

PEG

SPRING 2017



TD Insurance
Meloche Monnex



Get more out of your APEGA membership.

Members can save on insurance rates.

Take advantage of
your group privileges:
You could save **\$415***
or more when you
combine your home and
auto insurance with us.

Home and auto insurance program recommended by



Because you've earned it.

At TD Insurance we believe your efforts should be recognized. That's why, as a member of The Association of Professional Engineers and Geoscientists of Alberta, you have access to the TD Insurance Meloche Monnex program, which offers you insurance coverage and highly personalized service, along with additional discounts. Request a quote and find out how much you could save!

Our extended business hours make it easy.

Monday to Friday: 8 a.m. to 8 p.m. (ET)

Saturday: 9 a.m. to 4 p.m. (ET)

HOME | AUTO

Ask for your quote today at 1-866-269-1371
or visit tdinsurance.com/apega



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

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

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

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

SPRING 2017

FEATURED PHOTO:
PAGE 39>

Election 2017

10-30

**APEGA SUMMIT
2017**

32-33

FEATURES

- 10 Election Begins
 - 11 Infographic
 - 12 Story
 - 13-29 Candidate Statements
 - 30 Notice
- 31 Voting Consultations Underway
- 32-33 APEGA Summit 2017
- 34-35 Legislative Review Milestone Reached

DEPARTMENTS

- 4 President's Notebook
- 7 Interim CEO's Message
- 36 Movers & Shakers
- 47 Professional Development
- 49 Member Benefits

PEG

VOLUME 1 | NUMBER 1 | SPRING 2017

ISSN 1923-0052

Editor **George Lee** ✉ George.Lee@apega.ca

The PEG (ISSN 1923-0052) is published quarterly — online — in the spring, summer, fall, and winter, by the Association of Professional Engineers and Geoscientists of Alberta. Publication of a print version of *The PEG* ceased with the distribution of the winter 2016 edition.

The PEG's content relates primarily to APEGA, our statutory obligations, our services to Members and Permit Holders, and the professional development of Members. The magazine also celebrates Member and Permit Holder accomplishments in Professional Engineering, Professional Geoscience, and other areas.

The PEG is not a technical, peer-reviewed publication. Although we publish items about accomplishments in research, we **do not** publish actual academic or scientific papers and presentations, even in summary form.

The PEG does not accept advertising at this time.

Opinions published in *The PEG* do not necessarily reflect the opinions or policy of APEGA or its Council.

Inquiries: George.Lee@apega.ca

COUNCIL

President **Dr. Steve E. Hrudehy**, *P.Eng., FEC, FGC (Hon.), FCAE, FSRA* (Canmore)

President-Elect **Jane Tink**, *P.Eng., FEC, FGC (Hon.)* (Okotoks)

Vice-President **John Rhind**, *P.Geol.* (Calgary)

Past-President **Connie Parenteau**, *P.Eng., FEC, FGC (Hon.)* (St. Albert)

Councillors **Natasha Avila**, *P.Eng.* (Cold Lake)

Dr. Jeff DiBattista, *P.Eng., MBA* (Edmonton)

Lisa Doig, *P.Eng., FEC, FGC (Hon.)* (Calgary)

Jennifer Enns, *P.Eng.* (Calgary)

George Eynon, *P.Geo., FGC, FEC (Hon.)* (Calgary)

Darren Hardy, *P.Eng.* (Calgary)

Dr. Brad Hayes, *P.Geol., FGC* (Calgary)

Dr. Timothy Joseph, *P.Eng., FCIM* (Edmonton)

Mahsoo Naderi-Dasoar, *P.Eng., M.Sc., PMP* (Calgary)

Manon Plante, *P.Eng., MDS, CD1* (St. Albert)

Art Washuta, *P.Eng.* (Edmonton)

Terry Waters, *P.Eng.* (Calgary)

Public Representatives **Ross J. Harris**, *FCA, ICD.D*

Mary Phillips-Rickey, *FCA*

NATIONAL ORGANIZATIONS

Engineers Canada Directors **Dr. David Lynch**, *P.Eng., FCAE, FEIC, FCIC, FEC, FGC (Hon.)*

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

Larry Staples, *P.Eng., FEC, FGC (Hon.)*

Geoscientists Canada Director **George Eynon**, *P.Geo., FGC, FEC (Hon.)*

BRANCH CHAIRS

Calgary **Gobind Khiani**, *P.Eng.* calgarybranch@apega.ca

Central Alberta **Stephen Huber**, *P.Eng.* centralalbertabranch@apega.ca

Edmonton **Bob Rundle**, *P.Eng.* edmontonbranch@apega.ca

Fort McMurray **Jason Vanderzwaag**, *P.Eng.* fortmcmurraybranch@apega.ca

Lakeland **Hannah Maynard**, *E.I.T.* lakelandbranch@apega.ca

Lethbridge **Olivia Sieniewicz**, *P.Eng.* lethbridgebranch@apega.ca

Medicine Hat **Said Said Yussuf**, *P.Eng.* medicinehatbranch@apega.ca

Peace Region **Brian Morrison**, *P.Eng.* peaceregionbranch@apega.ca

Vermilion River **Kashif Dada**, *P.Eng.* vermillionriverbranch@apega.ca

Yellowhead **Ana Paula Mayumi Tanaka**, *P.Eng.* yellowheadbranch@apega.ca

STAFF LEADERSHIP

EXECUTIVE

Interim Chief Executive Officer **Heidi Yang**, *P.Eng., FEC, FGC (Hon.)*

Director, Executive & Government Relations **Pat Lobregt**, *FEC (Hon.), FGC (Hon.)*

Director of Operations **Krista Nelson-Marciano**, *BA*

REGULATORY

Registrar **Carol Moen**, *P.Eng.*

MEMBER SERVICES

Acting Director, Member Services **Mohamed El Daly**, *M.Sc.*

COMMUNICATIONS

Director, Communications **Philip Mulder**, *APR, FCPRS, FEC (Hon.), FGC (Hon.)*

APEGA CONTACT INFORMATION

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



What if you could enjoy the same great benefits as your peers?

There are a number of great advantages to sharing in these Engineers Canada-sponsored plans, such as getting a combination of benefits and low group rates not available to the general public. That's why over 90,000 engineers, geoscientists, technicians, technologists and their families have already made Engineers Canada-sponsored insurance and financial plans their protection of choice. Find out how you can start benefiting as well.

Visit manulife.com/apega or call 1-877-598-2273 for more details on Engineers Canada insurance and financial products.



Study, Define, Frame, Move Forward — APEGA and Managing Risk

BY DR. STEVE E. HRUDEY, P.ENG., FEC, FGC (HON.) FCAE, FSRA
APEGA President

“Predictions are difficult — especially about the future.”

-variously attributed to Nobel physicist Neils Bohr, baseball legend Yogi Berra, and others

Risk is a four-letter word — that much we can agree on. Risk also has multiple meanings among different individuals and even for the same individual facing different circumstances. Normally, risk is relevant in the context of predicting future challenges. Yet too often debates and actions about risk (e.g., risk assessment, risk management, risk communication) proceed as if the word has a single, universal meaning. Resulting confusion from talking at cross-purposes can itself be very risky.

IF APEGA IS TO MORE EFFECTIVELY MANAGE RISK, WE MUST FIRST UNDERSTAND WHAT APEGA MEANS BY RISK.

Despite some very tangible risks associated with using the word itself, APEGA can and must manage the risks it is facing. This is essential to delivering on the primary reason that APEGA exists — to provide effective self-regulation of our professions to protect the public.

We're managing some of those risks right now. If you've read any of [my past PEG columns](#), however, I think you know that I believe we can — and must — do better.



If APEGA is to more effectively manage risk, we must first understand what APEGA means by risk. Given the diversity of perspectives on the word and subject, one way to refine APEGA's understanding of risk is to accept some of the word's fundamental truths. I'll initiate that discussion with the following points, drawn from my professional experience.

- 1. Risk is inherently multidimensional.** This reality is a characteristic that leads directly to the value of risk as a concept worth managing, making it more useful than just focusing on probability, consequences, or uncertainty. For example, we acknowledge that there are low probability-high consequence risks, just as there are high probability-low consequence risks. These extremes alone show that risk is multi-dimensional.
- 2. Risk must be considered for a specified timeframe.** If risk is considered for a specified consequence — say, the Earth being affected by a climate-changing asteroid strike — quantitative probability estimates will be very different for a timeframe of one year than for some time over the next millennium. With this understanding, timeframe is surely another dimension of risk.
- 3. Because of the multidimensional character of risk, there is no strictly objective way to represent it as a single number.** Of course, there are computational ways to condense a multidimensional entity into a single number, but this happens only by assigning some weighting to how the dimension magnitudes will be combined. Any weighting scheme, even equal weighting of all dimensions, entails judgment. Although such judgment can be informed by relevant expertise, no weighting scheme should claim the purity of mathematical objectivity.
- 4. Ranking risks is an exercise in judgment.** If risks could be objectively represented by a single number, then ranking would be straightforward. But because subjectivity, no matter how rational it may be, is necessary to convert a risk estimate into a number that can be ranked, judgment is necessary.
- 5. What is important to those affected will influence how they rate risks.** Personal perspectives will inevitably play a role in how any individual judges risks. Risk science has been dominated by debates about real versus perceived risk, yet all risk



ScienceCartoonsPlus.com

predictions involve judgments. Claims to know the “real risk” cannot withstand scrutiny. The focus on risk debates needs to be about how much evidence there is, and how rational and robust the estimation methods are from one risk assessor to the next.

- 6. Risks are inherently a prediction of what may happen.** If something has already happened, there are consequences, but the probability element and timeframes fundamental to risk no longer apply. A mature understanding of the vagaries of prediction should make anyone cautious about claiming to know the “real risks.” Consequences can be real, but the likelihood of those consequences arising must be a prediction — an estimate conditioned by the knowledge available to the person or persons assessing the risk.
- 7. To varying degrees, risks are balanced by benefits.** The negative and positive consequences of any risk are not likely to be evenly distributed among those affected. These realities mean that concerns about fairness and equity are often more influential in judging risks than the probability or magnitude of consequences.
- 8. Zero risk is not possible.** If we can agree that, at a minimum, risk has dimensions of consequences, probability, and time, we need to recognize that each has an enormous range of values that often can only be discussed by representing numerical estimates on a log scale. There is no zero on a log scale or on a mathematically conceived probability

distribution, and time itself is open-ended. Of course, a risk can be vanishingly small for a particular scenario, but an expectation of being able to achieve zero risk, for example by banning an activity or a product, inevitably ignores the consequences of alternative actions or inaction.

APEGA ENJOYS A REMARKABLE LEVEL OF VOLUNTEER ENGAGEMENT FROM MEMBERS, WHICH IS ESSENTIAL TO MAKING SELF-REGULATION VIABLE AND DELIVERING IT TO MEMBERS AND THE PUBLIC

9. Uncertainty may be more important than consequence.

The original practitioners of risk management have been found in the insurance industry. The underlying premise of insurance is that there can be financial compensation possible for any consequence, but insurance relies upon having confidence in knowing the probability of any consequence so that a financially viable premium can be charged to cover that risk. The magnitude of the consequence is less important to an insurer than knowing the appropriate premium. This perspective is at odds with how most citizens view risk. Concern about dire consequences usually dominates an individual's rating of risk, more than how certain we can be about the likelihood of the risk prediction.

10. Defining risk scenarios is essential to comparing risks.

A clearly defined risk scenario can have boundaries of certainty. Let's use health risk as an example. Every person born has a lifetime probability of death equal to one, i.e., certainty. But within that overall boundary, the timing, cause, and nature of death allow for considerable variability about what health risks matter to individuals. This reality makes health risk assessment a challenging activity.

