their love for what they want to do in the business. I find it quite energizing."

There are dozens of engineering and geoscience groups across Alberta that organize networking events, from casual social mixers to seminars and workshops. To find one that is of interest to you, do an online search — or ask your colleagues.

Also watch your inbox for the e-PEG and newsletters from your branch. If you aren't receiving APEGA electronic communications, make your preferences known on apega.ca. Click on Canada's Anti-Spam Legislation, under What's New, and follow the directions. APEGA's electronic messages include information on the Association and other matters of interest to Professional Engineers and Geoscientists — among them networking and professional development opportunities.

NETWORKING 101: ALWAYS BE PREPARED

To get the most out of a networking event, you should plan ahead. "Make sure you're prepared and you'll make a better impression," says Mr. Boris.

Before you go, think about what your goals are.

- Are you looking for job leads?
- Are you scouting prospective employees?
- Are you seeking new clients?

Try to find out who else is attending the event — speakers, presenters, other professionals — and make a list of who you want to meet. Making quality connections starts with a game plan.

Being prepared can also help put your mind at ease, especially if the thought of striking up a conversation with complete strangers makes you break out in a cold sweat. Practise a 30-second introduction — what you do and why you do it — and take some time to catch up on current events so you'll have something interesting to comment on.

"Talk about something you're passionate about. That's what I find works for me," says Mr. Boris. A good question might be: "How do you think the low price of oil is going to affect the engineering community?"

CONTINUED ON PAGE **40** ››

TWI

World Leaders in NDT,
Welding and Inspection Training and Certification

2015 Training Calendar

CSWIP 3.0 Visual Welding Inspector Level 1 (3 days)
- **Calgary** 12-14 March 10–12 December
- **Edmonton** 4-6 June
- **Fort McMurray** 30 April-2 May
- **Toronto** 19–21 May
- **Vancouver** 11-13 June
- **Quebec** 18-20 June

CSWIP 3.1 Welding Inspector Level 2 (5 days)
- **Calgary** 12-16 March 10–14 December
- **Edmonton** 4-8 June
- **Fort McMurray** 30 April-4 May
- **Toronto** 19–23 May
- **Vancouver** 11-15 June
- **Quebec** 18-22 June

CSWIP 3.2 Senior Welding Inspector Level 3 (5 days)
- **Calgary** 18-22 June 19-23 November

CWB-CSWIP Level 2 Bridging (3 days)
- **Calgary** 12-14 March 10–12 December
- **Edmonton** 4-6 June
- **Fort McMurray** 30 April-2 May
- **Toronto** 19–21 May
- **Vancouver** 11-13 June
- **Quebec** 18-20 June

AWS CWI-CSWIP Level 2 Bridging (3 days)
- **Calgary** 12-14 March 10–12 December
- **Edmonton** 4-6 June
- **Fort McMurray** 30 April-2 May
- **Toronto** 19–21 May
- **Vancouver** 11-13 June
- **Quebec** 18-20 June

ASME IX Welding Standards (2 days)
- **Calgary** 7-8 February 3-4 October

CSA Z662-11 (FAB and In-Service Welding) (2 days)
- **Calgary** 28 Feb-1March 17-18 October

Manual and Encoded Phased Array Inspection of Welds (15 days)
- **Calgary** 6-24 April

AUT Data Interpretation (5 days)
- **Calgary** 16-20 Feb 12-16 October

Time of Flight Diffraction (ToFD) (10 days)
- **Calgary** 14-25 September

ACFM Crack Microgauge Operators Course Level 1 (5 days)
- **Calgary** 29 June-3 July

ACFM Crack Microgauge Operators Course Level 2 (5 days)
- **Calgary** 6-10 July

API 570 Piping Inspector Examination Preparation Course (4 days)
- **Calgary** 16-19 April 17-20 September

FFS Assessment based on API 579-1/ ASME FFS-1 (4 days)
- **Calgary** 27-30 July

Structural Integrity Assessment to BS 7910 (4 days)
- **Calgary** 7-10 September

BGAS-CSWIP Painting Inspector - Grade 2 (5 days)
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EDMONTON BRANCH CALENDAR

LUNCHEONS

Tuesday, March 17
Ethics For Professionals — Real Life Example
Jay Nagendran, P.Eng., M.Sc., QEP, BCEE
President and CEO, AEMERA

Tuesday, March 24
Location: Holiday Inn Conference Centre, Edmonton South
4485 Gateway Boulevard
Making Safety Real — The Journey to High Performing Safety Cultures
Gord Winkel, P.Eng., M.Sc., Chair and Industrial Professor, Engineering Safety & Risk Management, U of A

Tuesday, April 21
Innovation in the Oil Sands
Eddy Isaacs, PhD, FCAE
CEO, Alberta Innovates — Energy and Environment Solutions

Tuesday, May 19
Climate Change and Innovation
Dr. Eric Newell, OC, P.Eng., FCAE
Former President and CEO, Syncrude

Luncheons held at *(unless otherwise noted above):* Westin Hotel, 10135 100th St. NW

Schedule: 11:30 a.m. Registration
12 p.m. Lunch
12:30 p.m. Presentation

Cost: Members — $35 ($40 at door)
Non-members — $40 ($45 at door)
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CALGARY BRANCH CALENDAR

LUNCHEONS

Thursday, March 12
Navigating the Economic Storm in Oil & Gas
Ian C. Dundas
President & CEO of Enerplus Corporation

Thursday, April 16
Energy Regulators in Alberta
Dennis Langen, Partner with Dentons Canada LLP

Thursday, May 14
The Alberta Energy Regulator in Your Community
Deborah Eastlick, Vice President, Alberta Stakeholder Engagement of Alberta Energy Regulator

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Luncheons held at: Fairmont Palliser Hotel, 133 Ninth Ave SW

Schedule: 11:15 a.m. Registration
11:45 a.m. Luncheon

Cost: Members & Guests — $50
Students — $25
ASAP (APEGA Student Advantage Program) — $15

Register: Online at **www.apega.ca** under Fast Find › Branches › Calgary; or phone the Calgary APEGA Office at 403-262-7714, toll free 1-888-262-3688, noting dietary restrictions.

SPONSORS

CONTINUED FROM PAGE **36** ››

"It's an open-ended question and everybody has an opinion on it," he says. "It's going to spark some good conversation and it shows that you've got some interest."

Experienced networkers have other hints, too.

- Don't be confrontational. You want to have a conversation, not a heated debate
- Be approachable, be friendly and be a good listener
- Put down your smartphone and be fully engaged
- If you're not comfortable being in the spotlight, ask questions and let others do the talking

"People like nothing more than to talk about themselves, and there's nothing wrong with that. Even a simple question can get the conversation started," says Mr. Boris.

On the other hand, if you're already a networking ace, try to engage the new people you see. "We try to put new people at ease — people with more experience usually speak one-on-one with them," says Ms. Keith-Asante. "It's about listening and sharing your time, which is important."

Don't forget to wear a name tag, hand out business cards and ask for other people's cards. Even in today's digital world, handing out business cards is considered good business etiquette. Some people even include their social media contact information on them, such as a Twitter handle or LinkedIn URL.

"It doesn't matter where or when, I've always got a business card in my back pocket," says Mr. Boris.

Once an event is over, don't neglect to follow-up with the contacts you've made. And the sooner you do so, the better.

"A lot of the younger women will make coffee appointments to follow-up and continue to build the relationship," says Ms. Keith-Asante.

Mr. Boris agrees. "If you ever have an opportunity to go for lunch with somebody, or a job interview — even if you're already employed — it's good to meet with people. Don't turn any opportunity down, no matter how small," he says. "Every job I've ever had has been from making face-to-face, personal connections."

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Trending Now: Your Resume?

The basics of a good resume may seem like they're similar from year to year, but savvy job hunters keep their eyes — and their strategies — focused on what impresses today's recruiters

BY **JENNIFER MILLER**
Professional Edge Resumes

To get a job interview, your resume and cover letter need to impress recruiters. But is your resume ready? When was the last time you updated your career documents? Do you understand current resume trends — or is your resume as old fashioned as the typewriter collecting dust in the basement?

Incorporating current trends can help you build an effective resume that you're proud of and ready to present to potential employers. Here are a few things to consider.

- *Highlight accomplishments, not responsibilities.* Two words that should never appear on a resume are "responsibilities included." Use verbs to start your sentences. Don't simply list day-to-day tasks that your job title likely implies. Consider creative ways to list keywords on your resume, such as a section dedicated to your areas of expertise
- *Write clearly and concisely.* Your resume must make an impact within a few seconds, so keep details to the point. Balance text with white space for proper readability. When in doubt, have a colleague or friend review your documents to make sure he or she is able to quickly pick out important messages and identify your value
- *Remove outdated content.* Generally speaking, resumes should list details from the past 10 to 15 years of your professional career. In listing employment older than that, you risk dating yourself and could be overlooked. And if you completed post-secondary education more than two or three years ago, consider removing the completion date
- *Modernize the format of your career documents.* If your resume still uses Times New Roman, chances are it needs freshening up. Keep the font simple and use 10- or 11-point type for most of the text. Borders, subtle colours, bolding and italics can add visual interest and help the reader pick out key details
- *Make your resume ATS friendly.* That's applicant tracking system friendly. Most resumes are scanned by an ATS before they are ever seen by a human being. ATS software cannot read text contained in headers, footers or text boxes. You should have two versions of your resume — one for online submission and one that is more visually appealing for networking

TRANFORM YOUR RESUME WITH A BRANDING STATEMENT

Another recent trend in resume writing is the use of branding statements. A strong branding statement can truly make your resume a marketing tool and will set you apart from other candidates.

A branding statement — sometimes referred to as a value proposition — tells the employer exactly what you have to offer. Branding statements vary greatly, depending on your job and industry, but the common thread is that they showcase what you bring to the table.

Usually, branding statements are written at the top of your resume, beneath your name and contact information. It's best to highlight up to three important skills that you possess — skills that can be written in a sentence or even as a list of terms. Keep your branding statement to one or two lines. It must be easy to read and understand.

By removing the old-fashioned career objective from your resume and replacing it with a creative and powerful branding statement, you transform your resume and improve your chances of securing an interview. Instead of telling employers what *you want*, you are explaining what *you can offer*.

FOCUS, FOCUS, FOCUS

To compile an effective resume, you have to be in the right frame of mind. Here are some tips to think about as you create content for your resume.

- *Select a target.* Your resume should be tailored for the type of position you plan to apply for. There is no such thing as a good generic resume. In order to have a strong and focused resume, you must know your target. If you have several targets, you may need multiple resumes or different versions of your resume

"By removing the old-fashioned career objective from your resume and replacing it with a creative and powerful branding statement, you transform your resume and improve your chances of securing an interview. Instead of telling employers what *you want,* you are explaining what *you can offer*"

- *Stay positive.* Recruiters don't want complaints or negativity. Think about the favourite aspects of your prior jobs. Under no circumstances you should state why you left a previous role
- *Contemplate your core skills.* Write down what you feel your core skills are and skills that you wish to highlight on your resume. Spend some time reviewing your entire work history, and determine whether there's a way to thoughtfully word your history to match your target
- *Consider your accomplishments.* Recruiters don't want to see a list of your responsibilities. They want to know how you made a positive difference. Describing your accomplishments will show how you will perform and make an impact in the future, which will sell you above other candidates.

TRY TESTIMONIALS

We've reviewed a lot of new trends in resumes: fresh formats, clean writing and impactful branding statements. But have you thought about including testimonials in your resume or cover letter? Adding a testimonial can be a great way to support the messages you are trying to portray to employers, giving you an edge over other applicants.

Testimonials can be added to your resume in a number of ways. Adding a simple text box works, but make sure the addition fits with the overall format and it is pleasing to the eye. Alternatively, a separate Testimonials section could be added near the end of your resume, or a quote could be added to the Accomplishments section of your resume. Overall, keep testimonials short. One or two sentences is usually enough.

The most likely sources for testimonials are performance reviews given by your manager or supervisor. If your company is fairly casual about offering performance reviews, request one. Ask that something be provided to you in writing — you never know when you may need documented accolades that overview your work ethic and strongest skill sets. You can also request letters of reference from former employers, clients, colleagues or vendors. Another growing source for testimonials is LinkedIn, which allows your connections to directly endorse your skills and experience online.

When it comes time to select your best endorsements, only use material that is current (nothing from 30 years ago) and, more importantly, relevant. If you are looking for work with project management as a key skill, find a testimonial that mentions how well you completed a past project.

If you aren't confident in your current resume, ask for help. Utilize your network and call in professional help when you need it. Preparing a tailored resume with an appropriate format and effective content can make the difference between job search success and failure. Don't lose an opportunity because your resume isn't ready.

Jennifer Miller is a Calgary-based Certified Professional Resume Writer, Certified Resume Strategist and Certified Advanced Resume Writer. She operates Professional Edge Resumes (professionaledgeresumes.com) and has received multiple awards through the Career Professionals of Canada. Professional Edge is an APEGA group benefit provider.

Readers' Forum

Readers' Forum submissions should be emailed to George Lee, *PEG* Editor, at **glee@apega.ca.** Please limit them to 300 words or less. Longer letters are printed at the discretion of the editor. Letters may be edited for brevity, taste, clarity and legality. Please note: Readers' Forum items are treated as opinions and therefore are NOT peer reviewed. They do not necessarily reflect the views of APEGA Council, Executive Committee or staff.