In August 2016, APEGA embarked on formalized risk training for Council and senior staff. Going forward, managing risks to APEGA will be fundamental to what APEGA's leadership must achieve. With some of the foregoing in mind, we need an initial framing of the

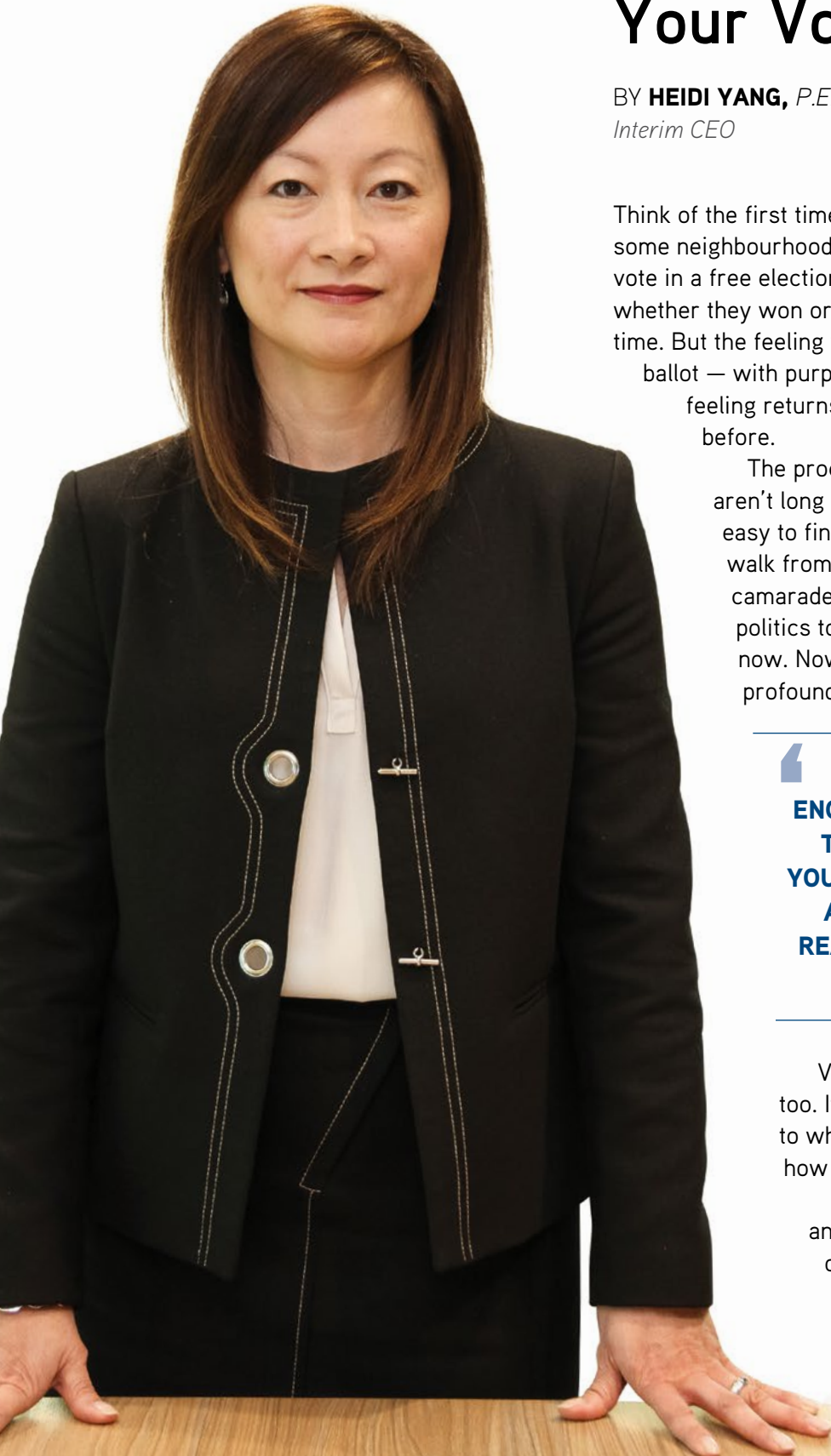
major risks facing APEGA. Following are some of the major considerations for such a framing.

- Many Members and Permit Holders are in distress because of Alberta's continuing economic realities. The situation may take a long time to improve and the consequences of those realities inevitably threaten the viability of APEGA to deliver effective self-regulation.
- The regulatory model for APEGA has been more focused on careful selection of who can be licensed to practise our professions. Thereafter, the model has been more reactive, relying on investigation and resolution of complaints rather than active prevention of unacceptable practice.
- APEGA enjoys a remarkable level of volunteer engagement from Members, which is essential to making self-regulation viable and delivering it to Members and the public. Sustaining volunteer engagement is therefore critical.
- APEGA has found that some core elements of its operations and support systems need to be substantially upgraded. A failure to address these necessary upgrades will undermine the viability of APEGA in its primary mandate to protect the public.
- The percentage of Members who turn out in our annual Council election may suggest to some stakeholders that many Members take for granted and do not value the privilege of self-regulation. Our turnout is consistent with other self-regulating organizations, and our turnout may not directly reflect low valuation of self-regulation. Still, it's a connection some stakeholders may make, so maximizing voter turnout is a valid risk management goal for APEGA.

Of this short list of major risks facing APEGA, the last one — increasing voter turnout in our annual Council election — speaks to something that you can **act on right now** for APEGA, and thereby help strengthen the health of the engineering and geoscience professions.

Questions or comments?

president@apega.ca



Your Vote, Your Journey

BY **HEIDI YANG**, P.ENG., FEC, FGC (HON.)
Interim CEO

Think of the first time you made your way through the door of some neighbourhood school or church basement to cast your vote in a free election. By now, the names of the candidates and whether they won or lost may have disappeared into the mists of time. But the feeling you got from showing up and filling out the ballot — with purpose — that's still there. Each time I vote, the feeling returns, and it's just as strong as it was the election before.

The process is not particularly stressful. The lineups aren't long and the opening hours are. Parking is usually easy to find, if you need it, but many voters simply walk from their homes. A mood of quiet resolve and camaraderie seems to permeate the venue. We'll argue politics tomorrow morning, if we need to. But not now. Now is for voting and accomplishing something profoundly important, together.

VOTING IS ONE ENTRY POINT INTO ENGAGEMENT WITH THE ORGANIZATION THAT REGULATES YOUR WORK AND YOUR PROFESSIONS. IF YOU'RE ALREADY AN ENGAGED MEMBER, VOTING IS A REAFFIRMATION OF YOUR COMMITMENT TO YOUR PROFESSIONS

Voting is your right, but it is so much more, too. It is freedom of choice. It is your connection to who you are and where you've come from, to how you can make a difference.

That polling place feeling is one of pride and patriotism, certainly. Yet it's also a feeling of community. All these people, regardless of their backgrounds and beliefs and skin colours and ages, have this simple, important act in common. They came out. And then they voted.

APEGA ELECTION BEGINS

And right now, you can vote in the annual APEGA election. Polling is underway for your next President-Elect and Council. You have until March 19 at 12 noon to make your choices. Everything is online, so vote any time of day, at your convenience. If you've already decided you'll vote but haven't yet, then please [go to the election area](#) of our website now. Learn about the candidates by reading their statements and watching their videos. Make your choices.

If you haven't decided to vote or don't normally do so, read on and let me continue my case to encourage you to engage with APEGA. I think it's a good one.

While APEGA is not your country, it is your professional community. If you feel no connection whatsoever to APEGA, or you dislike some of the actions APEGA takes on your behalf, or even if you think we're doing just fine, voting is important. Your ability to vote and your choice to do so are the epitome of self-regulation. Voting is one entry point into engagement with the organization that regulates your work and your professions. If you're already an engaged Member, voting is a reaffirmation of your commitment to your professions

MY ENGAGEMENT JOURNEY

Why is engagement so important? It's a word you hear often from member-based organizations of all kinds, from self-regulators through to credit unions. Let me explain it with my own story.

When I first moved to Alberta as a newly graduated engineer, my first thought was, "I ought to register as a Member-in-Training." After doing that, I signed up to volunteer with APEGA; I felt it was my obligation as an MIT to support my profession, and volunteering was a natural choice.

My first engagement with APEGA was through the Peace Region Branch. I made connections with like-minded engineers and geoscientists and aimed to make a difference in my professional and personal community, first as the Outreach lead and then through many Branch executive positions, including Chair.

THE COUNCIL PERSPECTIVE

During my term as Chair, I attended Council meetings. This first taste of APEGA governance gave me a

ELECTRONIC VOTING — BE INFORMED, ATTEND AGM

I'd also encourage you to attend the AGM in Calgary on April 28. Consultations are now underway on a subject that could result in a proposed bylaw amendment regarding mail and electronic voting. If we do propose an amendment, it will be put before the AGM for a vote.

Take part in consultations that are now underway on the matter, which is before APEGA again after an amendment was defeated at the 2016 AGM. We listened, and we're giving Members time to discuss the matter.

Attend a consultation, attend the AGM. And vote — because your vote is important, and your vote counts.

deeper sense of what APEGA is and how it contributes to protecting the public interest. Council meetings were extremely informative, relating to APEGA's performance against our statutory functions, and I gained awareness of Council's responsibilities.

I remember voting in Council elections, during those early years. Back then, the ballots were paper and the process was slow and tedious. But what motivated me was knowing that my vote, among many others, would shape the composition of APEGA Council — the body that would set direction for APEGA. Again, that sense of purpose, that voting feeling, resonated with me.

Years later, the Nominating Committee asked me to consider running for Council. That led to my second engagement with APEGA, when I was elected to a three-year term as a Councillor in 2011. The voting period never felt so important as I waited to see whether I would receive enough support to be elected. I talked with colleagues and reached out to networks to encourage voter turnout. That year, 15.7 per cent of the membership voted. The percentage has fluctuated over the years, and we continue to encourage an increase in voting.

My time on Council proved rewarding. I remember discussing issues and learning about the impact of our decisions on the strategic direction of APEGA. "Wow," I

thought. "This is a huge responsibility. What a privilege it is to be here."

My motivation to be considered for Council was my desire to make a difference to our professions. I had not realized, however, the difference it would make to *me*. I learned about APEGA, about self-regulation, about

I HOPE YOU, TOO, HAVE A UNIQUE JOURNEY OF APEGA ENGAGEMENT AHEAD OF YOU, WITH ITS PLEASANT – AND SOMETIMES CHALLENGING – SURPRISES.

working with others, about the importance of our professions to the people of Alberta. I learned that strategic leadership requires a disciplined outlook on current and future states, and that the consequences of what we do extend from our Members through to the public.

THE STAFF PERSPECTIVE

I had many opportunities to work closely with staff members over the years, and I found I really enjoyed this interaction. When the opportunity to join them presented itself, I took it. I moved my family to Edmonton and became Director, Member Services in July 2014 – my third engagement with APEGA.

I embraced the transition this represented – from providing strategic direction as a Councillor to providing leadership to deliver on the initiatives resulting from those strategies. In this role, part of my vision was to better inform Branches about the strategies and happenings of APEGA, and as a result help build the desire in Branch Members to become more engaged with APEGA.

In May of 2016, my most profound engagement with APEGA began. I accepted an appointment as the Interim CEO. In the last nine months, I have learned and grown immensely. I have never had this level of pride in my profession, knowing and appreciating the full engagement this current Council has given to APEGA, and the time and commitment all of our volunteers demonstrate, day in and day out.

Why do they do this? Because they want to, and not because they have to. The desire to make a difference resonates with Council and all volunteers, and so does

the desire to be engaged. They care about our professions. The motivations aren't that different for staff members, most of whom are not APEGA Members. For them, of course, this is employment. But I have learned that it is so much more than "just a job," and I am confident that I speak for most if not all staff members when I say that.

It's been a pleasure to witness, from the perspective of Interim CEO, the hard work and thought delivered on behalf of the public and Members. I wake up each day with gratitude for all that I have experienced with APEGA.

YOUR APEGA JOURNEY

Yes, I am the exception. Not everyone gets the opportunity or privilege of this position or the experiences my path has provided; I sure didn't expect them. But I am truly honoured to be able to serve APEGA in this capacity. And I know it will not be my last engagement with APEGA, either. I hope you, too, have a unique journey of APEGA engagement ahead of you, with its pleasant – and sometimes challenging – surprises.

Your single vote will not change the world or APEGA, just like it won't change Canada or Alberta or your municipality or your school board. But your vote *does* count.

And perhaps your vote will change you, and your relationship with APEGA and your fellow professionals. Then *that* will change APEGA. Maybe it will change the way you approach your work, and the sense of camaraderie you have with other Professional Engineers and Geoscientists. Maybe it will encourage you to volunteer and take a more active role in self-regulation.

I'm not ignoring the collective impact voting has on APEGA. We are always moving forward and changing, and the people you elect lead that effort.

I can't tell you what to look for in a candidate. But I can tell you this: these are great professions because of who you are and the fact that you get to regulate them. That's worth celebrating. That's worth protecting. That's worth **getting out and voting**.

Questions or comments?

ceo@apega.ca

Election 2017

Infographic	Page 11
Story	Page 12
Candidate Statements	Page 13-29
Notices of Election, AGM	Page 30

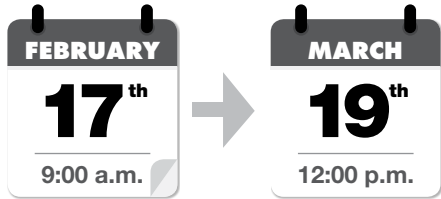
POLLING PERIOD

Friday, February 17, 2017, at 9 a.m.
to
Sunday, March 19, 2017, at 12 noon.

APEGA Election Process



2017 ELECTION



Vote Online



VOTER ELIGIBILITY CRITERIA

 **In Good Standing**

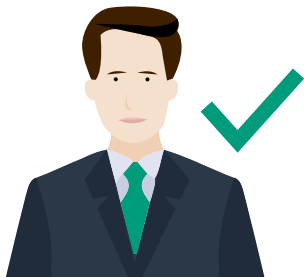
No outstanding financial obligations to APEGA
+
No current APEGA-imposed sanctions or suspensions
+
No outstanding CPD hours

 **Membership**

P.Eng., P.Geo., P.Geol., P.Geoph.
OR
Professional Licensee
OR
Life Member
OR
Honorary Life Member

ANNUAL ELECTION

Each year we elect:



President-Elect

1st year as President-Elect
2nd year as President
3rd year as Past-President



1/3 of Councillors*

Term is 3 years
Expirations staggered for continuity
**Number of Councillors may vary each year*

CANDIDATES

for President-Elect

MOST VOTES = President-Elect



2nd MOST VOTES = Vice-President

Vice-President is a one-year position



MORE INFO

apega.ca/election

elections@apega.ca



Toll free: 800-661-7020

APEGA Election 2017 Underway

To Vote, You'll Need the PIN and Link Emailed from Our Election Partner

APEGA is partnering with Everyone Counts, a leader in the electronic voting industry, to run APEGA Election 2017.

Polling is now underway and continues until 12 noon on March 19, 2017. If you are an eligible APEGA voter, you should have received an Everyone Counts email containing:

- your PIN
- full voting instructions
- a link to the voting site

Any email you receive from Everyone Counts will include the APEGA logo and is legitimate.

You must use your PIN to vote. If you can't find it, call toll free 1-800-661-7020 or, from outside of North America, 780-426-3990. Helpline staff are available 24/7 while the election is taking place.

Everyone Counts has successfully run elections for two other constituent associations, the Academy Awards, and many other clients.

THE CANDIDATES

In all, 14 APEGA Professional Members are seeking three-year terms on Council. Two other Members are running for the one-year position of President-Elect; the runner-up will become Vice-President, also a one-year position.

The rest is up to you, as Professional Members of APEGA. Find out which candidates you support, cast your votes, and encourage your professional peers to do the same.

Candidate statements appear in this section of *The PEG*. Further candidate information appears in the election area of the APEGA website.



Members will cast votes for up to five Council candidates and one candidate for President-Elect.

Incoming President is Jane Tink*, P.Eng., FEC, FGC (Hon.), elected

in 2016. Ms. Tink officially takes her oath of office as President in Calgary on April 28, 2017, at the APEGA Annual General Meeting.

Following are names of the 2017 candidates.

PRESIDENT ELECT/VICE-PRESIDENT

Nima Dorjee*, P.Eng.

John Rhind*, P.Geol.

COUNCILLOR

Doug Cargill, P.Eng.

Craig Clifton*, P.Eng.

George Eynon*, P.Geo., FGC, FEC (Hon.)

Darren Hardy*, P.Eng.

Amir Jamshidi, P.Eng., PE, PhD

RaeAnne Leach, P.Eng.

Francesco (Frank) Mannarino*, P.Eng.

Jim McCuaig*, P.Eng., CD

Ross Plecash, P.Eng., M.Eng., FEC, FGC (Hon.)

Mustaqur Rahman, P.Eng.

Jason Vanderzwaag*, P.Eng., MASc.

Claudia Villeneuve*, P.Eng., M.Eng.

Terry Waters, P.Eng.

Emily Zhang*, P.Eng.

**candidates endorsed by the APEGA Nominating Committee*



Jane Tink, P.Eng., was born in Red Deer, Alberta, and attended school in Pincher Creek, where she began volunteering for various youth and sports groups. She attended the University of Calgary and obtained her Bachelor of Science Degree in Civil Engineering in 1984. After graduation she joined a smaller oil and gas company, and in 1987, while there, she obtained the title of Professional Engineer. She

began her career reviewing and programming an economic evaluation program and reserve tracking system and moved on to become the company's Drilling and Completion Engineer. She became involved in the Association of Women in Engineering and Science (AWES), holding various positions including President. She was also on the *Journal of Canadian Petroleum Technology* (JCPT) editorial review committee and volunteered in schools, presenting to K-12 students on various science topics, including engineering as a career and why it is a fantastic choice! During this time Jane began volunteering with APEGA — first with the Outreach Program making school presentations and then with Calgary Branch.

Jane worked for a private oil and gas company for a number of years, where she was responsible for various geographical areas including all aspects of engineering, from exploration to well abandonment and reclamation. She also maintained the Novell and Novell/Unix computer system and was responsible for testing and integrating new engineering software. During this time she completed the University of Calgary APEGA Management Certificate in 1995 and continued her volunteer activities with APEGA and AWES, and as a speaker at conferences and schools. In 1994 she joined Ryder Scott Company when they opened their Canadian office. There she was a team leader, APEGA Responsible Member, and primary contact for clients both domestically and internationally. During this time she also lived at and operated a cattle ranch, where she gained a better appreciation of the economic and environmental sustainability challenges of maintaining a safe and secure food chain.

In 2003 Jane was invited to run for APEGA Council and was honoured with the opportunity to serve as an APEGA Council Member from 2004 to 2007. She considered it an honour to serve her fellow professionals and the general public, and she relished the opportunity to give back to the profession that has afforded her such wonderful opportunities throughout her career.

In 2013, Jane started a consulting firm, Consult Tink Inc., which provides contract engineering to clients domestically and internationally. Jane continues to prepare estimates of reserves and resources and future net income for various financial institutions and exchanges worldwide. The firm is an APEGA Permit Holder for which she is the Responsible Member.

After being on APEGA's Council, Jane was the Chair of the Aboriginal Committee and guest speaker at various conferences, and continued to volunteer locally, including being a mascot named Cookie with her son's Cub troop. One of her career highlights has been to mentor and encourage both professionals and students in the professions. Jane currently lives south of Calgary with her family.

APEGA has an enormous impact on the economy, safety, and advancement of Alberta, of Canada, and of the world. It's an honour to once again participate in developing strategies to help our Members maintain the worldwide reputation of providing exceptional professional and technical input to any projects that they are involved in.

Professional Associations

- Registered Professional Engineer in Alberta (APEGA)
- Registered Professional Engineer in British Columbia (APEGBC)
- Registered Professional Engineer in Saskatchewan (APEGS)
- Member of the Society of Petroleum Engineers (SPE)

Professional Activities

- Honorary Geoscientists Canada Fellow (FGC (Hon.)) — Geoscientists Canada (2013)
- Fellow Engineers Canada (FEC) — Engineers Canada (2009)
- Chair, APEGA Audit Committee (2005-2006)
- Chair, APEGA Aboriginal Affairs Advisory Committee (2005-2012)
- Council Member, APEGA (2004-2007)
- Chair, APEGA Calgary Branch Executive Committee (1997-1998)
- Member, MEED Committee at the University of Calgary to institute a business minor for engineering students
- Volunteer, APEGA Mentoring Committee
- Member, University of Calgary Student Liaison Committee
- Member, Student Outreach Program
- Member-at-Large, APEGA Calgary Branch

Civic Contributions

- Organized and participated in science fairs and science presentations in Aboriginal communities, and various public and private schools and organizations in the Calgary area
- Past member of the JCPT Technical Review Committee
- President, Past President, Vice President and Newsletter Editor for AWES
- Guest lecturer at the University of Calgary and National Engineering Conference on Gender Ethics in the Workplace
- Guest speaker for various conferences
- Scouts parent volunteer



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 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 was elected the Vice-President of APEGA in 2015.

Nima and his wife of 25 years, Dr. Tsering Dorjee, have two daughters.

APEGA Activities

- Vice-President, 2015-2016
- Audit Committee, APEGA 2015-2016
- Co-chair, Joint Legislative Review Committee (2015-present)
- 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

- Chair of Fundraising, APEGA Education Foundation (current)
- 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

Due to the economic downturn, thousands of our Members have lost their jobs, and many graduating engineers and geoscientists have not been able to enter their chosen profession.

During these difficult times, APEGA must restore and increase membership services to help Members. We must work with our Permit Holders, government, and membership to find solutions to ease the difficulties Members face. We must develop closer relationships with other organizations that serve 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 have the final work assembled in Alberta. So, one of the most important issues facing APEGA today is the challenge of regulating the engineering profession in an era of outsourcing and offshoring. We need to ensure consistent regulation of technical work in engineering and geoscience, regardless of where the work is done.

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 engage in greater advocacy work. We must also be mindful of the enormous trust society has placed upon us.

I look for your support and look forward to engaging you in discussions on these and other matters that concern you and our Association.



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, at which time 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 Oil Sands Operations. John then became the Vice President of Oil Sands 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 of 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 offers. John retired in 2015 but continues to keep involved in industry, albeit on a more relaxed basis.

APEGA Activities

- APEGA Council Member (2015-present)
- APEGA Vice-President (2016-2017)
- APEGA, Member Executive and Audit Committees (2016-2017)
- APEGA, Chair Governance Task Force (2016) and Member Policies and Standards Task Force (2016-2017)
- Member (2005-present)

Affiliation, 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, Metallurgy and Petroleum (1994-present)
- Industry Director, Junior Achievement (1990-1993)

FOR COUNCIL Doug Cargill, P.Eng.



Volunteers do not necessarily have the time; they just have the heart.

-Elizabeth Andrew

Doug Cargill has at times lived by these words. He began his love for volunteering at a young age when he got involved with school yearbook committees in Yellowknife, Northwest Territories. He went on to get his engineering degree at Lakehead University

(Thunder Bay) and returned north upon graduation. During his university years, Doug was the President of the university chapter of the Canadian Society for Mechanical Engineering (CSME).

In his career thus far, Doug has worked his way up from project engineer and now holds the position of National Mechanical Engineering Practice Leader for WSP Canada Inc. He has worked on projects across Canada's Arctic, Alberta, Saskatchewan, Manitoba, British Columbia, and even Siberia. He has held board and committee positions in both the Northwest Territories Association of Professional Engineers and Geoscientists (NAPEG) and APEGA. And he is also a past Councillor of NAPEG.

From the time Doug made Alberta his home over a decade ago, he has been deeply involved in the community. He has volunteered on numerous boards and committees, including the APEGA Practice Review Board, the Alberta Summer Swimming Association, and Rhythmic Gymnastics Alberta.

Doug and his wife are parents to two daughters. And besides carrying out the duties of dad/driver/repairman, there is no such thing as down time for Doug. When not engaged in daily engineering tasks, he is often out flying, vacationing, scuba diving, or even acrylic painting.

In the spirit of giving, Doug has been an event photographer for both the Alberta Summer Swimming Association and Rhythmic Gymnastics Alberta at their regional and provincial competitions.

In running for APEGA Council, Doug wants to contribute to create change. He wants to give his fellow professionals a voice.

Doug wants APEGA to have more public recognition. He wants APEGA to be relevant to its Members. And he wants his fellow professionals to know what APEGA is doing for them.

Doug has ideas. And he wants to help his fellow Councillors to develop their ideas.

Together: we will make things happen!



I hold degrees in chemistry and civil engineering from the University of Regina and the University of Saskatchewan, respectively. Thirty years ago, I began working in the family business, Clifton Associates Ltd., as a laboratory technician. Now, as VP Alberta, I have gained a thorough understanding of the engineering profession along with its challenges, our role in the economy, and benefits to society and our communities.

After relocating to Alberta in 2003, I volunteered with the Consulting Engineers of Alberta (CEA) and was elected to the Board of Directors (2009), Vice-President (2012) and President (2013). During this time, I worked with numerous government departments addressing issues ranging from long-standing relationships with Alberta Transportation to coordination with the Southern Alberta Flood Recovery Task Force that helped expedite damage assessments and design of flood mitigation works.

As President, my goals were to enhance the image of CEA, align committees to achieve the goals of the strategic plan, and continue to press for legislated qualifications-based selection (QBS) for publicly funded projects within Alberta.

As part of enhancing the image and influence of the organization, CEA began an outreach program to other industry groups such as the Alberta Construction Association, Alberta Chamber of Resources, Alberta Construction Association, Edmonton Chamber of Commerce, and other similar organizations to find common issues that could be addressed jointly for our mutual benefit.

I also undertook the alignment of CEA's committees to improve efficiency and align the work of committees with the goals of the board of directors and the strategic plan. The result was a more focused organization that delivered better value to its members.

Lastly, I worked with a core group of CEA representatives to educate elected officials and familiarize government personnel on the benefits of QBS. The work on QBS is continuing and is expected to be completed within the next few years.

My time on the CEA board has shaped my view of the engineering profession as a driver of the economy, society, and public safety. The societal benefit of the profession is beyond the work that is done; it is the work that is enabled. Typically, every \$1 billion of engineering remuneration results in \$10 billion of investment, a 10-fold impact on our economy. Work by Professional Engineers enables investment and construction of safe, efficient structures and infrastructure for the benefit of Albertans.

In 2012, I was elected to the board of directors of the Alberta Chamber of Resources (ACR). Being involved with ACR has led to a greater understanding of how integrated the resource sector is with the economy of the province and how the orderly and responsible development of our resources benefits all Albertans. Currently, I act as the Transportation Committee Chair for ACR and have recently helped complete a pilot program for a new Alberta Heavy Module in conjunction with the Construction Owners Association of Alberta (COAA) and CEA. The program will decrease capital costs, promote Alberta-based module construction, improve safety, and facilitate quicker royalty payments to the province.

In 2015 I was appointed to the board of the Calgary Construction Association, and I volunteer to help organize the OAEC conference, a program intended to help improve the relationships between owners, engineers, architects, and contractors in the construction industry.

If elected to APEGA Council, the first issue I would focus on is continual enhancement of the image and identity of our professions to improve public understanding of our role and contributions as self-regulated professions. There has been a trend of increased scrutiny on self-regulated associations and professions throughout Canada. Quebec's engineering regulator was put into trusteeship by the Government of Quebec because of a loss of confidence in its role in protection of the public. There are other examples of similar action on associations in other jurisdictions throughout Canada. APEGA needs to be seen to be working in the public's best interest at all times.