✉ GEOTHERMAL ARTICLE SHOULD HAVE DUG DEEPER

Re: The Other Energy Sector, Part IV, The PEG, *Winter 2014.*

This is a timely article on an alternate energy source, but unfortunately it is redolent of the style of *Popular Science* magazine — lots of happy examples of positive things and almost no mention of real-world problems.

Where is the discussion of the corrosivity of many deep and hot water systems? Does one pump the super-hot ground water to the surface and deal with the corrosion and other problems there? Or does one circulate pure water down to the hot region and deal with the corrosion below?

Where is the discussion of the electrical energy consumption of heat pump compressors necessary to pump the latent heat of the barely warm shallow water systems up to a minimal usable temperature level for even hot water heating? Where is the discussion of the cost of a natural gas-derived BTU versus an electrically derived BTU, most especially in today's environment?

Where is the discussion of the appallingly low efficiency of steam turbines driven by low heat/low pressure (perhaps 150 pounds per square inch) steam? The geothermal power station at Lake Taupo in New Zealand runs at this input level and is a massive installation, generating very modest electrical output for massive capital input.

Geothermal can be viable — but let's press on with our eyes wide open!

RICHARD WILSON, *P.GEOPH.*
Life Member
Calgary

✉ TRAIN LETTER GETS MANY WHEELS TURNING

Re: Tank Cars Present a Design Challenge, by Henry A. Spencer, P.Eng., Readers' Forum, The PEG, *Winter 2014.*

The writer states that rail car axles have no differential, thus causing a problem when trains traverse a curve in the track. Strictly speaking, this is correct. But as a railroad enthusiast, I'd like to expand on the topic.

Railroad engineers came up with a smarter and more cost-effective solution than a differential. The riding surface of a train wheel is not a parallel-sided cylinder, but rather a truncated cone. The diameter of the rim adjacent to the flange is greater than the diameter at the outside edge of the wheel.

Thus, on a bend the outside wheel tends to ride against the flange, while the inside wheel rides closer to the edge. Both wheels travel at the same rotational speed, but the outside wheel covers a slightly greater distance owing to its slightly greater effective circumference.

In practice the effect may be diminished by the dynamic condition of the train.

JIM BLUM, *P.ENG.*
Calgary

* * *

✉ Mr. Spencer raises some interesting challenges on rail tank car design. Yes, a safer rail car can be designed, but more work is necessary for ensuring the safe shipment of crude oil out of this province. And some of Mr. Spencer's points of view need clarification.

The centre of gravity is dramatically different when a rail car is loaded than when it is empty. When empty, a tank car weighs about 65,000 lb. (the North American rail system usually uses non-metric numbers) and when loaded can weigh up to 286,000 lb. A round cross-section of tank is definitely more economical to build, because flat plate is rolled into cylinders during manufacturing. An egg cross-section may encourage sloshing in a partly loaded car, which is not safe.

Regarding wheels, there is some interesting geometry that comes into play with the wheel rims to minimize skidding in corners. The wheel camber is designed so the wheel on the inside has a smaller diameter of wheel in contact with the rail, while the opposite wheel makes contact at a slightly larger diameter.

Train speed is not limited by wheels. Take a page from the high-speed passenger trains in Europe and Japan. Rather, the track bed, ties and ballast have to be able to withstand the dynamic rolling forces of a fully loaded freight train. And yes, there are bad examples of wavy, lumpy track. But you will find the tracks for Class 1 railroads, such as CPR and CN Rail, to be in good condition.

There are opportunities to improve the whole tank car design. I am a founding member of Crude Oil on Rail Enterprises (CORE), a Canadian association of some 20 private companies engaged in all aspects of the crude oil loading and shipping industry, from engineering to technology. We are concerned with the future of this business and want to ensure any pending regulations are based on sound and practical principles. Which is where good engineering comes in.

For example, by adding a thermal insulation shell on the outside of the steel tank (and inside the outer jacket) with a high thermal rating, we can decrease the threat of collateral fire explosions in adjacent tank cars.

This is an important discussion. It will influence the viability of getting crude oil out of this province and to the markets. More importantly, can we Professional Engineers make this a safer industry for our public?

JIM BENEDICT, *P.ENG.*
Calgary

* * *

✉ Mr. Spencer's points do make sense from the actual conveying point of view. However, the design — and even a federally forced upgrade to current tank designs — focuses on postponing tank failure when things do go wrong.

Tanks have a round cross-section so that they can handle some pressure before the blow-out valve pops off. This allows time to control the situation before it gets worse. An egg-shaped cross-section would distort and cause a container breach under moderate pressure. Modern tank cars have received recent upgrades in valve safety, wall thickness and the reliability of blow-out valves. It's better to have a blow-out valve pop off and result in a small torch than it is to have a BLEVE — the term used for a boiling liquid expanding vapour explosion.

The slow trains that we have now are due to line congestion (think Whitemud Drive in the mornings, if you live in Edmonton). I routinely see trains moving around 80 kilometres per hour, the most fuel efficient speed, when scheduling lines up right. Large railway companies are looking at the very expensive prospect of building more rail lines, either by doubling up track or by adding new routes.

Mr. Spencer is correct about railbed quality. Broken or distorted rails are a major cause of derailments. Fortunately, there have been significant improvements in railbed design in the last few decades, such as concrete or composite ties, welded rails, and spring versus spiked-rail retention. The next leaps forward, now under development, are in sensing technology to look for deteriorating track and deteriorating truck assemblies (essentially wheels and suspension). These technologies are getting closer and closer to real time and becoming less expensive.

Readers' Forum

Finally, the axle/wheel design does include a feature to handle curves and it does it well. The wheel profiles are not cylindrical but cone shaped. I'm sure other writers on the subject will have brought up this important point, so I won't go into detail.

There have been other designs to look at this issue but multi-part wheel sets are not as reliable as the single-piece wheel sets that we have now. Single-piece sets also change-out very quickly, keeping cargo on the move. The biggest wheel wear is most likely due to locked brakes in emergency stopping situations.

Due to some unfortunately spectacular failures, the public now hears about almost every rail-related incident. But they do happen very rarely. We have all personally seen many road-related incidents that do not make the news.

Engineers have been very hard at work on improving what is a timeless — but very functional — design.

HARALD WITZLER, *P.ENG.*
Sherwood Park

* * *

✉ Mr. Spencer is correct in that there are safety concerns with modern railcars, just as there are with any modern technology. This came into the media spotlight following the Lac Mégantic accident, especially as it applies to the Class 111 tank car, as defined by the U.S. Department of Transport. A quick review of *Trains* magazine over the last year or so will reveal a number of investigations underway to improve the safety and crash-worthiness of these tank cars.

Mr. Spencer makes the assertion that tank cars have "such a high centre of gravity [that they] are inherently unstable." This is false. There are thousands of tank cars in daily revenue service across North America and there is no concern with them rocking themselves off the track.

Regulations specify the maximum height for the centre of gravity of a railcar; a Google search will confirm that, for anyone who's interested. As an object lesson in the stability of railcars, Mr. Spencer should observe a double-stack container train. These trains have cars that load two levels of shipping containers, with the top of the upper container approaching 20 feet above the rail. While the containers are somewhat lighter than a loaded tank car, there are no stability problems with them. In fact, these trains are some of the fastest in North America; BNSF Railway routinely runs them at 70 miles per hour in some regions.

Mr. Spencer also states that, "Some of the older tanks have gone swayback." I am not sure exactly what this means, but I suspect he is referring to tank cars that are a little higher at each end, with a noticeable slope down towards the centre of the car. These are called funnel-flow tank cars — it is not a problem but rather an intentional design feature to help facilitate unloading.

Mr. Spencer is correct that the basic wheel design has remained unchanged for many years, but over years there have been slight changes to wheel design to improve tracking, wear, wheel life, and safety characteristics. The wheels most certainly do not "limit the speed that a train can travel" — the steel-wheel-on-steel-rail speed record is currently held by a French TGV that reached a speed of 574.8 km/h in April 2007. The European rail and wheel profiles are similar to North American standards, and the train had only superficial modifications (such as reduced number of cars and slightly larger-diameter wheels) to reach this speed.

Mr. Spencer's comments about dealing with curves are more or less correct — each wheel set is a rigid assembly, but given the relatively generous curve radii on mainlines, this is not a significant concern. Wheels do, in fact, have a slight differential built into them.

Engineering is the application of science and technology to solve problems; as with all things, this involves balancing many factors, including safety and cost. We certainly have the means to move rail traffic faster; I have ridden on passenger trains at speeds around 300 km/h in at least four countries. But the

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railways need to consider the cost for increased speed carefully.

Mr. Spencer says a "safe increase of five km/h would bring down costs considerably." Actually, faster trains require increased expense to ensure smoother track. They burn more fuel. They require greater care to maintain wheelsets and running gears to higher standards and finer tolerances.

There are a lot of interesting challenges facing North American railways, but we already know how to safely run trains more quickly; the choice not to do so is primarily economical.

JASON ARNOT, *P.ENG.*
Calgary

✉ INSTRUMENT ENGINEERING EXPERTISE NEEDED

In my position at Red Deer College, I have been tasked with forming and leading a team to develop curriculum content for our new Instrument Engineering Technology (IET) program, which we plan to launch in the fall of this year. Drawing on the knowledge and experience of Red Deer College faculty members, we have begun development.

We wish to supplement this input, however, with some from external resources. I am therefore writing to *The PEG* in the hopes of building interest from other Members and drawing on their wealth of experience in instrument engineering.

Perhaps my story will help attract some of your readers to this endeavor. I am a recently reinstated APEGA Member, holding a P.L.(Eng.) licence. Not long ago, I had retired after a 30-year career with NOVA Chemicals in Red Deer in instrument and electrical engineering. But I decided to re-enter the workforce and utilize my experience and knowledge in the education field. That's how I ended up at Red Deer College, and that's why I am now reaching out to the APEGA membership.

Red Deer College hopes to tap into the experience of other people like me — for instance, recently retired Professional Engineers or Professional Licensees who may want to spend some of their retirement sharing their experience, knowledge and skills in helping to develop a new generation of instrumentation engineering technologists, here in Central Alberta.

Curriculum development can be done remotely, if those interested live outside of Red Deer. Having said that, we would also be extremely interested in utilizing experience in the classroom, for those who do live close by. And, should there be any current Professional Engineers who feel they can provide development or instructional assistance part time, we would also welcome them.

Thank you for your help in getting the word out. A small item in the e-PEG has already brought us responses. Here's hoping this second appeal to APEGA's extremely rich vein of knowledge and expertise can help us even further.

NIGEL LANE, *P.L.(ENG.)*
Curriculum Development Lead
Instrument Engineering Technology
School of Trades and Technologies
Red Deer College

Editor's Note: Reach Mr. Lane at 403-342-3376 or nigel.lane@rdc.rd.ca.

✉ INACTION BY INDEPENDENT CONTRACTORS COULD BE TAXING

Professional Members who do contract work should be aware of how costly it could be to file their taxes at the small business rate of 14 per cent. If Canada Revenue Agency (CRA) assesses a contractor as a personal services business (PSB) instead of a small business, the rate now jumps to 38 per cent. When dividends are paid out, the amount could even reach 50 per cent or more.

At particular risk are individual contractors who work for one client. If you've created a corporate structure but otherwise would probably be considered an employee, the strategy could backfire. I suggest you bring the issue up with your accountant.

You may also want to check *CRA's Guide RC4110 — Employee or Self-Employed?* Although it doesn't specifically

Readers' Forum

address the issue, the guide does include some of the basic criteria CRA use.

The rules regarding who has PSB income have not changed in many years. However, very few people in the past have admitted that they are a PSB, because it would have meant paying a 25 per cent (now 38 per cent) rate instead of the small business rate. Their reasons were many. Their contract had the right wording. They worked through a third party such as a job recruiter. They supplied their own tools, set their own work hours, invoiced rather than filled out timesheets — the list goes on.

Because the tax rate has gone up, it is a fair assumption that the CRA is going to more aggressively seek contractors to audit. There are, however, some strategies that may work for individual contractors working for one client — other than continuing to the take the risk of being assessed a PSB after an audit. You could, for example, create partnerships, which have the added benefit of opening up opportunities for human resources services, insurance and health benefits.

The partnership solution may not suit everyone, but if you are at risk, you do need to start the conversation with your accountant. I am convinced that doing nothing about your situation is not a good approach. In fact, it may prove very costly.

RON MCPHAIL, *CMA*
Calgary

The Buzz

ALBERTA CUTS ANNOUNCED, DEFICIT PREDICTED

Albertans have been nervously tracking oil prices over the past several months with a sense of déjà vu. For the first time in five years, the price for West Texas Intermediate crude dropped below US $50 a barrel in early January — down more than 50 per cent from June. Tipped dominos have included layoffs, falling stock prices for Canadian energy companies, and billions in cutbacks to capital spending and layoffs.

Premier Jim Prentice told media that the Government of Alberta will face a $500-million deficit in 2015. Earlier, when oil prices were higher, the government had forecasted a $1.5-billion surplus. He also speculated that falling oil prices might be a slippery slope, telling reporters that Alberta hasn't yet seen the bottom of the market.

Shell Canada, Suncor Energy, Schlumberger, Canadian Natural Resources Ltd., Cenovus Energy Inc. and Trilogy Energy Corp. are among the companies that have announced budget cuts or layoffs — and in some cases both. But rock-bottom prices aren't expected to last long. Most economists predict they will move up again by the second quarter and average $60 per barrel in 2015.

During the downturn of 2008 and 2009, the industry lost about 15,000 workers. But according to ATB Financial, the current economic turbulence is unlikely to lead to a recession in Alberta. ATB's quarterly report, released in January, predicts that the province's gross domestic product will grow by two per cent in 2015, which is about half the GDP growth the province saw in 2014. The Conference Board of Canada is less optimistic, predicting that Alberta is likely headed for a recession if oil prices continue to fall.

-Caitlin Crawshaw and Jacqueline Louie

OIL'S LOSS COULD BE FORESTRY'S GAIN

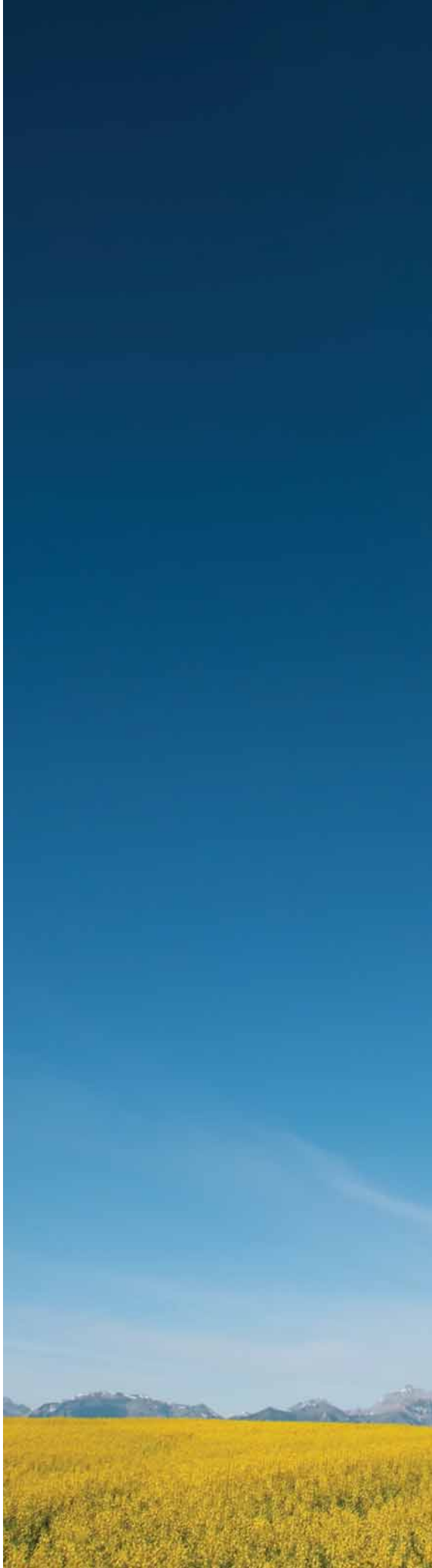
A weakened Canadian dollar and reduced fuel costs could be a boon for Alberta's forestry industry and communities where sawmills are major employers. A report released by the province in January notes that the surging U.S. economy and expected housing boom in 2015 could boost lumber exports there. Housing starts in the U.S. are expected to jump from one million in 2014 to 1.4 million in 2015.

In Alberta, however, the effects of weak oil are already being felt in the domestic market for building products. The Canada Mortgage and Housing Corporation reports that new housing construction in the Prairie provinces fell 10 per cent in January.

-Corinne Lutter

CALGARY'S BUSIEST PEDESTRIAN UNDERPASS GETS $3.5-MILLION MAKEOVER

It may be dark, dank and often smelly, but the pedestrian underpass next to the Fairmont Palliser Hotel in Calgary is also the city's busiest. Located at First Street S. between Ninth Avenue and 10th Avenue SW, the underpass connects Calgary's downtown and Beltline districts for about 9,500 pedestrians daily.



GROWING THE GREEN ECONOMY
Jobs in Canada's clean energy sector are up 37 per cent, to 23,700 workers, a report from Clean Energy Canada says.
-photo by Corinne Lutter

Now, the underpass is getting spruced up to the tune of $3.5 million, which will create a safer, more comfortable pedestrian experience. With the help of corporate donations, the city is adding LED lights, painting steel girders and repairing sidewalks. Work is scheduled for completion this summer.

The underpass is actually part of one of the city's two oldest remaining railroad bridges.

-Jacqueline Louie

GREEN EMPLOYMENT OVERTAKES OILSANDS

Renewable energy has grown enough in the last five years that it now surpasses the oil sands when measured by employment. So says a new report published by Clean Energy Canada, a non-government advocate for renewables.

Employment in the clean energy sector — hydro power, wind, solar, biomass and the like — is up 37 per cent to 23,700 workers. In comparison, oil sands employment is 22,340. The report advocates more renewable power generation in Alberta, with its plentiful sunny days and wind.

-Jacqueline Louie

WILL ALBERTA MAKE ROOM FOR ITS RIVERS?

A new study says that using the power of Mother Nature is part of the answer to mitigating future floods in Alberta. Alberta WaterSMART, an engineering consulting company, presented a report to the Government of Alberta in December, after combining input from the public, municipalities, water managers, and watershed and environmental organizations.

Of particular potential is a program used in the Netherlands to manage flooding. Called Room for the River, it manages high water levels along rivers by giving them room to grow. Solutions could include buying out property owners in flood basins, preventing new development in floodplains and widening river banks.

The report includes advice on what could be done along southern Alberta's Bow and Elbow rivers to reduce the vulnerability of people and infrastructure, improve environmental quality, mitigate future flooding and manage watersheds.

-Jacqueline Louie

EDMONTON MAY BE RESILIENT TO ECONOMIC DOWNTURN

Edmonton's economy could remain in decent shape, if the slump in oil prices doesn't persist for too long. City of Edmonton Chief Economist John Rose thinks the city should be relatively insulated

from falling oil prices, thanks to strong economic and investment growth since 2009. He told the *Edmonton Journal* in January that there's still pent-up demand for things like housing and rental accommodation.

"That's going to keep us going for a while, but if low oil prices persist, it's going to hit us. There's going to be a significant moderation in our growth, but there's no sense that we're looking at a recession scenario — yet." On top of this, Statistics Canada data show the city gained 2,500 new jobs in December, causing unemployment to fall from 5.3 to five per cent.

-Caitlin Crawshaw

CALGARY TARGETS NEIGHBOURHOODS WITH WHITER, MORE EFFICIENT AND LESS POLLUTING LIGHT

Calgary is being brighter about light, thanks to new LED systems being installed in its communities. The city is retrofitting all of its street lights, switching from high-pressure sodium to energy-efficient LED technology.

The LED street lamps provide a whiter light, and the new design directs it downward, onto the actual roads and sidewalks that need it. The old system spreads the light all over, including upwards. The city says the lighting is better for neighbourhoods and roads, but notes that there are other benefits, too — including up to 55 per cent less electricity consumption, lower maintenance costs and less light pollution.

Installations will be completed by 2018, the city estimates.

-Jacqueline Louie

PEACE RIVER HYDRO PROJECT AWAITS A BETTER ECONOMY

Calgary-based TransAlta has halted its proposed Peace River hydro plant until market conditions improve. In January, the company informed the Alberta Utilities Commission (AUC) of its decision to withdraw an application for the 100-megawatt, run-of-river project near Dunvegan in northern Alberta.

The $600-million plant has been in development for more than a decade and

WHERE WOULD YOU RATHER WALK? An iconic but grimy pedestrian underpass in Calgary is about to get a $3.5-million makeover. Top: an artist's rendering of what it will look like when the upgrade is complete. Bottom: what the underpass looks like now.

-images courtesy City of Calgary

was supposed to be completed last May. In August, TransAlta asked for a time extension to 2023. A recent letter to the AUC says the company it will reapply "when economic conditions are more favourable."

-Corinne Lutter

GAS-FUELED POWER PLANT WILL USE WORLD'S MOST ADVANCED TURBINE TECHNOLOGY

Expansion of hydro power may be on hold in Alberta, but electrical generation fired by natural gas is still a going concern. Construction is expected to begin in mid-2015 on a $1.4-billion expansion at the Genesee power plant, 50 kilometres west of Edmonton near Warburg. Genesee 4 & 5 will be built next to the plant's three existing coal-fired units and have a combined generating capacity of up to 1,060 MW. The new units will be built using high-efficiency, gas turbine technology — the most advanced of the J-class technology in commercial operation.

The project, a joint venture of Edmonton's Capital Power and Calgary's ENMAX, has received all major regulatory approvals. Construction timelines are flexible. Depending on market conditions, the first unit could be completed by late 2018. The second unit will either be built at the same time or up to two years later. Capital Power will lead construction and operate the facility.

ENMAX and Capital Power also jointly own the Shepherd Energy Centre, a natural gas-fired plant about to begin operation in east Calgary. With Genesee 4 & 5, the companies will own two of Alberta's largest and most efficient generating operations.

-Corinne Lutter

OIL PRICES ZAP SMALL BUSINESS ZEAL

The morale of Alberta's small business owners has been dropping as quickly as the price of oil. In January, the Canadian Federation of Independent Business released its latest Small Business Confidence Index, a 100-point scale that measures the outlook business owners have for the coming year. Alberta's small business confidence was the highest in the country last October at 74.6, but now it's the lowest at 54.8. That's Alberta's worst rating since 2009.

-Caitlin Crawshaw

CONSULTING ENGINEERS HAVE LEARNED FROM THE PAST, SAYS CEA CEO

The morale of Alberta's consulting engineers appears to be better than that of small business. "We've been down this road before," Ken Pilip, P.Eng., CEO and Registrar of the Consulting Engineers of Alberta, told the *Canadian Consulting Engineer* in January. Past downturns have taught companies to diversify, says Mr. Pilip. He's optimistic that infrastructure projects, like LRT expansion and sewer upgrades, will keep firms busy until the economy rebounds.

It wasn't long ago that studies were predicting shortages of Professional Engineers and Geoscientists in Alberta. That should mean that it makes sense for companies to do what they can to retain skilled employees during the oil downturn. The statistics don't tell a clear story, but retaining professional staff may not always be possible in the current climate. Statistics Canada reported Alberta losing 11,000 jobs in professional, scientific and technical occupations in November. Yet the sector gained 6,500 jobs in December.

-Corinne Lutter

WORLD WATCH

BY **GAIL HELGASON**
Freelance Contributor

SOLAR SYSTEM HARNESSES SUNFLOWER POWER

We all know sunflowers can inspire wonderful art. They're also the inspiration for an innovative new system that could revolutionize solar power.

European engineers have developed a 10-metre-tall prototype that resembles a large metal flower, equipped with a tracking system that follows the sun. The system uses a series of mirrors to deflect the sun's rays to converter chips, *The Daily Mail* (United Kingdom) reports.

The aim is to develop an economical photovoltaic system capable of collecting 80 per cent of incoming radiation and converting it to useful energy — for one-half to one-third the cost of comparable solar converters. Not only does the system generate electricity, it also produces large amounts of hot water from its cooling system, which can be pumped through desalinators to transform salt water into drinking water. Designers say that an installation of several generators could provide fresh water for an entire town.

Further investigation funded by the Swiss Commission for Technology and Innovation will support work on the new system by researchers at IBM Research Zurich and Airtight Energy of Biasca, Switzerland. IBM has offered to install two systems for free, and communities around the world have been invited to apply.

GLASS INSERTS PROVIDE NEW SIGHTSEEING EXPERIENCE FROM TOWER BRIDGE

Visitors to London's iconic Tower Bridge can now enjoy a bird's-eye view of the River Thames from near the top of the historic structure. The 120-year-old bridge was recently fitted with glass inserts on the floors of the twin walkways that cross the centre span, says *Civil Engineering* (Reston, Virginia).

With engineering by the Sheffield firm Ekspan, each insert is 11.5 metres long by 1.8 metres wide and made up of six glass panels. Panels consist of four layers of glass, plus an extra top layer than can be replaced in case of surface damage. A carbon-steel framework supports each insert.

Designers included space on either side of the inserts. That means people who aren't comfortable walking on glass 42 metres above the river can continue using the walkway — no queasiness necessary.

BUCKET LIST ITEM: STAY IN AN UNDERWATER HOTEL

For a future vacation, how about staying in an underwater hotel? More than $215 million has already been raised in the hope of building one, says the *Engineering News-Record* (New York).

Located off of a private island in Fiji, the Poseidon Resort is among several dream projects profiled in a recent issue of the magazine. Bruce Jones, of the company U.S. Submarines, says financing and fine-tuning of engineering are underway. He envisions a 24-suite hotel, 12 metres below the surface, which tourists will access via small submarines.

Other projects on the dream list are a fixed link between Italy and Sicily, and a bubble-like enclosure that would create havens for people living in extremely polluted cities.

CHINA CLOSING RESEARCH GAP

Following intense catch-up efforts over the last decade, China is now the world's second most active country in research and development performance, topped only by the United States.

China published 17 per cent of the world's peer-reviewed research engineering articles in 2011, equal to the U.S. As well, the number of science and engineering PhDs awarded annually is second to the U.S., which is followed by Russia, Germany and the United Kingdom.

World Watch

The statistics are from a 2014 global higher education report released by the United States National Science Foundation.

ENGINEERS AIM TO REDUCE HOCKEY CONCUSSIONS

Concerns about head injuries in hockey continue to grow, from minor hockey up to the pros. With that in mind, biomedical engineering researchers at Virginia Tech are testing hockey helmets to identify those with the strongest potential to minimize the risk of concussions, the university reports on its website. Scientists and engineers at the school are developing a five-point rating scale, dubbed the STAR system, which will measure a helmet's ability to reduce the risk of concussion.