APEGA is working and has always worked to protect public safety, ensuring the practices of engineering and geoscience are being done in an appropriate manner. The issue is that few know exactly what APEGA is doing to fulfill its mandate. As a Councillor I would encourage a broad outreach to the public, government, and industry to begin a dialogue, educate, and solicit feedback. It has been my experience that working through these groups, the benefits of dialogue are immediate and significant.

I believe my personal and professional experience could be an asset to APEGA Council and I look forward to the opportunity to contribute.



We have two major issues to deal with currently. First, the regulatory function improvements that we have been addressing for the past several years. Second, the economic downturn that has created a large number of unemployed APEGA Members.

Given our mandate for public safety and interest, maintaining our self-regulatory privilege granted by the government and public is a

paramount issue. Revising and renewing our Act is one of the most important tasks APEGA is undertaking with the provincial government. The recent focus is on the investigation, compliance, enforcement, and discipline functions that support our self-regulatory status.

However, APEGA also needs to address its unemployed Members' urgent and current dilemma — many professionals cannot afford to pay their dues. Membership dues are APEGA's primary revenue source. Extending the period for dues abatement — non-payment for those who are unemployed while remaining practising professionals — means a huge financial hit and managing our affairs differently. Either way, it will be a significant financial hit for APEGA as well as those Members.

I do not have the answers; however, given my experience on Council for the past several years, I have a good understanding of how APEGA runs, and I want to continue on Council for another term to help develop some solutions.

APEGA Activities

- Councillor, APEGA (2012-present)
- APEGA-appointed Director of Geoscientists Canada (elected President 2015-present)
- Member, Chair, and Past Chair, Practice Review Board (1995-1998)

Personal Information

- Immigrated to Canada in 1970, after a B.Sc. (London) and teaching high school; earned an M.Sc. (McMaster) and moved to Calgary in 1972.
- President of geos eynon & associates consulting inc., consulting to governments, companies, and the public on regulatory issues, community and stakeholder relations, board and governance advice and services.
- Teach at the University of Calgary's Haskayne School of Business in the BComm PLMA specialization, and deliver energy literacy short courses for industry, governments, and the public, through Oak Leaf Energy Training.
- Serve on the Board of Directors of the Canadian Society for Unconventional Resources (CSUR).

Professional Background

- In 1972, I joined Amoco in Calgary to begin a career in oil and gas exploration and production, moving through increasingly senior technical, management, and executive positions. I have experience with a broad spectrum of companies — majors, Canadian and U.S. large- and mid-size independents, and juniors — worldwide over the course of more than 20 years.
- Then, for 15 years provided energy resources consulting and research services with GEOS Energy Consulting, Ziff Energy, Cambridge Energy Research Associates (CERA), and the Canadian Energy Research Institute (CERI).
- Appointed to the board of the Energy Resources Conservation Board (ERCB) in 2008 — Alberta's oil and gas industry regulator. Served through 2013, for the last six months as a hearing commissioner with its successor, the Alberta Energy Regulator.
- My wife, Joyce, and I live in Calgary.

Affiliations and Community Service

- Fellow of Geoscientists Canada (FGC)
- Honorary Fellow of Engineers Canada (FEC (Hon.))
- Honorary Member of both CSPG and AAPG
- Board member of CSUR — the Canadian Society for Unconventional Resources
- Previously served on numerous CSPG committees, and as President, and similarly on numerous AAPG committees, as Chair of the House of Delegates, and on the Executive



My name is Darren Hardy and I have served on Council over the past year. I am a Professional Engineer with 27 years of experience working in the Canadian energy sector. I was born in Regina and moved to Alberta, living in several different cities before finishing high school in Fort Saskatchewan. I graduated in 1989 from the University of Alberta with a B.Sc. in Chemical Engineering.

I spent the first 19 years of my career in Fort McMurray at Syncrude Canada Ltd. I am a big believer in continuing education, through both formal and informal channels. I was fortunate to work in an operating environment with great mentors and gain engineering experience working in a variety of technical and operations teams. My first few years were shared between project roles leading plant optimization studies to responsibly increase production and reduce costs, and operational roles providing technical direction for several large-scale upgrading processing facilities.

This provided a technical foundation when I turned my focus to leadership as an operations team leader. Building on this experience, I then managed the upgrading turnaround team throughout the upgrading expansion modifications. To enhance my skills I completed the Queen's School of Business Operations Management Program. My career path continued through a series of management roles with increasing scope and responsibility in the utilities department leading up to the Business Unit Manager position. In many of these roles I was active in developing and implementing new workflow structures and accountability processes. I was also responsible for ensuring safety and environmental compliance for staff and business operations.

In 2008 I moved to Calgary to join the Canadian Oil Sands Ltd. executive team, where I was responsible for providing oversight of the Syncrude operation. In this role I chaired a variety of governance committees as well as being a member of the Syncrude board of directors. This provided a significant insight into the business, legal, and disclosure aspects required for effective governance. I was also able to enhance this learning by completing Harvard Business School's Advanced Management Program. This year I returned to Syncrude where I currently direct a team of Professional Engineers and Geoscientists in a wide variety of projects to develop business and environmental strategy.

I believe I have built a reputation for building strong teams by focusing on mentoring and development. I believe that dealing with people in an honest and ethical way, and helping develop clearly defined goals, is the best way for everyone to succeed. These are the values I have brought to Council and consider core to all activities.

I have enjoyed spending my time volunteering with youth organizations such as the Fort McMurray minor football association and my daughters' ringette association. I find it rewarding to help build an organization and to support young athletes as they grow and learn.

Last year I ran for APEGA Council and was successful in being elected to a one-year term. It has been a busy year of changes for APEGA and Alberta, and I've been active in Council and the Governance Committee, supporting our membership and protecting our ability for self-regulation while working to keep our professional dues as low as possible during tough economic times. These are challenging and sometimes diverging goals, but I feel that I am well prepared to continue working for the membership. On a more personal note, I have really enjoyed the past year — expanding my knowledge of Council activities and Members, and participating in new Member Induction Ceremonies and Life Member dinners.

I currently live in Calgary with my wife, Shannon, who is also an APEGA Member, and our two teenage daughters. We spend our time involved with our daughters' sports and school activities, and when we get the chance we also enjoy skiing, hiking, and biking in the mountains.

APEGA Activities

- Member (1989-present)
- APEGA Council (2016)
- Member, APEGA Governance Committee (2016)

Affiliations, Corporate and Community Service

- Board Member, Syncrude Canada Ltd. (2008-2016)
- Member, Oil Sands Executive Policy Group (2008-2016)
- Board Member, Alberta Chamber of Resources (2009-2013)
- Official, Fort McMurray Minor Football (2005-2007)
- Board Member, Bow View Ringette Association (2011-2016)
- Executive Committee Member, Bow View Ringette (2013-2016)



The most distinct memory of my childhood is of a time when my father was just starting his construction company and I was five years old. I remember thinking, I will build my father a brick wall to help him out in his project. So using water, soil, and broken bricks, I built him a fragile wall in our backyard that did not stand very well but was enough to lead me to the discovery of my passion for civil engineering.

My name is Amir Jamshidi, I am the engineering manager at Supreme Group, and I am running to be your Councillor in the 2017 election. I was born in Iran and immigrated to Canada in 2008 after obtaining my B.Sc. in Civil Engineering from Najafabad Azad University in 2003, and my M.Sc. in structural engineering from Amirkabir University of Technology (Tehran Polytechnic) in 2007. I continued my studies at the University of Alberta in structural engineering, and I obtained my PhD in 2016.

I have 12 years of experience working in the academic and engineering sectors of this industry. My career began on various construction sites in the summer breaks of high school and then university. Upon graduation, I joined an engineering and construction company and gained experience in a variety of fields, including residential and commercial buildings, roads, bridges, dams, and tunnel construction.

My scientific and engineering abilities have been the direct result of the many opportunities that I've come across in my industrial experience, academic research, and teaching practices. Through my research experience, I have gained the ability to plan and execute complex research investigations and, in the process, developed important critical thinking skills applicable to real-world problems. From teaching, I have learned to transfer practical experience and academic knowledge to students in a way that will help them further their studies. I have enhanced my own understanding of structural engineering concepts and have become accustomed to looking at a theory from different angles. I've also learned to interact with students and professors in a mutually collaborative way throughout my years as a university instructor, and other teaching assistantship positions held at the University of Alberta.

I have been fortunate enough to be involved in the consulting and construction field from the early age of 16 and have had the opportunity to perform as the project manager for various types of projects. My extensive work experience and teaching background are responsible for the development of my engineering and scientific abilities.

Throughout my years of experience in the field of steel structures, I have been motivated and enthusiastic about the industry and was fortunate enough to join Supreme Group.

I hope to be able to bring a colourful combination of expertise, in the form of my academic knowledge and industrial experience, to APEGA and make a difference in any way I can.

I live in Edmonton with my wife, Naz, and our daughter. We enjoy travelling, spending time with family and friends, and

being involved in any activity that furthers our young daughter's growth and development.

Awards and Honours

- SGSC First-Prize Award (2015)
- G.L. Kulak Scholarship (2015, 2013)
- Golden Key Research Award (2014)
- Engineers Canada-Manulife Scholarship (2014)
- Transport Canada Scholarship in Safety and Security (2013)
- Queen Elizabeth II Graduate Scholarship (2009-2012)
- Provost Doctoral Entrance Award (2009-2010)
- Award of Excellence, Amirkabir University of Technology, Tehran Polytechnic (2007)

Professional Affiliations

- Registered Professional Engineer (P.Eng.), Alberta (APEGA), (2013-present)
- Registered Professional Engineer (P.Eng.), British Columbia (APEGBC), (2016-present)
- Registered Professional Engineer (P.Eng.), Saskatchewan (APEGGS), (2016-present)
- International Professional Engineer (IntPE)/APEC Engineer, Structural Engineering, APEC/IPEA, (2016-present)
- Registered Professional Engineer (PE), Montana Board of Professional Engineers and Professional Land Surveyors (2014-present)
- Associate Member, American Society of Civil Engineers (ASCE), (2004-present)
- Associate Member, American Institute of Steel Construction (AISC), (2004-present)
- Member, Canadian Institute of Steel Construction (CISC), (2013-present)
- Member, Project Management Institute (PMI), (2015-present)

Academic Activities

- Technical Member, ASCE/SEI Disproportionate Collapse Committee (2014-present)
- Technical Member, AASHTO/NSBA (2016-present)
- Bridge Design Lead, University of Alberta (2016-present)
- Research and Teaching Assistant, University of Alberta (2009-2016)
- Co-chair of the First Structures Graduate Students Conference (SGSC), Edmonton (2015)
- Moderator (General and Structural themes), CSCE Conference, Edmonton (2012)
- Technical Reviewer, CSCE Conference, Edmonton (2012)
- Technical and Academic Advisor, 1st International Conference on Urban Construction in the Vicinity of Active Faults (ICCVAF), Tabriz, Iran (2011)
- Adjunct Instructor, Azad University, Iran (2006-2007)

Volunteer Activities

- Community Translator, Edmonton Immigrant Services Association, (2012-present)
- Bridge Design Lead, Greystone Centennial Middle School, helping Grade 7 students design bridge projects (2014)



RaeAnne Leach received a Bachelor's Degree in Civil Engineering, Cooperative Program, from the University of Alberta in 2006. While attending university, RaeAnne completed work terms with the County of Grande Prairie No. 1, EXH Engineering Ltd., the City of Grande Prairie, and Bearsto Lehnrs Ketchum Engineering Ltd. (now Bearsto & Associates Engineering Ltd.). These positions gave her a variety of experience,

including data and asset management, materials testing, surveying, traffic counts and analysis, and municipal design.

Upon graduation, RaeAnne returned to northern Alberta and joined Bearsto & Associates Engineering Ltd. (BASE) full-time where she obtained her P.Eng. designation in both Alberta and British Columbia. Her work with BASE the past 10 years has included residential and commercial design in both urban and rural subdivisions, lot grading and storm water management plans, and hydrological analyses. Previously RaeAnne had an active role in all stages of project management but has shifted her focus to municipal planning and engineering, specializing in storm water engineering and hydrological analysis.

As the Senior Project Design Supervisor of Municipal Engineering at BASE, RaeAnne is responsible for a team of engineers, E.I.T.s, technicians, and draftspersons. She is also involved in consultation and development of area structure plans, outline plans, and design reports in the planning and subdivision process. Through this work she has become familiar with many regulatory documents, including the *Municipal Government Act* (MGA) and local development bylaws for various municipalities within northern Alberta.

RaeAnne started volunteering with APEGA in 2001 during her first year of post-secondary education at Grande Prairie Regional College and continued after receiving her degree, holding various positions on the Peace Region Branch Executive, including Chair for two years. She has been an active volunteer in elementary science nights, delivering career presentations to high school students, and organizing the Peace Country Science Olympics multiple years. She has always felt it is important to give back to her community and her profession.

RaeAnne is excited and honoured about the opportunity to serve on APEGA Council. As a young female professional, born and raised in the Peace Country, she brings diversity and an understanding of the unique challenges faced by rural northern communities. Her time on APEGA's Peace Region Branch Executive has made her passionate about self-regulation and what it means for APEGA. It is a privilege to be self-regulating professions and the importance of that must be effectively communicated to the Members. Self-regulation is not a right; it must be earned by continuing to act responsibly as an Association.