The challenge is to account for the many different scenarios, including impacts with arena glass, boards and ice, says Steven Rowson, an assistant professor. Testing methods include placing instruments in hockey helmets to collect head-impact data. Sensors will also measure linear and rotational head acceleration, viewed as critical in determining concussion risk.

This research follows 10 years of research at Virginia Tech on football helmet safety, which resulted in a five-point safety scale for football helmets.

TORONTO TOWER WILL BE CANADA'S TALLEST BUILDING — FOR NOW

You could strain your neck on this one. Visitors to Toronto will need to look a long way up if they hope to see the top of a 92-storey condo tower on King Street West, expected to be under construction in 2017, *Canadian Consulting Engineer* (Toronto) reports. It will top out at 304 metres and will be Canada's tallest building — for the time being.

As part of the Metro Toronto Convention Centre redevelopment, two 326-metre towers have been proposed by Oxford Properties Group. The current record holder is First Canadian Place in Toronto, which is 298 metres tall.

Back to the condo development: Design is by famed architect Frank Gehry. The developer is Peter Kofman of Projectcore Inc., in conjunction with David Mirvish of Mirvish + Gehry. Features include a reinforced concrete, shear-wall structure and special design elements to help break up the effects of wind. A second tower in the project will reach 82 storeys.

PANAMA CANAL EXPANSION ON THE HOME STRETCH

One of the world's greatest engineering projects, the Panama Canal, is gearing up for major milestones in 2015. With the US $5.25-billion expansion expected to be operational by early 2016, the focus now is on flooding a third set of locks by June. The Institute of Civil Engineering (London) notes that the project includes "the largest water-saving basins ever designed or built."

SILVER LINING
The sunflower solar power parabolic dish is covered with 36 elliptic mirrors made of 0.2-millimetre-thick, recyclable plastic foil with a silver coating. That's a little thicker than a chocolate bar wrapper.
-computer rendering courtesy Airlight Energy/dsolar

WATER WORLD
Plans for an underwater hotel have been in the works for more than a decade. If it ever goes ahead, business should be good — 150,000 potential guests have already put their names on a waiting list.
-computer rendering courtesy Poseidon Undersea Resorts

Movers&Shakers

COMPILED AND WRITTEN BY
GILLIAN BENNETT
The PEG

YOUNG AND IMPACTFUL MEMBERS MAKE LIST

Don't let their ages fool you. The three APEGA Members mentioned in this item stand out in the ranks of Alberta's most talented and successful people. We know this thanks to *Avenue* magazines in Calgary and Edmonton, and their Top 40 Under 40 lists.

We start with **Robert Prybysh, P.Eng.** He had already worked on 3,000 projects in Western Canada with the company he founded, **Arrow Engineering Ltd.**, when he decided he wanted to head back to school. It was a risky move for the 37-year-old, largely because he would have to cut back on his workload with his firm. But Mr. Prybysh decided it was the right thing to do. As *Avenue Edmonton* reports, he saw education as an opportunity to give back to his profession.

Mr. Prybysh's mandate was to create a program and research lab to study heating, ventilation and air conditioning (HVAC) — what he considers a neglected field. He is currently the Engineered Air Fellow in HVAC Engineering at the University of Alberta, while he pursues a PhD in construction engineering and management.

He already has bachelor's and master's degrees in mechanical engineering from the U of A, along with more than 12 years of experience in engineering, controls and environmental work. Still clocking hours part-time as Arrow's Chief Engineer, Mr. Prybysh oversees quality control and technical review elements of building projects for his company. And he gives back to the larger community as a board member of the Rotary Club of Edmonton and a volunteer with numerous condominium corporations.

There's a good chance you've already heard of **Rachael L'Orsa, P.Eng.** If not, we'll correct that right now.

As a robotics researcher, a volunteer mentor, a certified paramedic, a smokejumper and the president of a rowing club, among the few cool things Ms. L'Orsa hasn't done yet is travel into outer space. But don't worry — it's on her bucket list. The University of Calgary graduate student made *Avenue Calgary's* Top 40 under 40, and she was featured in the June 2013 *PEG* for her work with the APEGA-sponsored FIRST Robotics competition.

Ms. L'Orsa's early fascination with robotics led her to study mechanical engineering at the University of British Columbia. There she earned a bachelor's degree in mechanical engineering and a research fellowship with the University of Tokyo, before choosing the U of C to pursue a master's degree in electrical engineering. Now accepted into the PhD program, her focus is Project neuroArm, a neurosurgical robotics initiative that changes the way computers are used to direct precise repeatable movement.

Think surgery, for example.

The writing control software she is developing ensures a robot does what the surgeon directs it to do. The project out of the Foothills Medical Centre will have implications for space, oil and gas, and other industries that require precise repairs in hazardous environments.

Movers & Shakers

ROBERT GOMES, P.ENG. . .
. . . one of Edmonton's Power 30

Ms. L'Orsa also shares her passion for robotics through the Schulich Community Robotics Program, which she founded and directs. The program offers school-aged children in Calgary hands-on activities involving robotics. She also mentors high school students through Cybermentor and is one of two lead mentors for an all-girl robotics team called the Intimitrons of Area 51 (the only all-girl FIRST Robotics team in Western Canada).

If that weren't exciting enough, Ms. L'Orsa spends her summers leaping from airplanes into forest fires, as a volunteer smokejumper with the BC Forest Service. She is one of only three female smokejumpers in Canada.

The third APEGA Member to make one of the *Avenue* under-40 lists began his career as a summer student with an Encana predecessor. He is now responsible for a restructuring

Movers & Shakers

-photo courtesy Arrow Engineering Inc.

UNDER 40 SUPER STARS
Robert Prybysh, P.Eng., Brendan McCracken, P.Eng., and Rachael L'Orsa, E.I.T., all made it onto the *Avenue* lists.

-photo courtesy APshutter

strategy that led **Encana Corporation** to a 30 per cent increase in value. **Brendan McCracken, P.Eng.**, is only 38, but holds the title of Vice-President and General Manager of the Central Operations Area for Encana.

After graduating with a bachelor's degree in mechanical engineering from Queen's University in Kingston, Ont., Mr. McCracken completed an MBA at the University of Oxford. He held a variety of Professional Engineering and management positions in Alberta, Saskatchewan and British Columbia before joining Encana full-time in 1998. Mr. McCracken became team lead in Encana's Fort Nelson and Canadian New Ventures Business Unit. He led the emerging Duvernay shale play and exploitation teams in the Montney and Horn River plays.

Avenue Calgary reports that 2013 was the year that Mr. McCracken stepped out of his daily job and into a war room. He had been hand-picked, along with six others from across the company, to work with Encana's new President. Their goal was to chart a new path for the company. Mr. McCracken's input led to a restructuring strategy that narrowed the company's focus to only five assets, among other changes. As a result, Encana's value increased by 30 per cent.

Mr. McCracken has an impressive volunteer history, too. He co-founded NetworkCalgary, a group developed to connect students with Professional Engineers, entrepreneurs and academics to discuss career paths. He is also on the Board of Directors of the Calgary Philharmonic Orchestra, and advises the board on strategy development and government relations.

Any time left in Mr. McCracken's schedule? Of course. An endurance athlete, he competes in the Masters World Cup Cross-Country Skiing Championships and is a podium finisher in the BC Bike Race.

HONOUR SET IN STONE

Through his work with APEGA , he had an impact in Alberta, across Canada and into the U.S. But former APEGA CEO **H. Neil Windsor, P.Eng., P.E.(Hon.), FEC, FCAE**, has had an impact in his home province of Newfoundland-Labrador, too. To honour one slice of his contribution at home, the City of Mount Pearl recently named a building there after him. In November, the municipal depot became the H. Neil Windsor Municipal Building.

Mr. Windsor — APEGA CEO from 1996 to 2012 — was Mount Pearl's first town engineer, overseeing development of one of the province's fastest-growing communities. He later represented Mount Pearl in the Newfoundland and Labrador Legislature for 21 years, helping it obtain city status in 1988. He held a number of Cabinet positions, including Finance.

The H. Neil Windsor Municipal Building is home to the city's public works and engineering services divisions. Out West, in the APEGA Calgary office, another important piece of infrastructure bears his name — the Windsor Conference Centre.

STANTEC CEO MAKES POWER 30

To be named one of Edmonton's Power 30 by the *Edmonton Journal*, you require a few key traits. You need to be well-connected and well-known in the community. You need to have the ability, influence and vision to get things done. You need to hold a particular set of skills and work ethic that others admire.

Robert Gomes, P.Eng., met all the criteria, and was named number 5 on the list.

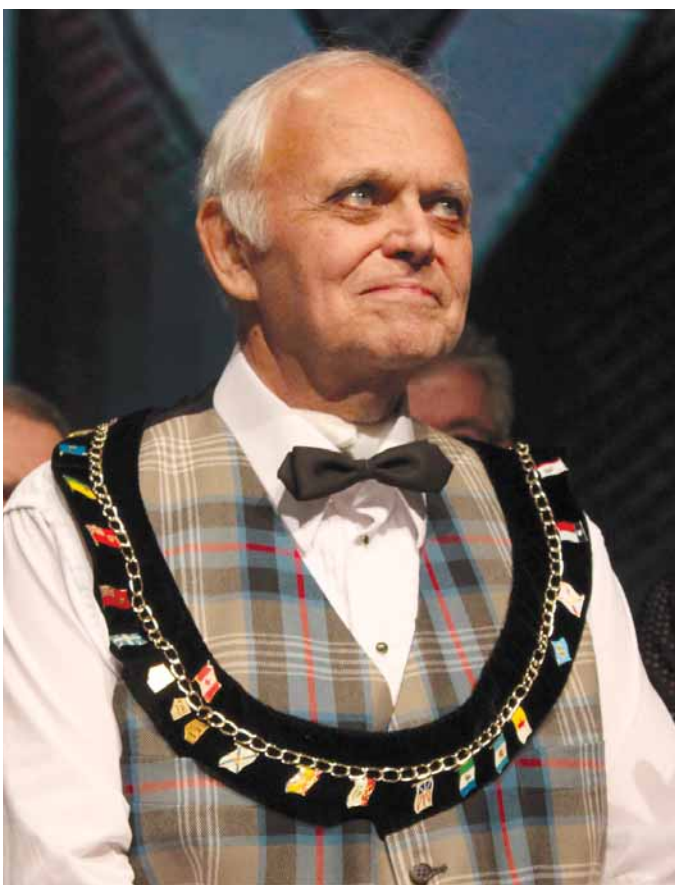
Mr. Gomes was born and raised in Edmonton, attending the U of A for a bachelor's degree in civil engineering. He joined **Stantec Inc.** as an urban land project manager, working through many roles and operational and practice areas.

In 2009, after 20 years with the company, Mr. Gomes became President and CEO. The economy was slumping, but five years after Mr. Gomes took over, revenues and net earnings for Stantec reached record heights. In September he announced the purchase of Desseau Inc., a Montreal-based engineering firm, expressing optimism about Stantec's role in some of Quebec's massive infrastructure projects, being built through public-private partnerships.

At home in Edmonton, Stantec is building the city's tallest tower for its new headquarters. The 62-storey, $500-million building will be located in the new downtown arena district and offer more than 30 floors of luxury condo units.

Mr. Gomes is a past-president of the Consulting Engineers of Alberta and a past-chairman of the Edmonton Non-Profit Housing Corporation. He currently serves on the Board of Directors of the Edmonton Economic Development Corporation.

Also named in the *Edmonton Journal*, as Edmonton's Titans, were **Ralph Young, P.Eng.**, and **Eric Newell, P.Eng.** The Titans were noted for being citizens who shaped the city and received numerous awards for their contributions. Regular readers will know that those awards earned them many mentions in this space.



H. NEIL WINDSOR, P.ENG. . .
. . .building named in his honour
-file photo

GIVING IT THE MAX
EARNS THE MAX

Alberta Venture describes him as a unique combination of lab-honed precision and in-the-field creativity. The founder and CEO of Laricina Energy, **Glen Schmidt, P.Eng.**, received the 2014 Haskayne Management Alumni Excellence (MAX) Award in October.

Mr. Schmidt had an early passion for chemistry, so naturally he enrolled in the chemistry program at the U of C. But after working in the lab, he discovered that he wanted to work more on practical work and moved over to chemical engineering.

After graduation he began a career-defining rotation of field work and academics, spending time working with Getty Oil and Precambrian Shield Resources while completing an MBA part-time at the Haskayne School of Business. At Precambrian, he had moved up to Vice-President in 12 years, learning and integrating all aspects of the business.

After graduating with his MBA, Mr. Schmidt headed up Canadian operations at Pioneer Natural Resources and gained experience in capital markets. He soon began investing in small oil and gas companies, which led to his founding of **Laricina Energy Ltd.** in 2005. A private company, Laricina received approval for the first commercial project to tap the Grosmont carbonate formation in northeastern Alberta. The $520-million Saleski project has identified the company as a leader in the largely untapped carbonate formation.

In September, Laricina received a Canadian patent for its SC-SAGD process, which reduces bitumen viscosity and the amount of steam required per barrel of output. Mr. Schmidt plans to sanction the project this year.

Colleagues describe Mr. Schmidt as quiet yet demanding, and focused more on improvement than outward achievement. His engineering and business backgrounds have allowed him to combine creativity and field knowledge with marketing and strategizing.

Last year Laricina Energy received the APEGA Summit Project Achievement Award for its advancements in the Grosmont and Saleski pilot.