RaeAnne has always had an interest in music and has instructed at a summer guitar camp near Manning, Alberta, for over 15 years. RaeAnne is also involved in many athletic groups locally, volunteering as a coach for minor soccer and baseball, and playing volleyball, basketball, and slo-pitch. She is also part of the Alberta Volleyball Officials Association Zone 8 Executive, and she referees volleyball from the junior high level up to post-secondary.

RaeAnne lives in Grande Prairie with her husband and their three children.

APEGA Activities

- Interim Treasurer, Peace Region Branch Executive (2016-2017)
- Past Chair, Professional Development Liaison, Peace Region Branch Executive (2015-2016)
- Chair, Peace Region Branch Executive (2013 -2015)
- Vice-Chair, Peace Region Branch Executive (2011-2012)
- Outreach Coordinator, Peace Region Branch Executive (2008-2010)
- Member-at-Large, Peace Region Branch Executive (2007)
- Member (2006-present)

FOR COUNCIL Francesco (Frank) Mannarino, P.Eng.



I was born in and have lived most of my life in Edmonton, and have worked for industry mostly in the surrounding area. For as long as I can remember, I have had an interest in science and its applications. This naturally led to engineering as a career choice and I entered the University of Alberta in 1984, completing a B.Sc. in Chemical Engineering in 1988. After having garnered some industry experience, I completed an MBA, also at the University of Alberta, in 2001.

My work experience has been quite varied, having included chemicals, refining, upgrading (oil sands), and the water and electric utility industries throughout my 28-year career. I have held both engineering and technical, operations, business, and executive leadership roles in several companies. During that time, I have had the opportunity to work with skilled engineers of all disciplines and got a first-hand understanding of how the engineering profession operates in a large industrial setting.

I received my P.Eng. designation from APEGA in 1990. Since I have been working in Edmonton proper, I have established closer links with APEGA. Most recently, I was part of the investigation team that reviewed APEGA's policies and procedures in response to an unauthorized information release.

In my current role as Senior Vice President at EPCOR, I have been involved in both industry and the community through various board positions:

- Board of Directors, TELUS World of Science (Current)
- Advisory Board, Western Energy Institute (Current)
- Board of Directors, Canadian Electricity Association (Past)
- Board of Directors, Edmonton Waste Management Centre of Excellence (Past)

I am interested in getting more involved in the oversight and governance of the APEGA professions and as such the opportunity to serve APEGA Council supports this objective. I believe that my many years of industry experience across industries and companies will support APEGA in helping to guide the professions in the years ahead.



Jim McCuaig was born in Belleville, Ont., and has lived in various communities across Canada. After graduating from high school in 1980, he went to the Southern Alberta Institute of Technology, receiving his diploma in Mechanical Engineering Technology.

During this time, Jim was active in the Canadian Armed Forces Reserve with 746 (Calgary) Communications

Squadron, and trained as a Radio/Teletype Operator, a Teletype Technician, and a Radio Technician. He reached the rank of Sergeant in 1985. In 1986, Jim received his commission as a 2nd Lieutenant and went on to attend the Canadian Forces School of Communications and Electronics in Kingston, Ont., where he trained as a Communications and Electronics Engineering Officer.

In 1986, Jim moved to Victoria and served with 741 (Victoria) Communication Squadron before transferring to the Regular Force in 1987. He attended the Canadian Forces School of Electrical and Mechanical Engineering in Borden, Ont., where he trained as a Land Electrical and Mechanical Engineer. In 1989 Jim transferred back to the Reserve Force, where he held the positions of Troop Officer and Operations Officer with 741 (Victoria) Communications Squadron.

In 1989, Jim moved to Castlegar, B.C., where he took a sabbatical and taught junior and senior high school as a teacher on call. In 1990, Jim returned to school and attended Selkirk College in Castlegar, where he received a diploma in Electronics Engineering Technology. After graduation Jim worked briefly for Insight Electronics in Nelson, B.C., before joining EMCO Engineering Ltd. in Castlegar where he worked until 1999 as an Electrical and Mechanical Engineering Technologist. During this period, Jim also attended the Canadian Forces School of Military Engineering in Chilliwack, B.C., and trained as a Military Engineering Officer. He held the positions of Troop Officer and Operation Officer with 44 Field Engineering Squadron in Trail, B.C. In 1992 he received the Canadian Forces Commendation and was promoted to Captain in 1994.

In 1999, Jim returned to school, at Lakehead University in Thunder Bay, Ont. He received his Bachelor's Degree in Electrical Engineering in 2001, then went to work for Hemisphere Engineering in Edmonton as an Electrical Design Engineer. Jim maintained his employment with the Canadian Armed Forces Reserve as Regimental Adjutant with 8 Field Engineering Regiment in Edmonton before retiring from the CAF Reserve in 2003.

In 2003, Jim joined ATCO Electric as the Senior Regional Engineer in Peace River. After this position closed in 2006, Jim briefly operated Peace Engineering before joining BAR Engineering Co. Ltd. in Lloydminster as a Senior Staff Engineer. In 2014, Jim left BAR to join Smith + Andersen in Edmonton and was employed as an Associate Principal. In 2016 Jim accepted employment with the Town of Peace River, where he is now employed as the Director of Engineering and Infrastructure.

Jim is a Professional Engineer currently registered to practise in Alberta, British Columbia, Saskatchewan, and the Northwest Territories. He is a member of IEEE.

Jim became involved with APEGA while employed in Peace River, joining the Peace River Branch as a Member-at-Large. In Lloydminster he joined the Vermilion River Branch and acted in the Branch Secretary, Vice-Chair, and Chair roles. He was active organizing President's Visits, golf tournaments, and PD days. When he moved to Edmonton he volunteered with the Edmonton Branch as Vice-Chair and Chair before moving back to Peace River, where he now volunteers with the Peace River Branch.

Jim decided to run for Council because he believes that his varied background and involvement in various branches offers a balanced perspective. He has been active in the legislative review and in recruiting and mentoring new Members to volunteer for Branch activities.

Jim is married to Ruth McCuaig (nee Ehman) and they have four children. His past community involvement includes volunteering with various Scouts Canada groups, and he currently lends support to Ruth in her involvement with Girl Guides Canada. Jim is also an avid rugby fan.

APEGA Activities

- Professional Member (2003-present)
- Edmonton Branch Chair (2016)
- Edmonton Branch Vice-Chair (2015-2016)
- Vermilion River Chair (2014)
- Vermilion River Vice-Chair (2013)
- Vermilion River Branch Secretary (2012)
- Vermilion River Branch Member-at-Large (2008-2012)
- Peace River Branch Member-at-Large (2004-2006)

Affiliations, Corporate and Community Service

- Past Deputy Grand Knight, Knights of Columbus, Peace River Council (2006)
- Past Cub Leader, Beaver Leader, Scouts Canada (2002-2003, 2004-2006)
- Past Vice-Chair of Holy Trinity Church (Spruce Grove) Parish Council (2003)
- Past Vice-President Debney Armoury Officers Mess Committee (2003)



In 1988, I graduated from the University of Alberta with a B.Sc. in Mechanical Engineering. While an undergraduate student, I began my long history of service to the profession by participating on the executive of the Mechanical Engineering Student Society. I continued my education through joining the Society of Tribologists and Lubrication Engineers, an organization relevant to my employment, where I

volunteered as a member of the Alberta Section Executive, as the Registrar for the STLE Education Symposium, a presenter at the symposium, and as a contributing author to the *STLE Alberta Section Lubrication Handbook*.

After taking some courses from the U of A Faculty of Extension towards a certificate in Management Development, I decided to pursue the more formal Master of Engineering in Engineering Management. Taking courses while I worked full time, I graduated from the M.Eng. program in 2006. My capstone project was a comparison of experience requirements for professional engineering licensure among Washington Accord signatories as a basis for mutual recognition agreements.

My work experience in the field of engineering has been quite broad, working in the oil and gas, pulp and paper, electrical utility, manufacturing, and transportation industries in largely supporting roles. After working with EPCOR through the deregulation of the Alberta electrical market, an opportunity arose to work with APEGA. I had, at the time, been volunteering on the Continuing Professional Development Committee and serving as the liaison between engineers at EPCOR and the Association. I joined APEGA's staff in January of 2002, and worked there for approximately half of my career, holding the positions of Assistant Director, Communications and Public Affairs; Director, Corporate and Member Affairs; and Director, Corporate Affairs and Investigations. Upon leaving APEGA in 2015, I worked temporarily at the U of A Faculty of Engineering and at a commercial lube oil analysis and reliability company before taking on my present role as Engineering Governance Manager at Enbridge Pipelines Inc., one of Alberta's largest employers of Professional Engineers. In my current role, I work to ensure that Enbridge practises engineering in accordance with professional engineering legislation in numerous jurisdictions across Canada and the U.S.

My involvement with APEGA started, as it did with many of us, with the Iron Ring Workshop on professional ethics. Though interested in the topic, my career and family obligations prevented any serious involvement with the Association until I was able to begin volunteering with the Continuing Professional Development Committee. My passion for life-long learning intersected with my interest in professional regulation, making this the perfect opportunity to reconnect with my Association in a meaningful way. Working with Len Shrimpton, P.Eng., a long-time APEGA staff member, as well as with his support staff, gave me an appreciation of the depth and complexity of professional regulation, and prompted me to join APEGA's staff when the opportunity arose.

While working at APEGA, I had the good fortune of working with several committees, including the APEGA Education Foundation, the Insurance and Risk Management Task Force, the Communications Advisory Committee, the various Branches across the province, the Investigative Committee, and, of course, Council. I served as Council's Parliamentarian, introduced the means to broadcast the APEGA Annual General Meeting to Members, regardless of their location, prepared the APEGA annual salary survey, introduced numerous Member Benefits programs, and was involved in many other programs. Most rewarding, though, was the delivery of the APEGA Permit to Practice Seminar series, an honour I had for 12 years.

My work with APEGA prompted me to become involved further in professional regulation, and I was appointed to serve as a public member on the Council on Alberta Teaching Standards, the Practice Review General Panel under the Teachers Regulation, and on the College and Association of Respiratory Therapists of Alberta. I also had the opportunity to work with Alberta Computers for Schools, an organization that takes used computers from government and industry, refurbishes them, and distributes them, free of charge, to schools, libraries, and other learning organizations across Alberta. Over 200,000 computers have been distributed to date, over half of them during my tenure as Chair of this wonderful organization. My work with Alberta Computers for Schools was recognized in 2010 by APEGA when it awarded me with the Community Service Summit Award, one of my proudest moments.

I believe that it is my profession that has provided me with these opportunities and experiences, and I am committed to giving back by serving as an APEGA Councillor.



I received my Bachelor of Science in Electrical and Electronic Engineering from Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, in 1993. This is the best engineering university in the country and electrical engineering is one of the top engineering programs in the university. I got my master's in computer science from City College of New York. During my master's studies, I took

courses like operating systems, artificial intelligence, algorithms, software systems, theoretical computer science, the information marketplace or Internet, computer architecture, computer communications, computer security, scientific and statistical computing, and software design laboratory. I graduated with a high GPA. I got my M.Phil. in Electrical Engineering in Optical Communications in 2005 from City University of New York. After my immigration I attended a Government of Alberta-sponsored bridging program for foreign engineers at NAIT and learned about electrical design, PLC programming, and power systems.

Currently I am doing my personal development. I got my PMP certification this year and last April I passed the Principles and Practice of Engineering (PE) exam by NCEES for Electrical and Computer Power. I worked in WorleyParsons Canada in Edmonton from 2011 to 2015 and got valuable experience in the oil and gas transportation sector. I have successfully completed tank terminal farm electrical design for U.S. and Canadian facilities and provided construction support. I also worked in intermediate mainline valve electrical design at the same time. I also worked on electrical FEED for pump station facilities. I worked on an HV substation relocation project for mining operations. In 2010 I worked briefly at Electronic Control Systems at Nisku, and before that I worked for PECO Electrical at Nisku, for rig automation. At PECO I worked on electrical, automation, and control programming projects. We built skid-mounted systems with LV generation with Caterpillar engines.

I volunteered with Dr. Sorin Deleanu, P.Eng., for his NOVA project on permanent magnet synchronous motor (PMSM) controllers. Our research included modeling and parameter determination and simulation of controller prototypes. We used MATLAB-Simulink as a modeling tool and dSPACE Real-Time for loop control hardware design. Our work was published in scholastic journals.

Before that I was working on a survival job, the only way a fresh immigrant could pay the bills and work for professional recognition. I was working at Dell technical support group in Edmonton. I worked as an adjunct lecturer at City University of New York from 1999 until 2005, the year I got my M.Phil. in optical communications. I worked at CUNY Research Foundation and a startup company, Amtekron Inc., in New York during my M.Phil. studies. I also worked in software development in Manhattan and built online fitness software. It was state-of-the-art technology with three-tier architecture, Sybase at the backend supporting database, and web server at the frontend. For middle tier we used BEA WebLogic, a bean-persistent technology in J2EE Java platform.