TRAFFIC EXPERTS
HEAD IN RIGHT DIRECTION,
AWARDS SUGGEST

One is focused on managing traffic, the other on navigating it. And the two U of C professors have something else in common: they're both recipients of Killam Research and Teaching Awards from the Schulich School of Engineering,

Lina Kattan, P.Eng., an associate professor in civil engineering, received the Killam Emerging Research Leader

CEA Congratulates the Winners of 2015's Showcase Awards!

Associated Engineering Alberta
•Highway 40 Emergency Flood Repairs – Kananaskis
Award of Merit: Environmental
•Calgary International Airport - Runway Development Project
Award of Merit: Transportation Infrastructure
•Fort McMurray Water Treatment Plant Upgrade
Award of Excellence: Water Resources

CH2M Hill Canada
•Calgary's Airport Trail Tunnel
Award of Excellence: Project Management

DIALOG
•Edmonton International Airport Offices and Control Tower
Award of Excellence: Building Engineering

Golder Associates
•Caring for the Past at the Blackfoot Crossing Historical Park
Award of Merit: Community Outreach and In-house Initiatives
•Suncor: Construction of a No Net Loss Lake for Long Term Sustainability
Award of Excellence: Environmental

McElhanney Consulting Services
•A Traffic Count You Can Count On
Award of Merit: Studies, Software and Special Services

MPE Engineering Ltd.
•Elkana Water Loss Reduction Program
Award of Merit: Community Development
Award of Merit: Sustainable Design
•Turner Valley and Black Diamond Water Supply System
Award of Excellence: Sustainable Design
Award of Merit: Water Resources and Energy Production

Read Jones Christoffersen
•Elbow River Traverse project
Award of Excellence: Community Development

SMA Consulting Ltd.
•Gateway Boulevard Berm Risk Assessment Methodology for Developments Near Freight Rail
Award of Merit: Small Firm – Big Impact
•Clover Bar Wastewater Lagoon Risk and Operation Study
Award of Excellence: Studies, Software and Special Services
•WESS Stage W13 project
Award of Excellence: Small Firm - Big Impact
Award of Merit: Project Management

Stantec Consulting
•City of Edmonton Transit Control Centre.
Award of Merit: Building Engineering
•Stantec in the Community Day
Award of Excellence: Community Outreach and In-house Initiatives
•Highway 63:11 – South of Athabasca River to North of Confederation Way
Award of Excellence: Transportation Infrastructure

Opus Stewart Weir
•Canadian Oilsands Innovation Alliance – Caribou Habitat Restoration
Award of Merit: Natural Resources, Mining and Industry
•Edith Lake to Sarah Lake Transmission Line Construction
Award of Excellence: Natural Resources, Mining and Industry

consulting engineers of alberta

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MAXIMUM EFFORT
Glen Schmidt, P.Eng., earned the 2014 MAX award from the Haskayne School of Business for his ability to apply technical, strategic and marketing skills in the running of his company, Laricina Energy Ltd.
- photo courtesy Laricina Energy Ltd.

Award. Her research program includes advanced traffic management and information systems, Intelligent Transportation Systems (ITS,) and dynamic demand and traveler modeling in response to traffic and transit information

Dr. Kattan holds a B.Sc. and M.Sc. from the American University of Beirut, and a PhD from the University of Toronto. As the Urban Alliance Research Professor in Transportation Systems Optimization, she works closely with the City of Calgary to develop sustainable traffic control and transportation management strategies. She looks at the management of freeway traffic, lanes and congestion pricing, and adaptive signal control strategies based on sensing technology and artificial intelligence.

Models that apply intelligent information systems to public transit, with the goal of improving reliability, are under development by Dr. Kattan. LRT travel time prediction is included in the work. And she's examining strategies to reduce the negative environmental impact of the transportation sector.

Dr. Kattan received the 2010 Early Research Excellence Award from the U of C.

Gérard Lachapelle, P.Eng., meanwhile, has been a professor of geomatics engineering at the U of C since 1988. He also served as department head for eight years. Now, he's received the Killam Award for Graduate Supervision and Mentoring.

Movers & Shakers

TRANSIT RESEARCH AND SUPERIOR SUPERVISION
Professors Lina Kattan, P.Eng., and Gerard Lachapelle, P.Eng., have received Killam Awards from the Schulich School of Engineering.

Dr. Lachapelle began his studies at the l'Université Laval in Quebec. He went on to complete a master's in the United Kingdom and a doctorate in Austria. He worked in research and development for the Department of Energy, Mines and Resources in Ottawa and later as Executive Vice-President for Norstar Instruments Ltd., before joining the University of Calgary as a professor.

Dr. Lachapelle was part of an industry team that started the first GPS activities in Calgary. He holds the Canada Research Chair in Wireless Location and created the Position, Location and Navigation (PLAN) Group. PLAN is dedicated to the development and improvement of wireless positioning and navigation technologies for indoor and outdoor use, including signal processing and sensor augmentation for the Global Navigation Satellite System.

In addition to publishing more than 500 papers and receiving national and international awards, Dr. Lachapelle has supervised more than 100 graduate students.

WHO'S MOVING WHERE

Associated Engineering Alberta Ltd. has announced the appointment of **Christopher Skowronski, P.Eng.**, of Sturgeon County to the position of Vice-President of Infrastructure. Mr. Skowronski has over 26 years of experience. He previously served as Division Manager of Infrastructure for Central Alberta for the company. **Ian Wright, P.Eng.**, of Calgary, was appointed to the role of Senior Water Specialist at Associated Engineering. Mr. Wright was previously Senior Vice-President of Water.

Chan Wirasinghe, P.Eng., of Calgary, has been appointed to the Canadian Consulting Engineering Awards Jury. Mr. Wirasinghe has been a professor with the University of Calgary since 1976 and was Dean of Engineering when the department became the Schulich School of Engineering.

The Council of the Engineering Institute of Canada has elected **Om Malik, P.Eng.**, as its 2014-2015 President. Dr. Malik is Professor Emeritus of electrical engineering at the University of Calgary.

Michael Walker, P.Eng., of Langdon, is the new Chair the Young Professional Network of the Association of Consulting Engineering Companies — Canada for 2014-2015. Mr. Walker has worked on projects across Canada, including reconstruction of the Trans-Canada Trail following Calgary's 2013 floods.

Shahid Jamil, P.Eng., of Houston, Tex., has been appointed Secretary of the Safety Technical Subcommittee of the Petroleum and Chemical Committee, IEEE Industry Applications Society. Mr. Jamil is an electrical engineer with BP America Inc.

This & That

GOOD RECRUITING

Mohamed El Daly had just started in his role as APEGA Director of Outreach and Product Services when he was featured in *Avenue Edmonton* as one of its Top 40 Under 40. The November issue highlighted Mr. El Daly's mission to engage young people in math and science, and expose them to the Engineering and Geoscience Professions. Since that time, Mr. El Daly has put his skills and experience to work at APEGA, focusing on outreach with students, women and Aboriginal communities.

Then in December, another honour was bestowed upon Mr. El Daly, when he was named as one of the 2014 recipients of the Human Rights Award of the John Humphrey Centre for Peace and Human Rights. The awards commemorate International Human Rights Day by celebrating the people and organizations of Edmonton that have dedicated themselves to making the city a better place to live for all.

In his former position, Mr. El Daly was Director of DiscoverE with the University of Alberta. DiscoverE is a year-round program for children and youth, operated in 72 communities across Alberta and the Northwest Territories. While leading the program, he saw the number of girls taking part increase by almost 10 per cent. His secret? Present and teach science, technology, engineering and math in a way that resonates with different groups. Mr. El Daly has seen the effectiveness of hands-on experience for children. He strives to provide more dynamic activities to expose students to technology.

APEGA outreach aims to inspire children and youth in engineering and geoscience. Volunteer opportunities exist for Members to share their passion about their profession and engage kids with fun experiments and activities.

Mohamed El Daly. . .
. . .on the *Avenue*, making the city better

-photo by Corinne Lutter

GOOD MESSAGING

Connecting with stakeholders is important to APEGA, and we've recently been awarded for our efforts. The Association of Marketing and Communication Professionals (AMCP) has recognized three APEGA communications campaigns with MarCom Awards.

For our *Annual Report 2013: 10 Stories About a Re-energized and Refocused APEGA*, we picked up platinum awards in three categories — annual report, writing and design. Gold awards went to *The PEG* in the magazine, photography and writing categories. And we received a gold award for our 2013 National Engineering & Geoscience Month campaign launch, in which APEGA Professional Engineers from the civilian ranks took on military engineers in a challenge to build the most effective trebuchet from limited supplies.

The MarCom competition attracted 6,000 entries from 34 countries. Winners range from individuals to media conglomerates and *Fortune 500* companies.

Starting the Conversation

APEGA Adopts Champions Collaborative to Gather Member Feedback On Changes to The Engineering and Geoscience Professions Act

It is often said that every good conversation begins with good listening. This spring, a special team of APEGA volunteers are putting that wisdom into practice as they consult their peers in a major review of *The Engineering and Geoscience Professions Act (EGP Act)*. Drawn from across the province, they make up the Champions Collaborative, whose purpose it is to discuss regulatory issues and the contents of the Act.

The collaborative is a major piece of the APEGA Legislative Review, which is a business plan priority for the Association.

APEGA has adopted this collaborative model as a way to spur meaningful conversation about *The EGP Act*. The collaborative is made up of about 40 Members, working together to stimulate discussion of key issues and explore solutions. Representing Members, Permit Holders and APEGA statutory boards and committees, the Champions will share what they hear with the Association's legislative review team.

The EGP Act hasn't gone through a major update since the 1980s, but over the past three decades there have been significant changes within the Engineering and Geoscience Professions and the myriad of industries that rely upon them. An updated Act will be clearer and more relevant than the current version, improving the self-regulatory process and protection of the public.

"This is a once-in-a-lifetime opportunity to contribute to the professions," says one of the Champions, Roghoyeh Salmeh, P.Eng., a project manager with ATCO Electric in Calgary. "The Association is being proactive by making changes to the legislation so it remains relevant in today's society."

The APEGA Legislative Review team has heard concerns in surveys of the organization's statutory boards and committees.

"We're examining important topics," says APEGA Registrar Carol Moen, P.Eng. "We encourage everyone to bring their insights and solutions forward in detail during our Member consultations."

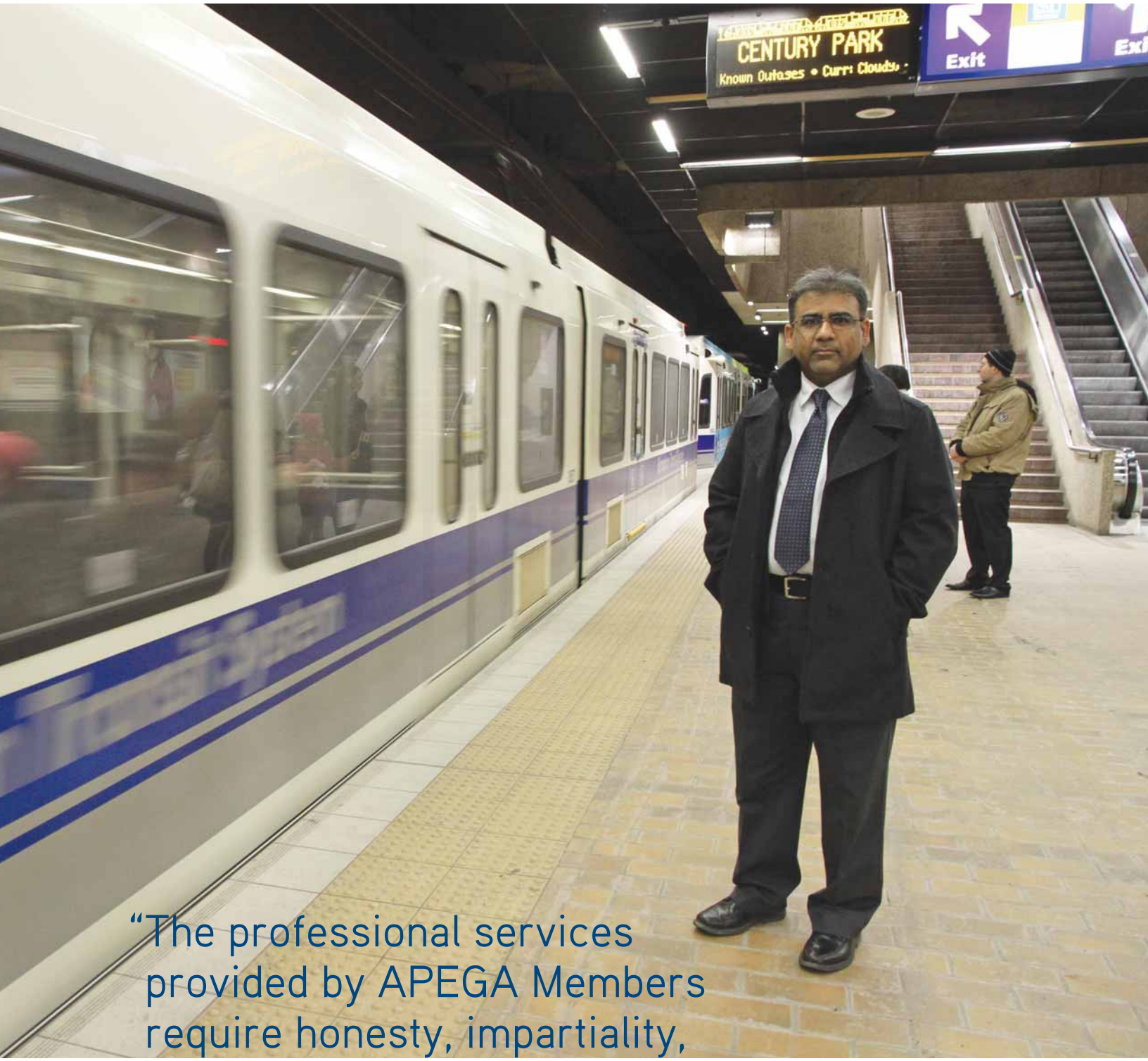
Champion Samantha Oler, P.Eng., a senior engineer with ATCO Gas, Lethbridge District Operations, says that one of the greatest impacts will be increased efficiencies within self-regulating processes. "By expressly delegating some authority, I speculate that administration will be more streamlined and run more effectively," says Ms. Oler.