This is all my North American experience. Everywhere, I started from the beginning and worked hard and tried my best against odds and became a professional. I was a senior engineer in my country, working on industrial and commercial facilities. Before that, from 1994 to 1997, I was working in the armed forces in my country as a Commissioned Officer. I worked as Workshop Manager and Officer-in-Charge for the field workshop. I also worked in the central workshop for small-arms inspection and the telecommunication shop. I started my career as a junior electrical engineer and designed residential and commercial facilities, then completed the construction and commissioned the facility. It was combination of engineering design, construction, and project management.

My involvement with APEGA is recent. I got my professional status in 2015. I tried to get involved and enrolled for volunteering for legislative review consultations. Now I am becoming a new mentor and helping potential Professional Members. I may not have much registered involvement at APEGA but I try to help fellow engineers my best. I try to keep their hope alive in this difficult situation. I try to create a bridge between people and put them together in a network. I feel an official status would help me help people more efficiently.

I work in the local community. I have volunteered for my community league and our religious community, by organizing activities and helping out. If people need direction, I take the leadership role.



I am a civil engineer with an undergraduate (2003) and a master's degree (2008) from the University of British Columbia. I have been working with Associated Engineering since 2003. In 2010 I moved to Alberta and am currently the Office Manager for Associated Engineering in Fort McMurray.

During my undergraduate program, I participated in the Co-operative Education Program, taking placements

with the Corporation of Delta in Delta, B.C.; Progressive Engineering in Calgary; Habitat for Humanity in Costa Rica; and the Department of Fisheries and Oceans in the Lower Mainland, B.C. I also studied one semester on exchange at the University of Chile in Santiago, Chile.

I completed my master's in Pollution Control and Waste Management as a CIHR/MSFHR Strategic Bridge Training Fellow at UBC in 2008. This multidisciplinary program combined public health, public policy, and engineering. My thesis topic was Use and Performance of BioSand Filters in Posoltega, Nicaragua. Field research included three months visiting rural communities in Nicaragua to assess the long-term efficacy of household drinking water treatment. Follow-up work included education and training programs to improve the biosand filter program in this region of Nicaragua. The work was performed in collaboration with the Centre for Affordable Water and Sanitation Technology in Calgary, the National Autonomous University of Nicaragua, and the local health centre in Posoltega, Nicaragua.

My thesis work and related technical presentations were recognized for awards, including the School of Occupational and Environmental Hygiene Joel Bert Award, and the Canadian Association of Water Quality Philip H. Jones Award. I published two papers based on my research work in the *Water Quality Research Journal of Canada*.

I started by career with Associated Engineering in 2003 as a water resources engineer in our Burnaby, B.C., office. From 2004 to 2005 I took leave to complete an internship through the Central American Water Resources Management Network at the University of Calgary, where I provided technical support to development projects in small rural communities in Guatemala. In 2006 as part of my master's thesis, I worked one summer for Klohn Crippen Berger in Vancouver, where I undertook field research for the social and environmental assessment for a proposed nickel mine in Guatemala.

I returned full time to Associated Engineering in 2008, where I worked from the Burnaby office on Municipal Infrastructure and First Nation community projects. In 2010 I transferred to Fort McMurray, as part of a two-year project management partnership with the Engineering Department of the Regional Municipality of Wood Buffalo (RMWB).

Since January 2013 I have led the Fort McMurray office for Associated Engineering, providing support to the regional municipality and other clients in the region, on infrastructure and community development projects.

In response to the 2016 Fort McMurray wildfire, I led the AE team assisting the RMWB with response and relief efforts. Our team provided remote operation of the water treatment plant to meet the firefighting needs for first responders, and the subsequent water system recovery plan. This included all the work to lift the boil water advisories and allow residents to safely return home following the evacuation.

I am the current Chair of the APEGA Fort McMurray Branch Executive. My involvement with APEGA started in 2012, when I took on the role of Outreach Coordinator with the Branch. I held this role for three years, and used the opportunity to engage our membership and local students in various activities that supported STEM. I have also held the role of Vice-Chair.

My other APEGA involvement includes proctor for the National Professional Practice Examination from 2013 to 2015, and a mentor in the mentoring program since 2015. I have also been a member of the APEGA legislative review champions collaborative since 2015. Through this process, I have gained insight into the proposed changes to address challenges that APEGA is currently facing as a self-regulated organization. A key motivation for running for Council is to help oversee the implementation of those changes arising out of this review.

I also want to act as a voice for the Fort McMurray region on Council, in recognition of the challenges we face. These include not only recovery from the wildfire, but also the ongoing economic situation that continues to impact our Members across the region and the province.

My volunteer associations include the Ptarmigan Nordic Ski Club, where I am a youth coach for cross-country ski lessons and sit on the executive as a member-at-large. Other interests include hiking, running, cycling, skiing, scuba diving, and international travel.



Why join APEGA Council?
I will start with the main reason: It was on my bucket list.

For 21 years, since I became a student member, I have been fascinated by the work of APEGA — so naturally I became a volunteer. I confess I am still getting used to the dropped second G in the APEGA name, but it definitely makes it easier to spell.

After graduation, I volunteered with two APEGA programs that fulfilled a strong desire in my heart: the desire of being a teacher. Those programs were APEGA Outreach and the National Professional Practice Exam (NPPE) committee.

As an E.I.T. volunteer through APEGA Outreach, I visited six different schools and demonstrated to Grade 1 students how strong construction materials are by relating to them the story of *The Three Little Pigs*. It was an incredible experience to form future engineers.

Then as a P.Eng. through the NPPE committee, I became an exam question author, where using my many years of engineering work experience I was tasked with creating five to 10 questions per month. I chose topics that I knew would guide future professionals because they helped me in the trenches of my project management job in oil and gas construction.

These days the dream of being a teacher has been fulfilled — because on September 6, 2016, I joined the Northern Alberta Institute of Technology (NAIT) as a sessional instructor teaching building products and materials. I have 30 students taking their diploma in construction management, and I can't wait to tell them, with some variations of course, the story of *The Three Little Pigs*, too. I have come full circle, eh? Teaching Grade 6 and now college.

Now that I am finally a teacher, I wish to expand my engineering horizons and join my beloved APEGA Council. My qualifications include:

- almost 16 years as an engineer in the oil and gas industry
- an APEGA volunteer for a combined eight years
- my incredible experience of nearly three years as a female in management
- being a proud Hispanic woman (born in Colombia, South America), a working wife, and mother of three bright kids

Furthermore, I have extensive governance experience in the charity sector.

My first board role started 12 years ago in a local mother support group called Edmonton VBAC Support Association ICAN of Edmonton, where later I was President for seven years. Then for two years I joined the board of ICAN International, based in California, with the role of Education Director due to my ability to review heavy medical research and translate it into common language for our mothers' membership. I created white papers, brochures, and articles in English, Spanish, and French for ICAN chapters around the world.

Four years ago, I joined the board of Synchro Alberta, the regulatory body for the sport of synchronized swimming in Alberta, for one term of two years. I was chosen because of my long experience as a judge in the sport. This past summer I was welcomed to join their task force to upgrade all governance documents.

Finally, for the last three years I have been Vice President of Education, President, and Area Director for two local chapters of Toastmasters: Pipe Up (at Enbridge) and Club Bilingue D'Edmonton (at Faculté Saint-Jean). Toastmasters are public speaking clubs where professionals improve their communication abilities.

Overall I have a diverse governance and organizational management resume that shows my commitment to my career and my community.

My participation will make for a stronger APEGA Council, one that is more than ready for the challenges of a varied membership. My suggestions will make for a more effective Council too, because it is in the multitude of perspectives that the best solutions can be found. I like to say that a problem may have three different solutions — or 39. You will never know until you get your best minds together.

I fulfill the required knowledge and experience in the areas listed by the Council: at least 10 years of business and organizational work experience, complete with a background in governance, regulatory, risk management, and strategic planning.

Joining APEGA Council at this midpoint of my career will be timely as well as exciting for me. It will also be a bonus for the APEGA membership that I will appeal to because of my background: women in engineering and geoscience, immigrants, and working parents.

It will be my great pleasure to join the APEGA Council.

FOR COUNCIL Terry Waters, P.Eng., M.Sc.



Terry has more than 45 years of engineering and managerial experience in project and construction management, over 30 years in a senior capacity. Most of this experience has been in Canada, and in his various assignments he has been an active Professional Engineer in five provinces in addition to Alberta, where he was registered in 1978. He was a Councillor in the Association of Professional Engineers of

Newfoundland in the '70s and has been on APEGA Council since 2014. He is now a non-practising Life Member of APEGA.

Terry attended three universities for his education in chemical engineering: University College London in England, the University of New Brunswick, and the University of Pennsylvania.

In his career he has strived to strengthen the Professional Engineer's role and obligations during construction, through to commissioning, operations, and maintenance of industrial facilities and infrastructure.

Terry wants to continue for three more years on Council to support the Association in its mission to improve its regulatory competence in Alberta and become more transparent and up-front with the general public in matters of public concern and safety.

He supports APEGA initiatives in promoting diversity in the Association and improving feedback from the membership at large.

Nearly half of the Association's membership was educated outside Alberta and our careers have become more global. As APEGA Members become more involved outside Alberta, he believes that more attention must be directed to the offshore and pan-Canadian work managed by Alberta professionals.

Terry also would like to continue his support of the APEGA legislative review, which will present the Government of Alberta with a detailed proposal to revise the *Engineering and Geoscience Professions Act*, making it more suited to the next 100 years of the Association.



Alberta is navigating through a time of major change and uncertainty as the economic climate remains unstable and many professionals are facing challenging circumstances. I am pleased to see APEGA respond by offering support and professional development geared toward job seekers and those looking to establish consulting businesses. This kind of response by APEGA demonstrates one of the many important functions that

this organization serves, and I would like to be a part of this service in a significant way.

Contribution to society is what drives me and is why I am seeking a position on Council. I obtained a Bachelor's Degree in Mechanical Engineering from the University of Calgary in 2005. I have spent most of my professional career at TransCanada, in a range of roles from design to project management to business strategy.

Early in my career, I performed research and development, optimized pipeline systems design, and supported construction of a power plant. I then obtained a project management certificate and moved into the dynamic world of project management.

A few years back, my passion for people and organizational development led to the role of Engineer-in-Training Program Manager, and I enjoyed learning from the perspectives of new graduates and coaching them in managing career challenges. That experience heightened my awareness of what young professionals are seeking in their career development and had me thinking about how APEGA may better connect with this cohort.

My current role is to support a business transformation undertaking, with a focus on shaping strategy and streamlining processes to enhance how the organization engages with external engineering service providers. I've learned that strategic planning is the easier part of my job. Truly enabling organizational excellence and fostering positive supplier relationships through proper stakeholder engagement and change management is the greater challenge. I've valued the experience in managing broad stakeholder groups and leading organizational change across North America. These skills are essential as a Council member, because APEGA's work inevitably requires driving forward-thinking action for our profession and the public, and consulting diverse stakeholders along the way.

One of the key challenges, as stated in APEGA's strategic plan for 2017-2019, is: "APEGA's ability to uphold the public interest requires a partnership with its Members and Permit Holders. The challenge, therefore, is to ensure that APEGA remains relevant to its membership." The organizational vision is: "APEGA will earn the confidence of the public and instill pride in its Members."

This challenge and the message from the vision statement have been on my mind for some time. I have connected with APEGA through volunteer positions at the Calgary Branch, and yet I see many of my peers not clearly understanding the work and value of APEGA. The organization's primary function is self-regulation, which I believe APEGA does extremely well, but this function can often be taken for granted by Members because much of the work is behind-the-scenes. I wish to support APEGA by more deeply understanding Member needs, listening to the public's concerns, bridging gaps, and driving results.

I am known as a person who can facilitate productive dialogue and action to tackle complex and ambiguous problems. My 10-plus years volunteering for Engineers Without Borders has provided opportunities to facilitate strategy sessions, deliver outreach and learning events, recruit and manage volunteers, influence corporate engagement, and co-chair an international development conference.

During my term as chapter Co-President, I'm humbled to have been recognized by the Women's Executive Network as one of Canada's Top 100 Most Powerful Women in the Future Leaders category.

Outside of work and volunteering, I love discovering life and outdoor adventures with my family. My husband is an engineer, my five-year-old is set on becoming a scientist who helps people when she grows up, and my three-year-old is up for anything. My husband and I want to demonstrate to our kids the many ways that being involved in the sciences can meaningfully contribute to society and personal fulfillment.

APEGA Activities

- Master of Ceremonies, Member Induction Ceremonies, Calgary (2011-present)
- Member, Nominating Committee (2010-2012)
- Member, Calgary Branch Executive and Meetings Committee (2008-2011)
- Member, APEGA (2005-present)

Affiliations, Corporate or Community Service

- Mentor, Women's Executive Network (2013-2015)
- Mentor, University of Calgary Global Engineering Program (2012-2013)
- Advisory Board Member, Oikocredit Canada-West (2011-2013)
- Advisor, Engineers Without Borders (EWB) Membership Committee, Global Engineering Team, and Calgary Chapter (2010-2011)
- Corporate Engagement Lead, EWB Calgary Chapter (2008-2010)
- Co-President, EWB Calgary Chapter (2007-2008)
- Fundraising Lead, EWB Calgary Chapter (2005-2007)
- School Outreach Lead, EWB University of Calgary Chapter (2004-2005)
- Finance Manager, EWB University of Calgary Chapter (2000-2003)



NOTICE OF ANNUAL GENERAL MEETING

In accordance with APEGA Bylaw 16(2) and the *Engineering and Geoscience Professions Act*, official notice of the 2017 APEGA Annual General Meeting is hereby given.

Friday, April 28, 2017 | 2 – 5 p.m.
TELUS Convention Centre | Calgary, Alberta

Luncheon 11:30 a.m. – 1:40 p.m.

Attendance Qualifies for CPD Credit

Visit apegasummit.ca for further information on APEGA Summit 2017

Have your say in how APEGA is governed. Cast your vote in the Council election.



The 2017 election runs from **Friday, February 17, to Sunday, March 19, 2017.**
Candidate information appears at www.apega.ca/election and in this edition of *The PEG*.

How to Vote

This year's election is being run by Everyone Counts, a leader in the electronic voting industry. The day the election started, Everyone Counts distributed PINs to eligible voters, using the primary email addresses listed in our database.

You must use your PIN to vote and follow the instructions in the email. *Votes will not be accepted through the Member Self-Service Centre, this year.*

Can't Find or Didn't Receive a PIN?

Call toll free 1-800-661-7020 or, from outside of North America, 780-426-3990.
Helpline staff will be available 24/7 until polling ends.



Consultations Underway Over Potential Bylaw Update To Change Mail and Electronic Voting Requirements

Under [APEGA's Bylaw 37\(3\)](#), a minimum of 10 per cent of Professional Members must respond in an electronic or mail bylaw vote for the result to be valid. But is that realistic, particularly when Council holds a vote on a matter that doesn't affect or isn't of interest to many Members?

Instead of holding a mail or electronic vote, Council can advance a proposed bylaw amendment to the [APEGA Annual General Meeting](#). A simple majority of those Professional Members who vote at a properly convened AGM is required for the result to be valid. But what if Council requires a response before the next AGM? As Council works on making APEGA a better and more nimble regulator, waiting that long won't always amount to effective governance.

These and other aspects of possible changes to Bylaw 37(3) are being covered [in consultations in Edmonton and Calgary](#), in advance of the 2017 AGM in Calgary on April 28. One more webinar on the subject also lies ahead, on March 1. Four videoconference sessions (live in Edmonton) are being held March 2 and March 3.

If any changes are approved at the AGM, they will not affect voting in Council elections, which are governed separately under Bylaw 6 and Bylaw 6.1

APEGA recognizes that the input of its Members is vital to APEGA's role in self-regulating the engineering and geoscience professions. Having an unrealistic required number of votes may interfere with APEGA's

ability to engage Members in setting APEGA bylaws.

Nonetheless, one of three options Council is considering is that no changes be considered at the AGM.

Option 1

Change the bylaw for a Member vote from requiring 10 per cent of all Professional Members to requiring a simple majority of the Professional Members who choose to vote.

Option 2

Change the bylaw from requiring 10 per cent of all Professional Members to requiring at least 400 votes from Professional Members.

Option 3

Do not change the bylaw, meaning that mail and electronic votes will continue to require a vote of 10 per cent of Professional Members for results to be valid.

Council is encouraging Members to choose either Option 1 or 2. The reasoning is covered in a [briefing note on the APEGA website](#). If you can't attend a consultation session, please read the briefing note and [complete a short survey](#) by March 4.

Council will consider Members' feedback at its March 23 meeting. If Council decides that Bylaw 37(30) should be updated, the revised wording will be presented at the AGM for a Member vote.

APEGA SUMMIT 2017

ANNUAL GENERAL MEETING & CONFERENCE

APEGA Summit 2017 Annual General Meeting and Conference takes place at the TELUS Convention Centre in Calgary from April 27 to 28, 2017.

The Annual General Meeting and Conference brings Members, Permit Holders, government representatives, and other professionals together for two days of professional development, collaboration, and celebration.

PROFESSIONAL DEVELOPMENT LUNCHEON SPEAKER



JACKIE RAFTER, MBA

APRIL 27, 2017

Calgary native Jackie Rafter is an expert in career transition, branding, and marketing services for professionals.

With her company, Higher Landing, she has achieved outstanding results for clients by casting aside traditional employment thinking and enabling people to tap into their potential while rebranding themselves to secure the best possible opportunities.

Jackie will discuss innovative strategies for career management in challenging economic environments.

APEGA SUMMIT 2017

PROFESSIONAL DEVELOPMENT CONFERENCE

APRIL 27 AND 28, 2017
TELUS CONVENTION CENTRE

Thursday, April 27: 8:30 a.m.– 4:30 p.m.
Friday April 28: 8:30 a.m.– 11:45 a.m.

*Eligible for up to 10 professional
development hours under the CPD Program.*

Staying current and aware of trends is a challenge for every professional. APEGA Summit 2017 offers a choice of 24 professional development sessions over a day and a half to keep you current. For more information and to register, visit apegasummit.ca.

SUMMIT AWARDS

APRIL 27, 2017
TELUS CONVENTION CENTRE

Dinner and Awards Presentation: 5:00 p.m.– 9:00 p.m.

The annual Summit Awards is APEGA's pre-eminent event. The awards recognize excellence in professional engineering and geoscience and the valuable contributions APEGA Members make to their communities. Buy your tickets at apegasummit.ca.

ANNUAL GENERAL MEETING AND LUNCHEON

APRIL 28, 2017
TELUS CONVENTION CENTRE

Registration: 11:30 a.m.

Luncheon: 12:00 p.m.– 1:30 p.m.

Annual General Meeting: 2:00 p.m.– 5:00 p.m.

Open to all Members and the public, the Annual General Meeting is your opportunity to discuss issues important to the professions, vote on matters brought before Council, and present motions for Council consideration.

www.apegasummit.ca



Major Milestone Reached in Legislative Review

Delivery of Act Changes to the Province Follows Strong Engagement in the Fall Consultation

After garnering the most stakeholder engagement in the process so far, the fourth round of consultation in the APEGA legislative review is now closed. In fact, Council has now submitted all proposed changes to the *Engineering and Geoscience Professions Act (EGP Act)* to the Government of Alberta (GOA), marking the attainment of a major milestone in the review. A submission on regulation changes is slated for the end of June.

The submission comes after Council endorsed the latest 20 proposed recommendations for improvements to our legislation. The endorsements followed three hours of Council discussions on January 25 that were both detailed and wide-ranging.

Councillors weren't the only ones deeply engaged in this stage of the review. The recommendations from the fall 2016 consultation earned unprecedented participation and input from stakeholders, especially those in the geoscience community.

Council listened, discussed, and reacted to the extensive feedback, seeking clarification from staff members working on the review and in one instance approving an amended proposed recommendation. In some cases, Council approved moving proposed recommendations forward to the province with the mixed feedback included.

SOLE PRACTITIONERS AND THE LEGISLATION

Council was particularly concerned about the effect of possible future legislation on the practices of sole practitioners.

One proposed recommendation would require sole practitioners to have Permits to Practice. By definition,

a sole practitioner has just one employee, which would mean he or she would be the Responsible Member (RM). Under the current Act, sole practitioners do not need a Permit to Practice.

However, there's a sound rationale for the proposed recommendation, Council heard. It would give the public and clients assurance that the same requirements are met by a Permit Holder, regardless of whether it's a sole practitioner or a corporation.

Also included in the proposed recommendation is further clarification that an RM would be professionally responsible for a company's Professional Practice Management Plan (PPMP) and for ensuring it is implemented and followed. The goal is to better protect the public through clearer definitions of what RMs are responsible and accountable for. The PPMP would clarify and emphasize that the quality management system used by a Permit Holder is an appropriate environment for the practice of engineering, geoscience, or both.

A proposed recommendation for mandatory professional liability insurance (PLI) was also a major point of concern. Individuals, partnerships, and companies that provide engineering and geoscience consulting services would be required to carry primary PLI to ensure that the public is protected in the event of errors or omissions.

Mandatory PLI would also protect the individuals and Permit Holders themselves from the cost of negligence and compensatory damages. Also, implementing the insurance would bring APEGA in line with many constituent associations in Canada and other Alberta self-regulating organizations.

Some stakeholders have said that an umbrella requirement for PLI wouldn't recognize the different realities sole practitioners face in their practices. The financial burden would be heavily felt by individuals and small companies, and insurance is a contractual issue that does not need to be addressed legislatively.

Taking these and other considerations into account, Council revised the proposed PLI recommendation to simply state that Council would have the authority to create policy, at a later date, on requirements for Permit Holders and Members to carry PLI. Council felt that more consultation was necessary to fully understand the issue.

THE GEOSCIENCE VOICE

Much of Council's discussion centred on comments from the geoscience community, an audience APEGA targeted in the consultation. One recommendation proposes an updating of the actual definition of the practice of geoscience to make it better reflect current technology and practice areas.

Representing a group of subject-matter experts, several geoscientists — who are also volunteers with the champions collaborative — assisted APEGA in shaping proposed recommendations for the definition of geoscience, descriptions of geoscience work products, and geoscience exemption changes. The champions collaborative is made up of APEGA professionals who share information about the review and generate participation and feedback.

The geoscience champions also reached out to their networks to build interest, leading to multiple in-house consultations with major Permit Holders and their staff, and two sessions — one in Calgary, one in Edmonton — held specifically for geoscience Members.

All the recommendations are considered proposed because the Government of Alberta (GOA), as owner of the legislation, will write the *EGP Act and General Regulation*. APEGA has been consulting with GOA on a weekly basis since September 2015.

THE FALL NUMBERS

More than 2,000 people provided input, making it the largest round of consultations since APEGA started collecting feedback in May 2015.

Members and Permit Holders participated through:

- 17 face-to-face sessions
- four in-house consultations
- eight webinars
- a survey
- numerous email submissions

Most survey respondents reviewed background material on the official legislative review website, before answering questions. About 20 per cent attended consultation sessions.

More than 50 per cent of respondents surveyed identified themselves as registered APEGA geoscientists, which suggests that more than 11 per cent of APEGA's Professional Geoscientist membership participated.

During the two-month-long survey, responses numbered 1,148, the most in any legislative review surveys posted so far.

- 87 per cent of survey respondents were Professional Members.
- Five per cent of survey respondents were Permit Holders.
- Two per cent were members of the public.
- Seven per cent identified as other.

Since consultation began in the spring of 2015, more than 6,000 Members and Permit Holders have provided valuable feedback on proposed recommendations.

MORE INFORMATION

A summary of the proposed recommendations and consultation responses can be found in [We're Listening: Fall 2016 Consultation Summary](#).

NEXT SESSION APPROACHES

One more round of consultation — the fifth — remains in the review, set to take place in May, this year.

APEGA appreciates everyone's participation in the 2016 fall session, which brought to a close our consultations on issues covered in the *EGP Act*. Planning is underway now for the final legislative review consultation with Members and Permit Holders. Proposed recommendations will primarily involve General Regulation items not covered in the fall of 2016.

Movers & Shakers

APEGA MEMBERS NAMED TO AVENUE'S TOP 40 UNDER 40

-photo by Curtis Comeau for Avenue magazine Edmonton



YOUNG AND SUCCESSFUL
Kairi Pawlick, P.Eng., (left) — a volunteering superstar; Fabiola MacIntyre, P.Eng. — project manager extraordinaire.



-photo by Erin Brooke Burns for Avenue magazine Calgary

A yearly roundup of bright, innovative, and young Albertans once again features APEGA Members. The Top 40 Under 40 includes one Member on the Calgary *Avenue* magazine list and one on the Edmonton *Avenue* magazine list.

Edmonton's **Kairi Pawlick, P.Eng.**, a senior associate with **Stantec**, was honoured for her countless volunteer engagements across the city. As well as co-chairing NextGen, an organization that gives a voice to young Edmontonians helping shape their city, she volunteers with APEGA, engaging with first-year engineering students through our **Outreach program**. Ms. Pawlick also mentors through Stantec's Emerging Leaders program.

Volunteering for groups like NextGen is "very different from the workplace," Ms. Pawlick told the magazine. "In community work, you're working with

people of different backgrounds, ages, and experiences towards a common vision. It's the bigger picture."

In Calgary, **Fabiola MacIntyre, P.Eng.**, earned a place on the list for her work as the Project Manager for Calgary's largest infrastructure project, the Green Line LRT. The multi-billion-dollar project will add 40 kilometres of track to the existing 59-kilometre LRT system. Expected to make 90,000 to 140,000 trips per day, the line will serve about 41 million passengers annually.

Ms. MacIntyre calls the project essential to Calgary's future. "We are now a city of more than a million people — we need to think about what we will need as a city of two million people. Projects like this, they're not just about what kind of city you want to live in, but what kind of city you want your children to live in."

ROYAL SOCIETY OF CANADA INDUCTS SCHULICH PROFESSORS AS FELLOWS

For their outstanding academic and scientific contributions, **Rangaraj Rangayyan, P.Eng., PhD**, and **Nigel Shrive, P.Eng., PhD, FEC, FGC (Hon.)**, both of the Schulich School of Engineering, were recently inducted as Royal Society of Canada 2016 Fellows.

Dr. Rangayyan, a professor emeritus who also serves on the **APEGA Education Foundation** board, has focused his research at the **University of Calgary** on medical imaging, a key tool in health diagnosis and treatment. His fellowship recognizes his outstanding scholarly achievements in biomedical engineering and computer-aided diagnosis.