In the months ahead, Dr. Salmeh, Ms. Oler and other Champions from across Alberta will be out in their communities — from Grande Prairie in the north to Lethbridge in the south — sparking important dialogues about self-regulation and legislative changes. Presentations, webinars, town hall meetings and information sessions will be held from April until the end of June, giving Members the chance to share their opinions and ideas.

While part of the legislative review includes minor revisions, key topics have emerged related to scope of practice, the Registrar's authority and membership categories. Another important topic being addressed is the licensing of internationally educated graduates.

In the long term, demand for Professional Engineers and Geoscientists in

Alberta is forecast to be strong, and internationally educated professionals are part of the solution. "The legislation and regulations need to support these opportunities while maintaining public safety," says Champion Craig Maunder, P.Eng., Superintendent of Operations for the City of Medicine Hat Municipal Works Department.



-photo by Corinne Lutter

"The professional services provided by APEGA Members require honesty, impartiality, fairness and equity, and must be dedicated to the protection of public health, safety and welfare"

Sadiq Pirani, P.Eng., *Edmonton*

SHAPING THE PROFESSIONS

The review is also an important opportunity to refresh everyone's knowledge and understanding of professional practices and standards. In the end, "we'll have professions that are stronger and take advantage of Members' input and knowledge," says Mr. Maunder.

Having graduated from the University of Alberta's mechanical engineering faculty in 2008, Mr. Maunder is early in his career. He decided to get involved with the review as a way to shape the future of his profession. It's an opportunity to help influence decisions that may impact the way he practises for the next 30 years.

"Looking ahead, we need to make the changes necessary to make sure the profession stays strong and well regulated," says Mr. Maunder.

Practising as a Professional Engineer is a privilege in Canada, notes Sadiq Pirani, P.Eng., a principal engineer with Edmonton's Trans-Plan Inc., a transportation engineering company. That's what motivated him to join the Champions Collaborative.

"Being a Responsible Member for a self-regulatory organization, I like to fulfill my duties to the professions. I consider the role of the Champions Collaborative as an excellent opportunity to achieve this," he says.

Mr. Pirani brings experience to the table, having been involved in a similar legislative review process in Ontario. He believes it's important to update the current legislation to reflect the latest technological changes, and to address economic trends and environmental impacts, including the challenges of processing and transporting energy resources and the building and maintenance of sustainable infrastructure.

"The professional services provided by APEGA Members require honesty, impartiality, fairness and equity, and must be dedicated to the protection of public health, safety and welfare," he emphasizes.

For some Champions, like Dr. Salmeh, being part of the collaborative is a natural extension of the work they're already doing in the community and as APEGA volunteers. Dr. Salmeh is an ambassador within the engineering community, not only in her role as Chair of the Calgary Branch Executive but also in her outreach

A VIEW FROM THE HAT
From left, Craig Maunder, P.Eng., Superintendent of Operations for his city's municipal works department, and James Johansen, P.Eng., Engineer Manager with Scheffer Andrew Ltd., will be consulting APEGA Members in the southern Alberta community of Medicine Hat.
-photo by Luke Fandrich/Editing Luke

"This is a once-in-a-lifetime opportunity to contribute to the professions"

Roghoyeh Salmeh, P.Eng.

initiatives, including volunteering for APEGA Science Olympics.

She is grateful to be part of the review and the collaborative process. "I'm proud of the Association for doing this, because it is important to listen to fellow Members and stakeholders in order to make the changes required."

COMMUNITY CONVERSATIONS

How the conversations take place will vary from community to community. Lethbridge, for example, will likely have a town hall meeting. The goal, says Ms. Oler, is to ensure people have the knowledge they need to have an informed discussion.

To engage Members in the Capital Region, Mr. Pirani, as Chair of APEGA's Edmonton Branch Executive, plans to take advantage of monthly luncheons, professional development workshops, industry-academia mixers, and other professional and social events.

APEGA has nine active branches representing different regions across the province. Most of the regions are represented by two Champions, which will help move the discussions forward in a timely manner. In Calgary and Edmonton, the province's two largest centres, extra professionals are part of the collaborative, so more Members can be reached and the scope of the discussion widened.

Champions come from a variety of professional backgrounds and disciplines, which will further help to broaden networking avenues. Team members in Medicine Hat, for instance, are from municipal and industrial backgrounds.

DRAFT LEGISLATION TARGETED FOR 2019

The collaborative is just one part of a consultation that will continue into 2019. With recommendations from APEGA in hand, the Government of Alberta will draft the actual legislation, so stakeholder input is critical to the project's success.

"We are open to making changes that improve our services to Members and Permit Holders. But more critical than that is continuing to serve the public interest in a changing society," concludes Ms. Moen. "That's why it is so important that as many Members as possible provide their feedback and input throughout the process."

LEGISLATIVE REVIEW CHAMPIONS

Dr. Ahmed Ali, P.Eng., Lethbridge

Aldous Walters, P.Eng., Fort McMurray

Ana Mayumi Tanaka, E.I.T., Grande Prairie

Dr. Anthony Cadrin, P.Geol., Calgary

SIDEBAR

TAKE PART IN THE CONVERSATION

Champions will be in the community talking with APEGA Members and Permit Holders throughout April, May and June. The following consultations are scheduled.

- Calgary, Thursday, May 21, and Friday, May 22
- Red Deer, Monday, May 25
- Edmonton, Wednesday, May 27
- Fort McMurray Friday, May 29

For more information or to register, visit apegalegislativereview.ca.

LEARN MORE ABOUT THE LEGISLATIVE REVIEW

APEGA Summit 2015 Professional Development Program
Stream Two: Responsibilities of Self-Regulation
April 23-24
See pages 27 to 34 for more information on Summit 2015
or
Visit apegasummit.ca

LEGISLATIVE REVIEW CHAMPIONS

continued

Anil Gupta, P.Eng., FEC, FGC (Hon.), Calgary
Brennan MacDougall, P.Eng., Calgary
Brian Morrison, P.Eng., Grande Prairie
Dr. Charles Henderson, P.Geol., Calgary
Charles Welsh, P.Geo., Calgary
Chris Ward, P.Eng., Edmonton
Craig Maunder, P.Eng., Medicine Hat
Curtis Alexander, P.Eng., Stony Plain
Dr. Dale Leckie, P.Geol., Calgary
Dr. Deborah Spratt, P.Geo., FGC, FEC (Hon.), Calgary
Gobind Khiani, P.Eng., Calgary
James Ferguson, P.Eng., Calgary
James Johansen, P.Eng., Medicine Hat
Jason Vanderzwaag, P.Eng., Fort McMurray
Jennifer Enns, P.Eng., Calgary
Katherine Diaz, P.Geo., Calgary
Ken Mitchell, P.Geoph., Calgary
Kirstine Hull, P.Eng., Edmonton
Mark Bradshaw, P.Eng., Calgary
Mary Ann Byrd, P.Eng., FEC, FGC (Hon.), Medicine Hat
Dr. Michelle DeWolfe, P.Geo., Calgary
Monika Bhardwaj, P.Eng., Edmonton
Dr. Nathan Schmidt, P.Eng., Edmonton
Naval Tauh, P.Eng., Edmonton
Neda Boroumand, G.I.T., Calgary
Paul van den Camp, P.Eng., Edmonton
Peter Doell, P.Eng., FEC, FGC (Hon.), Edmonton
Dr. Rachel Newrick, P.Geol., P.Geoph., Calgary
Dr. Rob Vestrum, P.Geo., Calgary
Dr. Roghoyeh Salmeh, P.Eng., PMP, SM IEEE, Calgary
Sadiq Pirani, P.Eng., Edmonton
Samantha Oler, P.Eng., Lethbridge
Stephen Huber, P.Eng., Red Deer
Stephen Hunt, P.Eng., Calgary
Suresh Sharma, P.Eng., Edmonton
Tracey Stock, P.Eng., LL.B., Calgary
Victor Benz, P.Eng., FEC, FEG (Hon.), Stony Plain
Dr. Vincent Chiew, P.Eng., FEC, FGC (Hon.), Calgary

SPECIAL ACKNOWLEDGEMENT

APEGA acknowledges the following employers for their support of the Champions Collaborative.

ATCO Electric Ltd.
ATCO Gas Ltd.
Benz Consultants Ltd.
City of Edmonton
City of Calgary
City of Medicine Hat
Dow Chemical
EPCOR
Enbridge
Fluor Canada
Golder Associates Ltd.
ISL Engineering and Land Services Inc.
North West Redwater Partnership
NOVA Chemicals
Scheffer Andrew Ltd.
Syncrude Canada Ltd.
TD Stock Professional Corporation
TransCanada
Trans-Plan Inc.
Weyerhaeuser
WorleyParsons

4 questions to ask about critical illness

The financial impact can be as devastating as the disease itself.
Because of medical advances, Canadians are more confident about physically surviving cancer or other critical illnesses than surviving the impact on their net worth. Find out if you're financially prepared for a critical illness.

1 Are you at risk for a critical illness?

About **2 in 5 Canadians** will develop cancer in their lifetimes. In 2013, it was estimated that:[1]

- **96,200 Canadian men** will be diagnosed with cancer
- **91,400 Canadian women** will be diagnosed with cancer
- **Over 500 Canadians** will be diagnosed with cancer every day

About **9 in 10 Canadians** already have at least one risk factor for heart disease and stroke. In Canada, there is:[2]

- 1 stroke every **10 minutes**
- 1 heart attack every **7 minutes**

2 What are your chances of surviving it?

- **63% of Canadians** diagnosed with cancer are expected to survive for **5 years or more** after diagnosis[1]
- The cardiovascular death rate in Canada has **declined by nearly 40%** in the last decade[2]
- **1.3 million Canadians** are living with the effects of heart disease, and **315,000** are living with the effects of stroke[2]

3 Can you afford the financial impact?

- Cancer drugs taken outside the hospital – and not automatically covered by the government – cost about **$20,000** for a course of treatment. Newer drugs cost **over $65,000**.[1]
- Recovery from heart disease and stroke can **continue for years**, resulting in more medical bills and lost income and productivity[2]
- Family caregivers also have to deal with **wage loss** and the real potential of a **decreased standard of living**[3]

4 How can critical illness insurance help?

The **Engineers Canada-sponsored Critical Illness Plan** pays a lump sum upon diagnosis of a covered condition. You and your spouse may apply for benefit amounts **between $25,000 and $1 million** to help meet the costs associated with surviving a serious illness, including cancer, heart attack and stroke.

Choose from two types of coverage:

- **Essential** – covers **6** conditions
- **Enhanced** – covers **18** conditions

LEARN MORE AND APPLY FOR:

Engineers Canada-sponsored Critical Illness Plan

www.manulife.com/APEGA/CI

1-877-598-2273 (Monday–Friday, 8 a.m. to 8 p.m. ET)

Sponsored by: engineerscanada ingénieurscanada

APEGA

Manulife

Sources: [1]Canadian Cancer Statistics, 2013. [2]Heart & Stroke Foundation Statistics, 2013.
[3]Colleen Nelson B.Ed, PBCE, "The Financial Hardship of Cancer in Canada: A Literature Review," Canadian Cancer Society, 2010.

Underwritten by The Manufacturers Life Insurance Company.

INVEST IN THE FUTURE OF YOUR PROFESSION

By giving to the APEGA Education Foundation (AEF) you are investing in the education of Alberta's future Professional Engineers and Geoscientists.

Your donation will help young people learn about rewarding and meaningful careers in engineering and geoscience. It will also reduce financial barriers to university students considering engineering and geoscience careers.

Invest in the future of your profession by donating to the APEGA Education Foundation.

Donate or learn more about this registered charity at apega.ca/educationfoundation.

APEGA | education FOUNDATION

Investing in a Vision

The APEGA Education Foundation has begun the New Year with a renewed focus on underrepresented groups and students in financial need. Not to mention some ambitious fundraising goals

BY **CORINNE LUTTER**
Member & Internal Communications Coordinator

With its 20-year anniversary just around the corner, the APEGA Education Foundation (AEF) has unveiled new mission and vision statements to guide the organization into its next 20 years.

The mission statement defines the foundation's overall purpose: *We strengthen the Engineering and Geoscience Professions in Alberta by funding STEM outreach, providing financial assistance to students and encouraging more post-secondary capacity.* (STEM stands for science, technology, engineering and mathematics.)

The vision statement reflects the foundation's aspirations for the future: *Albertans are excited about careers in engineering and geoscience and have ready access to them.*

The foundation has never had a vision statement, and its mission statement needed updating to more clearly describe its work.

"The new mission and vision statements reflect our core values and will help guide the board's strategic decision making as we begin rolling out our new business plan, which sets several ambitious goals for the next five years," says AEF President Dan Motyka, P.Eng., FEC, FGC (Hon.), a past president of APEGA. "They also give our donors — who are mostly APEGA Members — a better understanding of what the foundation does to help attract young people into the professions."

AEF's mission statement was approved in December. It sets a new direction and focus for the foundation, which was founded in 1996 and since then has disbursed about $2 million in scholarships, bursaries and outreach funding in Alberta.

BIG PLANS

One of the primary goals of the new business plan is to increase the number and value of the scholarships and bursaries awarded to post-secondary engineering and geoscience students, with a focus on those in financial need. Currently, the foundation awards about 50 scholarships and bursaries each year, valued at about $195,000.

"What drives many of our donors to give is being able to help students who can't go to university because of the cost. Currently, engineering tuition at Alberta universities exceeds $6,000 annually and it continues to rise," says Mr. Motyka. "So we're going to focus on kids who have financial need to help eliminate that barrier and ensure that education remains accessible to everyone."

To do this, one of the objectives in the new business plan is to increase the value of all scholarships and bursaries to at least $5,000 each. Currently, they range in value from $1,000 to $5,000. To meet this target, the foundation needs to raise $72,000 more each year than it does now.

The foundation also wants to provide more financial support to groups that are underrepresented in the professions, including women and Aboriginals, by increasing the number of bursaries available to them. Right now, the foundation awards $55,000 in these bursaries each year, which it hopes to double to $110,000.

This ties closely to the foundation's other primary goal in its business plan: to increase outreach funding to attract more Alberta youth — girls and Aboriginals in particular — into Professional Engineering and Geoscience careers.

"Students want to make a difference in society, yet many don't know how engineering and geoscience could help them meet that goal," says Mr. Motyka. "We have an opportunity to give them that exposure by funding organizations that open kids' minds to the exciting opportunities in the STEM fields."

Over the next five years, the foundation wants to increase outreach funding from $95,000 to $145,000 annually. It already provides outreach funding to the universities of Alberta, Calgary and Lethbridge, Red Deer College and organizations like Cybermentor and the Alberta Women's Science Network. APEGA and AEF are also working on an agreement which would see the foundation take over APEGA's current outreach funding to outside organizations, valued at about $400,000 annually.

Says Mr. Motyka: "The foundation supports outreach programs to engage young people and encourage them to enter the fields of engineering or geoscience. Outreach is critical to maintaining a diverse membership and to ensuring there are enough professionals to meet market demand."

Reaching out to more young women and Aboriginals is an important step in growing the diversity of the professions, he adds.

Currently, 20 to 25 per cent of undergraduate engineering students at the University of Alberta and University of Calgary are women. In geosciences, up to half of undergraduate students are women. But at the professional level, the proportion of women drops by about 50 per cent. Only about 11 per cent of APEGA's membership is female. APEGA and AEF, along with a number of other organizations, are working to increase the number of women in the Engineering and Geoscience Professions to 30 per cent by 2030.

Similarly, Aboriginal peoples are underrepresented in Professional Engineering and Geoscience. It's estimated that fewer than 100 Aboriginal people in Alberta are members of the professions. If they were represented to the same extent they are found in Alberta's population — 5.8 per cent, according to the 2006 Statistics Canada census — there would be about 3,000 Aboriginals using APEGA designations.

ACTION PLAN

These are the new goals of the foundation, but how to achieve them?

To start, the foundation plans to hire an executive director and an assistant to enhance its fundraising capability and capacity. It is hoped the new director will be in place by late 2015 or early 2016. Until then, the foundation's dedicated volunteer board will continue to work on an action plan to increase the number of donors and the amount the foundation invests. The aim is to increase the number of donors from 4,000 to 5,000 and to increase their average donation from $75 to $100. This would have an impact of $200,000 annually.

Successful implementation of this plan will depend on the generosity of APEGA Members, who have shown increasing support over the past several years. In 2013, individual donations topped $262,000. This was almost double 2011, when donations totalled $133,000. But there's still some work to do if the foundation wants to meet its long-term goal of $400,000 a year in individual donations.

"We're asking APEGA Members who want to support a worthy cause to make room for an investment in Alberta's youth," says Mr. Motyka. "Your investment will help sustain the professions by exposing youth to rewarding careers and removing financial barriers."

If you make a donation of over $200, don't be surprised to get a thank-you call from a foundation representative. "Funding is about building relationships," he notes. "We want to make a personal connection with donors and let them know the impact their donations will have."

Board members will also be cultivating new relationships by either calling or meeting face-to-face with potential donors in their network. "It's about creating awareness," says Mr. Motyka. "Once people know about the foundation and what our mission is, they're more likely to make a donation."

The foundation is also asking corporations — APEGA Permit Holders in particular — to invest in the education of our province's future P.Eng. and P.Geo. workforce. The goals of the foundation — to attract vibrant, smart young people into the professions — overlap well with the goals of engineering and geoscience companies, who depend on the availability of skilled professionals to help their companies prosper and grow.

"With Professional Engineering and Geoscience labour shortages forecast for the long term, Permit Holders have a stake in the education of young engineers and geoscientists," says Mr. Motyka.

"We're asking APEGA Members who want to support a worthy cause to make room for an investment in Alberta's youth. Your investment will help sustain the professions by exposing youth to rewarding careers and removing financial barriers."

DAN MOTYKA, P.ENG., FEC, FGC (HON.)
APEGA Education Foundation President

DONATIONS ARE IN GOOD HANDS

The foundation works directly with leaders in post-secondary education and outreach organizations to make sure donations are invested wisely and go where they'll have the biggest impact.

"Members who have an interest in growing the professions but are unsure how to invest in it will find that AEF is a useful tool — we remove the guesswork," says Mr. Motyka.

Your investment in the future of the Engineering and Geoscience Professions will live on — not only through the endowments created and built through your support, but through the meaningful work of young people entering the professions, creating wealth, sustaining the environment and enhancing the quality of life in our communities.

HOW TO GIVE

Giving to the APEGA Education Foundation is straightforward. There are four donation options.

- Attach a cheque for the foundation to your annual APEGA membership renewal form and mail it in
- Donate online any time through the APEGA Member Self-Service Centre
- Donate online or begin monthly donations through CanadaHelps.org
- Download a donation form from the AEF website at apega.ca/AEF and mail in a cheque

APEGA education FOUNDATION

Founded in 1996, the APEGA Education Foundation is an arms-length, Member-run group dedicated to helping ease the financial burden of students on their way to becoming Professional Engineers and Geoscientists

$2 MILLION
Total scholarships, bursaries and outreach funding dispersed by AEF since 1996

4,000+
Number of APEGA Members who ever donated to AEF

= 200 APEGA Members

SCHOLARSHIPS + BURSARIES

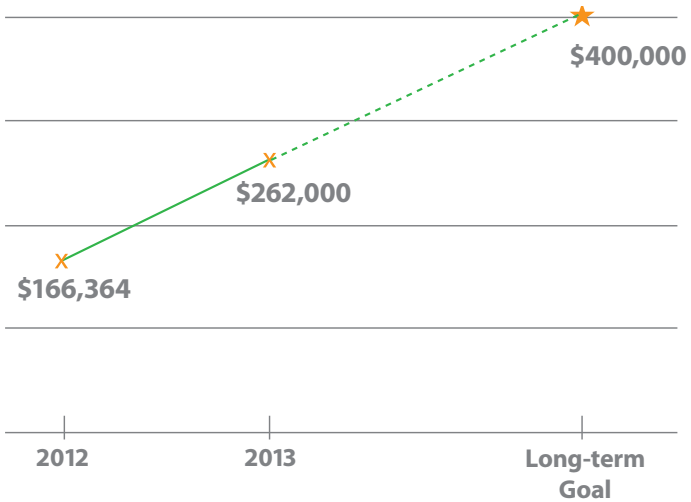
50 x = **$195,000** awarded each year

10 Number of Millennium Scholarships awarded annually to children of APEGA Members, valued at $3,500 each

NEW Two **AEF/ Enbridge Bursaries** introduced in 2014. Valued at $1,500 each, they are available for **Treaty 8 First Nations** students studying engineering or geoscience at the University of Alberta or University of Calgary.

JUN
Applications open for scholarships and bursaries

INDIVIDUAL MEMBER DONATIONS

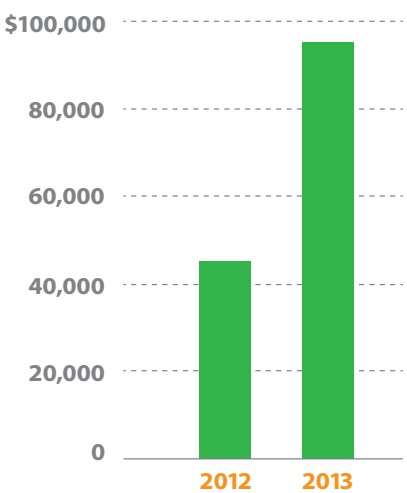


"People do not have to give huge amounts to make a difference. I just wish more people would go ahead and donate."

Brenda Wright, P.Geol, FGC, FEC (Hon.)
AEF Donor

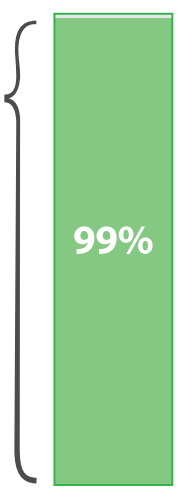
OUTREACH FUNDING

Funding increased significantly in 2013. Some of the programs it supports include **DiscoverE Day Camps** hosted by the University of Alberta Faculty of Engineering and **Minds in Motion Day Camps** hosted by the University of Calgary Schulich School of Engineering



99 per cent of the funds disbursed by AEF have gone directly to students through scholarships and bursaries or outreach programs

$145,000
Annual funding provided to different organizations for outreach programs



Celebrate National Engineering & Geoscience Month

March 1 – 31

www.apega.ca/NEGM @APEGA_AB

APEGA

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High Notes

What if a disability robbed you of a hobby, a sport or even a routine activity that gave your life meaning, happiness and independence? And what if someone created a device that returned it to you? Welcome to the world of Tetra and its volunteers

BY **CORINNE LUTTER**
Member & Internal Communications Coordinator

When he was 14, Dave Skelly taught himself to play guitar by listening to rock albums. Over the years, he performed in various bands, dabbling mostly in country, rock and blues. It was a fun way for him to share his love of music with others. But that all ended two years ago when a brain injury left him with limited use of his right side and rendered him unable to work or enjoy his favourite hobby.

"I'm lost without my guitar," says the former oilfield worker. "I played music for a long time — more than 40 years. It's in my blood."

So when his doctor at the Glenrose Rehabilitation Hospital in Edmonton told him about the Tetra Society — a group of volunteers who create customized assistive devices for people with physical disabilities — he went online to see if the society could help. He was thrilled to discover that a design for a pedal-controlled assistive guitar strummer already existed in Tetra's database. All he needed was someone to build it for him.

Enter APEGA Member Dan Twaites, E.I.T., a project estimator with Cruickshank Group in Sherwood Park.

Last summer, Mr. Twaites answered a call in the e-PEG — APEGA's electronic newsletter — to join a chapter of the Tetra Society forming in Edmonton. Along with Stuart Jamieson, P.Eng., and a university engineering student, Mr. Twaites is one of three volunteers who signed up.

Mr. Skelly is his first client. But the idea of helping people was planted in his brain before he'd heard about the new Tetra chapter. One summer, Mr. Twaites worked for an outdoor adventure company in the Okanagan Valley in B.C. It used adapted equipment so people with physical challenges could hike, bike and kayak. That's when I realized that there are people with disabilities who are, in fact, very able," he says. "I'm interested in taking my engineering background and doing what I can to help people who have a hard time in the built world."

In many cases a simple assistive device — designed by an inventive volunteer — is all it takes for someone to overcome a barrier and improve someone's quality of life. Indeed, that's the

-photo by Corinne Lutter

READY TO ROCK
Dan Twaites, E.I.T., left, is building an assistive guitar strummer for Dave Skelly, who has limited use of his right side after a brain injury.

philosophy behind Tetra: the recognition that people are not limited by their disabilities but by obstacles in their living environments.

Sometimes the challenges are considerable. In 1987 a skiing accident left Sam Sullivan paralyzed. You may have heard his name before — Mr. Sullivan went on the become Vancouver's mayor. He needed some low-tech adaptations in his apartment. He couldn't shower, cook or even turn a doorknob on his own. So he wrote a letter to APEGA's B.C. counterpart, APEGBC, seeking help. A Professional Engineer took up the challenge, spending six months coming up with creative solutions to expand Mr. Sullivan's independence.

It wasn't long after that the Tetra Society was launched. Its name comes from the Greek word tetraplegic, which refers to a person with some disability in all four limbs.

Today, there are 45 Tetra chapters across North America, including ones in Calgary, Lethbridge, Medicine Hat and Red Deer. Over the years, Tetra's skilled volunteers — many of them Professional Engineers — have built 5,000 custom devices to assist people of all ages and backgrounds.

Some projects are daily living aids. Some help clients in their workplace. Others are recreational. All the designs are shared on Tetra's searchable online database.

"Any area that a person with a disability finds an obstacle in — and they can't find a solution that already exists in the marketplace — they can ask Tetra for help," explains Brittney Neunzig, coordinator for the Edmonton chapter. "They don't need to have a specific idea of what they need. They just have to be able to say this is an obstacle in my life. It's the job of the volunteers to come up with the ingenious ideas that they have been coming up with."

What makes Tetra unique is the custom work volunteers do. Sometimes, they tweak existing equipment, like a walker or a wheelchair, to meet a client's specific needs. But often they build devices from scratch, taking everyday materials or products and putting them together in resourceful new ways.

"We try to use off-the-shelf items wherever possible," says Mrs. Neunzig. Clients pay for the supplies, so this helps keep the cost down. "We put a lot of effort into minimizing the custom fabrications so it's inexpensive and easily maintained."

With the guitar strummer, for example, the parts include a foot pedal from a drum hi-hat stand, a spring-loaded lever, bicycle brake cables, Velcro and lightweight aluminum. A guitar pick attaches to the lever, cable and pedal assembly, allowing Mr. Skelly to move the pick up and down with his left foot and strum the guitar strings. The lever attaches on the front of the guitar with Velcro, and the guitar is strapped on in the usual way, allowing the player to hold the guitar's neck and fret the strings with the left hand.

"So it just transfers all the mechanics of playing guitar to portions of Dave's body that he's able to use," explains Mr. Twaites.

Parts for the strummer are being sourced and building will soon begin. There will be a learning curve for Mr. Skelly, of course, but he's looking forward to playing some Led Zeppelin, teaching a neighbour down the hall to play and maybe even joining a band again. "The people next door don't know what's coming," he jokes.

Mr. Twaites, who hopes to get his P.Eng. designation early this year, is also looking forward to working with other clients to come up with solutions to their challenges. Word is getting out about the new Edmonton chapter and requests are coming in. With one in five Canadians living with a disability, including an estimated 500,000 in Alberta, there's always a need, says Mrs. Neunzig. She's a paraplegic herself, injured in a snowmobile accident when she was 13.

When she became pregnant with her first child in 2008, she started looking for customized equipment that would help her parent from a wheelchair, such as a crib with a sliding door that she could reach into rather than over. There was nothing on the market. She did some research and discovered Tetra, but since there was no active chapter in Edmonton, an uncle with carpentry skills took up the task.

After her second child was born, she began compiling a list of resources to help out other disabled parents. Tetra still wasn't active in Edmonton, so she contacted Tetra's head office and offered to get the ball rolling.

"I realized Tetra would be a great resource for Edmonton, not only for disabled parents but for the disabled community in general," says Mrs. Neunzig. "It's a great addition to the other services that are out there for people with disabilities."

While the Edmonton chapter is just getting off the ground, Tetra volunteers have been active in Calgary since the late 1990s. A core

SIDEBAR

BREAKING DOWN BARRIERS

Early in January, the Calgary Tetra chapter got a special request from Open Sky Pictures, a television production company. Could volunteers create a device that would allow a quadruple amputee to curl — as in the sport of curling — from his wheelchair? the company asked.

Open Sky is producing a documentary series about the challenges faced by disabled Canadians. The series, *Invincible*, is told through the eyes of 21-year-old Daniel Ennett, who lost his arms and legs to meningitis when he was a little boy.

To meet the film crew's tight deadline, a Tetra volunteer spent his day off designing a device to get Mr. Ennett on the ice and in the action. It consists of a special curling stick that attaches to the armrest at the front of his wheelchair with a magnetized plug. A notch at the other end of the stick fits onto the handle of the curling rock — similar to a shuffleboard stick but about five feet long. With the stick in place, Mr. Ennett can drive his wheelchair from the hack to the hog line, and use the momentum to propel the rock down the ice. He was able to join the Edmonton Rocks Wheelchair Curling club for a game at the Jasper Place Curling Club.

GADGET GUY
For Bill Caswell, P.Eng., volunteering with Tetra is an opportunity to "build some gadgets" and do some good. Many of his inventions — including the custom rolling stool he's working on here for a client with mobility challenges — are built in his garage. Inset is a rocking device Mr. Caswell built to help load a wheelchair into a car trunk. The device supports the wheelchair's weight, while elevating the folded wheelchair into position so it can easily be loaded into the trunk.
-photos courtesy Bill Caswell, P.Eng.

group of about 18 volunteers — Professional Engineers, machinists, millwrights, electricians and other mechanically inclined folks — meets monthly to review requests and brainstorm solutions. Last year, the volunteers spent 1,200 hours working on about 80 projects.

While many Tetra volunteers work in their garage or basement, Calgary volunteers also have access to a 900-square-foot workshop, courtesy of the Calgary Drop-In & Rehab Centre, an agency that provides services for homeless and low-income people. The centre donates the space for the workshop and lets Tetra volunteers use machinery in its woodworking shop. Tetra's workshop is also equipped with machinery donated by a volunteer who was downsizing, and the society has a supply of donated metal, wood and pipes on hand, which helps keep costs down for clients.

"Our volunteers love to come together to work on projects," says Tetra's Calgary chairman Allan Monk. "I think what they love, as much as inventing something, is sharing ideas with other people who are very creative."

Of course, they're also motivated by the opportunity to change someone's life. "It's the joy on their face, when something is delivered and the client responds with such excitement. It's excitement you'll never forget," he says. "It's a simple thing, but amazing."

Mr. Monk, a retired opera singer, got involved about three years ago when his

mother, now deceased, was living in a care centre. He contacted Tetra to see if someone could build a portable bowling lane for residents in wheelchairs. A ramp was built, allowing residents to sit on either the left or right side and send small bocce balls down three metres of artificial turf towards the bowling pins.

"My mother, when she was 98, could go once a week to the bowling activity at the care centre and actually have an experience like being in a bowling alley," Mr. Monk fondly recalls.

The care centre still uses the ramp five days a week. It's the most popular recreational activity there.

GADGETS AND GIZMOS

Long-time Calgary volunteer and APEGA Life Member Bill Caswell, P.Eng., has worked on hundreds of Tetra projects over the past eight years or so. He joined the group after his brother-in-law, a Tetra volunteer in Vancouver, encouraged him to get involved.

"I enjoy tinkering. Welding and automotive mechanics are lifelong hobbies of mine," explains Mr. Caswell, a retired mechanical engineer who spent his career working in gas plants and oilfield facilities.

Volunteering was an opportunity to "build some gadgets" and do some good, he says.

"What we do is really quite low tech. A lot of it involves welding bits of iron together or chopping up bits of wood and making something that's not readily available on the market," he says. "Sometimes it doesn't take very much to make someone's life a little easier. Most of (the designs) are little gadgets that I can carry in one hand."

Recently he met with a woman who became a paraplegic because of the actions of a drunk driver. Her husband had put an elevator lift in the back entry of their bungalow, allowing her to go up to the main level and down into the basement. But she needed a guard built to keep her from accidentally tumbling down the stairs. Mr. Caswell made a hinged metal arm that moves back and forth and acts as a safety barrier.

He's made several drink holders, using microphone stems, electrical wire and other parts and materials. It clamps onto the side of a wheelchair. People who can't move their hands easily, such as multiple sclerosis patients, can position a drink so it can be easily reached by moving their head.

For a family whose young daughter has cerebral palsy, Mr. Caswell built an elevating bed. The little girl needed the mattress close to the floor for sleeping, but easily elevated for her personal care. A torsion rod and manual lever were built onto a frame, allowing the mattress to be raised to about 80 centimetres from the floor.

Other projects Mr. Caswell has worked on include a wheelchair cell phone holder for a teen with cerebral palsy — fashioned from a coat hanger, steel rod and steel plate — and an adjustable paint palette holder for a quadriplegic who paints with her mouth.

"I like trying to come up with creative ideas to solve somebody's problem," says Mr. Caswell. "You have to be able to do stuff with your hands and have a passion to do it."

HOW YOU CAN HELP

Tetra Society welcomes new volunteers. If you have a mechanical aptitude and like to build things, your skills, creativity and ingenuity will be put to good use. The society asks volunteers to make a time commitment of six months for up to 12 hours a month. All out-of-pocket expenses, such as materials and mileage, are reimbursed.

Corporations, too, can help Tetra fulfill its mission, by donating of resources such as tools, supplies and money.

To find out how you can help, visit tetrasociety.org.

BABY'S GOT WHEELS
A toy car, adapted by Tetra volunteer Mohammad Othman, E.I.T., provides two-year-old Dana Claridge with improved mobility. She has Rett syndrome and cannot walk or push the car's foot pedal. Modifications to the car's circuitry turned the car's horn into an accelerator — which Dana can push, allowing her to get around like a two-year-old should.
-photo by Shane Kuhn/inFokus Design

There may not always be a lot of engineering involved in the designs, he says, but it's always fun, not to mention a wonderful opportunity to meet interesting and inspiring people.

GO BABY

As two-year-old Dana Claridge sits in her GoBabyGo car, a huge smile covers her face. She pushes a big red button mounted on the steering wheel and the toy car, powered by a 12-volt battery, moves forward. Dana has Rett syndrome, a neurodevelopmental disorder that causes a loss of movement and coordination. She can't walk but she can push the big red button, whose function was rewired by Tetra volunteer Mohammad Othman, E.I.T.

He modified the car's circuitry so that the foot pedal, which Dana can't press, was replaced by the button, turning the horn into the accelerator. He also added on a harness for safety. The design is modelled after the University of Delaware's GoBabyGo project, in which toy cars are modified to provide mobility for children with crawling and walking problems.

"Since Dana is unable to walk by herself, she bursts into laughter every time she presses that button to accelerate the car, and is now able to move with more independence," says Mr. Othman, a specialist service technician with Honeywell Building Solutions in Calgary.

The switch is big enough and sensitive enough to be identified and operated by a child with limited motor skills, explains Mr. Othman, who graduated with a master's degree in engineering design from McMaster University in 2012. The focus of his master's thesis was medical device product design, so volunteering with Tetra over the past year has been a great fit.

"I joined Tetra because I wanted to follow my passion for design and inventing and to give back to my community," he says. "It fills me with gratitude when I receive a sincere thank you from my clients. Also, seeing a person with a disability, especially a child, all ecstatic about a new adaptive toy or device is very rewarding."

Collaborating with other volunteers has also been a highlight of his volunteer experience.

"I'm surrounded by a creative bunch: machinists, wood workers, engineers and more. We have a well-equipped machine shop here in Calgary, and we can pretty much make anything you can think of," he says.

So far, his other projects have included an adaptive guitar strummer similar to the one being built for Mr. Skelly and wheelchair modifications, including making new parts for a worn out pommel to help a client push out of a wheelchair.

"My experience with Tetra has inspired me and opened my eyes to see the pressing needs of people with disabilities," says Mr. Othman. "There is always work that needs to be done — work that can drastically enhance someone's standard of living."

IN MEMORIAM

The Association received notice of the deaths of the following Members between November 1 and December 31, 2014.

Life Members

DALBY, Ronald Norman, P.Eng.

HOWELL, Douglas Pemberton, P.Eng.

JENKINS, Robert Ian, P.Eng

VIEAUX, John Joseph, P.Eng.

WILLIAMS, Philip Graham, P.Eng.

WILLIAMSON, Arthur Herbert, P.Eng.

Professional Members

AUGER, Gen, P.Eng.

CHOW, Kenneth, P.Eng.

ENG, Peter Glen, P.Geol.

HERNANDEZ, Jose Antonio, P.Eng.

KENNEY, Sean, P.Eng.

LAING, Bevan Douglas, P.Eng.

MAFUTA, Isidore, P.Eng.

MOHIUDDIN, Majid, P.Eng.

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API 579-1/ASME FFS-1 *Fitness for Service*	January 6-9 Edmonton
CSA Z662 Steam Pipelines *Introduction to Oilfield Steam Distribution in Pipelines*	January 22-23 Calgary
AWS Certified Welding Inspector (CWI) *Exam Preparation for March 16, 2015* **Exam application deadline is February 2, 2015**	February 9-14 Edmonton
API 653 *Tank Inspector Exam Preparation for March 2015* **Exam application deadline is January 23, 2015**	February 23-28 Edmonton
Welding Fundamentals *For Engineers, Inspectors, and Experienced Tradesman* **Covers Alberta Welding Examiner Paper 1 & 3**	February 24-27 Calgary
CSA W178.2 Level 2 *Exam Preparation including ASME VIII-1 and IX Code Exam* **Approved for Shortened Welding Inspection Exam**	March 16-21 Edmonton
ASME VIII, Division 1 *Code Design Requirements for Pressure Vessels*	March 30-April 2 Edmonton
ASME Section IX *Welding Codes and Metallurgy for Carbon/Alloy Steels* **Covers Alberta Welding Examiner Paper 2 & 4**	April 7-10 Edmonton
API 510 *Pressure Vessel Inspector Exam Preparation for May 2015* **Exam application deadline is March 20, 2015**	April 13-18 Edmonton
API RP 571 *Damage Mechanisms of Fixed Equipment in Refining* **Optional Exam Preparation for April 2015**	April 20-23 Edmo`nton
ASME B31.3 *Materials, Fabrication, Inspection, and Testing Requirements*	April 28-May1 Edmonton
API 570 *Piping Inspector Exam Preparation for June 2015* **Exam application deadline is April 10, 2015**	May 4-9 Edmonton
ASME B31.3 *Intro to Process Piping Design and Canadian Regulations* **Register Early to Reserve Your Seat**	May 12-15 Edmonton
ASME Section VIII, Division 1 *Materials, Fabrication, Inspection, and Testing Requirements*	June 9-12 Calgary

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