Books by Dr. Rangayyan are used at several universities for research and teaching; one of his books has been translated into Russian and will soon appear in Mandarin, too. He participated in the development of several techniques for detecting abnormalities in biomedical signals and images, including some for breast cancer and the degeneration of knee-joint cartilage. His research into the early detection of breast cancer may lead to survival-rate improvements.

“Biomedical engineering is a very exciting area to work in,” Dr. Rangayyan says in a published interview. “It gives a lot of satisfaction when we can apply engineering methods and systems in the health field to assist specialists in completely different areas, like oncology, radiology, sports medicine, and orthopedic surgery.”

Although Dr. Shrive is a civil engineer, perhaps his greatest achievement is the development of an artificial knee that’s been implanted in thousands of people worldwide.

“I use the same principles from civil engineering to apply to bones and joints,” the professor says. “Ligament and bone are structures. They transport load from one part of the body to another. The basic, fundamental principles are the same, whether it’s a knee joint or a concrete building.”

Dr. Shrive has shaped the fields of masonry and concrete as much as medicine. His masonry achievements have effected change in codes of practice in Canada and Australia and — in the areas of knee injuries, joints, and tissues, and even the cardiovascular system — in clinical practice. It all adds up to a top-tier international reputation in civil and biomedical engineering.

APEGA service and recognition are big on Dr. Shrive’s resume. A longtime and current Board of



-photos courtesy University of Calgary Schulich School of Engineering

TWO FINE FELLOWS

Rangaraj Rangayyan, P.Eng., PhD, (top) and Nigel Shrive, P.Eng., PhD, FEC, FGC (Hon.), are new Fellows of the Royal Society of Canada.

Examiners member, he has two **Summit Awards** to his credit. He received the 2011 Frank Spragins Technical Award. And representing a team of researchers alongside **Janet Ronsky, P.Eng., PhD**, who’s mentioned in another of this edition’s Movers & Shakers items, he was presented the 2005 Alberta Innovation Fund Excellence in Research Award.

Dr. Rangayyan and Dr. Shrive are among 89 new Fellows named from across the country and a wide range of disciplines, elected by their peers in recognition of their outstanding scholarly, scientific, and artistic achievements.

Founded in 1882, the Royal Society of Canada comprises the academies of arts, humanities, and sciences. Its mission is to recognize scholarly, research and artistic excellence, to advise governments and organizations, and to promote a culture of knowledge and innovation.

PERMIT HOLDERS PREPARE FOR TAKEOFF OF CARBON-NEUTRAL COMMUNITY

Planes no longer take off from Edmonton's former City Centre Airport, but planning suggests new heights will be reached in renewable development on the site. APEGA Permit Holders **ISL Engineering and Land Services Ltd.** and **Stantec** are helping design the Edmonton project, which aims to be among the world's first carbon-neutral communities.

The 536-acre Blatchford community will be home to 30,000 residents in 11,000 units. Stantec provided design services to the **City of Edmonton** for stage one, which includes the first 250 residences and several parks on the community's west side.

The project is in the news because of City of Edmonton Council's December 12, 2016 approval of the framework for a renewable energy system, along with \$19.4 million in funding for its initial infrastructure.

Unprecedented in size and scale in North America, the system will include an exchange of energy between buildings, geo-exchange, solar photovoltaics, and sewer heat exchange. Greenhouse gas emissions are expected to be about 75 per cent lower — that's about 42,000 tonnes per year — than in regular neighbourhoods of similar size.

The project's civil works and land-use planning consultant, ISL Engineering, designed a plan for sewer and drainage services with the goal of reusing both sanitary and storm water. A six-hectare wetland system will allow storm water to be treated and reused. The plan also provides the option of having a wastewater treatment system that would supply grey water to households.

-artist's renderings courtesy City of Edmonton — Blatchford Community Website



THE SUN, THE EARTH, THE COMMUNITY

Photovoltaics and geo-exchange are part of the approved framework for a renewable energy system at the Blatchford community in Edmonton (left); storm drainage becomes habitat in the City of Edmonton's vision for the former City Centre Airport.

PLEASE TAKE A BOW, CAMROSE THEATRE PROJECT

Earning well-deserved applause in environmental construction is a Camrose performing arts centre that carries the name of an Alberta premier and his wife. The Jeanne & Peter Lougheed Performing Arts Centre in Camrose has received a 2016 Canadian Institute of Steel Construction National Award in Sustainability. APEGA Permit Holders **Read Jones Christoffersen**, **Whitemud Ironworks**, and **Canam Group** were all involved in bringing the 44,200-square-foot theatre into reality.

The centre features a photovoltaic array that blankets a 22-metre fly-tower. And it's the first theatre in North America to use LED lighting throughout — to light the stage, the house, the rest of the interior of the building, and even the building's exterior.

A collaboration of the **City of Camrose** and the **University of Alberta**, the \$24-million centre includes seating for 580 people in the theatre proper.

BIOMEDICAL ENGINEERING RESEARCHER EXPLORES EARLY DETECTION OF OSTEOARTHRITIS



-Photo courtesy Don Molyneux for the University of Calgary

Janet Ronsky, P.Eng., PhD, a researcher at the **University of Calgary’s** Schulich School of Engineering, is embarking on a study that could revolutionize the after-injury treatment of knee joints. Using dual-fluoroscopy — a type of real-time X-ray imaging — Dr. Ronsky is looking for a marker in the human body to help predict the risk of early onset of osteoarthritis after a trauma.

Statistics Canada has found that osteoarthritis is a leading cause of disability, affecting more than 10 per cent of Canadians over 15. A rupture of the anterior cruciate ligament (ACL) is a major risk factor for onset and development of post-traumatic osteoarthritis. By monitoring for changes in the body immediately after impact, the new technique would help diagnose patients before it’s too late for effective treatment.

Currently, the most commonly used X-ray technology works only when actual physical breakdown of cartilage can be viewed. By then, chances of changing the progression of the disease are slim.

Dr. Ronsky recently received close to \$600,000 from the Canadian Institutes of Health Research for a

KNEES AND NEEDS

Janet Ronsky, P.Eng., PhD, (centre) is searching for markers to detect the future onset of osteoarthritis after knee injuries. With her fellow researcher Steven Boyd, P.Eng., PhD, and an unidentified person posing as a patient on the treadmill.

multi-year study involving a focus group. She and her team will track 72 individuals with ACL deficiencies and 72 without, utilizing dual fluoroscopy and MRI to create a 3D construction or image of the knee.

“If we can capture how quickly the degeneration is occurring, we can identify people as high versus lower risk,” Dr. Ronsky says. Then, after therapeutic techniques are targeted and evaluated, “the right treatment at the right time” is more likely.

Dr. Ronsky is a two-time [Summit Award](#) recipient. In 2005, she and **Nigel Shrive, P.Eng., PhD, FEC, FGC (Hon.)** — who’s mentioned in another Movers & Shakers item in this *PEG* — represented a team when they accepted the Alberta Innovation Fund Research Excellence Award. In 2006, she was presented the Excellence in Education Award.

CALGARY SKYLINE TO REACH NEW HEIGHTS IN ARCHITECTURE AND SUSTAINABILITY

The Bow will be taller, at 237 metres. So will Brookfield Place, currently under construction and on its way to tickling the clouds at 247 metres.

But Calgary's third tallest building will top its peers in another claim-to-fame category. The TELUS Sky Tower, a 58-storey, 221-metre, \$400-million structure, will be the first of its Calgary peers to reach current LEED Platinum standards.

LEED stands for Leadership in Energy and Environmental Design. Developed by the non-profit U.S. Green Building Council, it's popular worldwide as a green building certification program. Platinum certification is the highest level a building can earn.

Set to be completed later this year, the TELUS Sky Tower is generating buzz for its distinctive

design. Permit Holder **Glotman Simpson Consulting Engineers**, led by one of its principals, **Anthony El-araj, P.Eng.**, is the structural designer for the project.

Design challenges were plentiful, because of the building's unique geometry, including a 3.6 length-to-width ratio, plus its slab terracing and the structural twist of its pixelated facade. The company decided on columns being placed around the building's perimeter, avoiding the need for interior columns.

The columns match the pixelation bays and employ a lateral-load resisting system. A shear wall layout provides strength and stiffness for the structure, making it wind resistant while accommodating the demands of the horizontal thrust loads of so-called "walking" columns.

Also putting on their innovator hats were the engineers working for Permit Holder **Reinbold Engineering Group**. With others, they designed the office portion of the tower for LEED Platinum certification, creating an energy system that will allow the TELUS Sky Tower to consume 30 per cent less energy than similar buildings.

Office and residential building areas are connected to the **ENMAX** District Energy System, which distributes hot water through underground pipes in a closed-loop system, connecting heat exchangers in individual buildings. Displacement ventilation systems supply air from central, heat-recovery air handlers, which use heat from exhaust air to produce tempered fresh air.

A solar photovoltaic system, supported by half the area of the rooftop, will add 32,000 kilowatts per year to the building's power system. Rain will be captured for roof top gardens. Grey water will be treated for reuse in toilets.

Permit Holder **Integral Group** is integrating all the building's systems so they're controlled and synchronized through a single and central building automation system, maximizing energy efficiency.



BOW HEIGHT CHALLENGER?

The angle of this rendering suggests that the new TELUS Sky Tower might actually be taller than The Bow in Calgary's downtown. Actually, it comes in at number three — but the tower will be number one in LEED status.

MORE, MORE, MORE FOR SCHULICH SCHOOL OF ENGINEERING

Facility-wise, there's more of everything students need to succeed at the **University of Calgary's** Schulich School of Engineering. Thanks to a major expansion named the Canadian Natural Resources Limited Engineering Complex, which opened in the fall of 2016, students are now making use of two new 240-seat theatres and more classrooms, labs, workrooms, and research space.

The \$174-million expansion has added about 18,300 square metres of space. The project also featured 11,100 square metres of renovations to the existing engineering complex.

Permit Holder **Canadian Natural** earned naming rights for the complex by donating \$7 million towards the project. "As leaders in the oil and gas industry, investing in the future of engineers and the engineering profession is important to the growth, innovation, success, and safety of Canadian Natural's operations," the company says.

New research spaces will include two floors of labs to support leading-edge research in areas such as clean energy technology and renewable energy resources. Several undergraduate design labs will encourage students to put their ideas into practice.

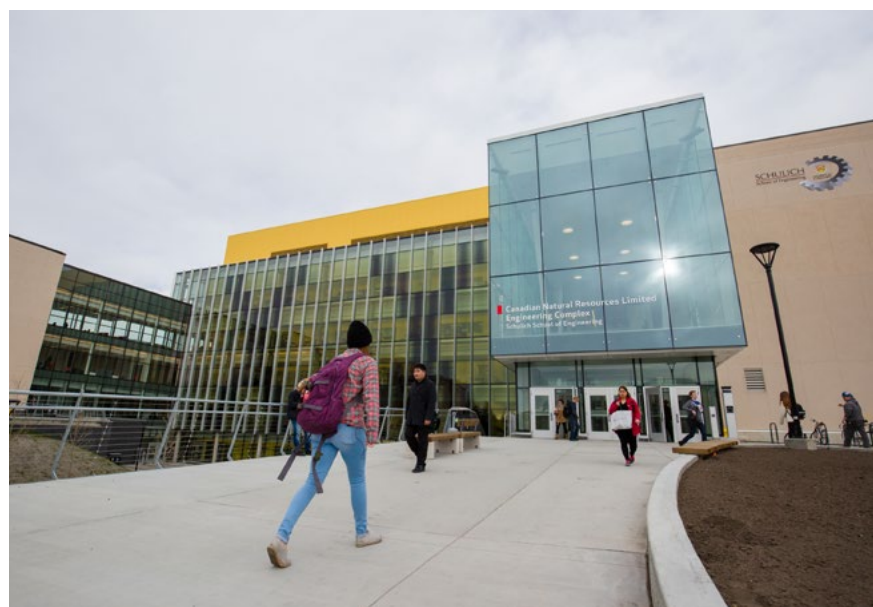
"This expansion will make the Schulich School of Engineering a centre of excellence for collaborative teaching, learning, and engineering research," says **Bill Rosehart, P.Eng., PhD**, Dean of the Schulich School of Engineering.

The complex features abundant study and social space, with an enlarged student lounge and a "social staircase" designed as a central hub and offering even more study space. Renovations included linking to other engineering blocks, making it easier to move between buildings.

Although it introduced natural light and a sense of openness throughout the complex, the project also preserved some of the former structure. An original 1960s staircase remains, and some exterior walls became interior walls.

"We are focused on student success and on providing quality hands-on lab and design experiences," says Dr. Rosehart. "This project gives us the space to offer an enriched learning environment, inside and outside the classroom."

Work continues into 2017 on new workshops and a new and expanded student services and career centre.



ONE MAJOR UPGRADE

Inside (top) and outside, the Canadian Natural Resources Limited Engineering Complex is bigger, newer, and better, after \$174 million in work.

-photos courtesy University of Calgary Schulich School of Engineering

Make an Impact

Build the Future by Volunteering

Volunteer Opportunities

- Committees
- Special Events
- Youth and University Outreach
- Mentoring

Current APEGA volunteer opportunities are posted on the volunteering section of the APEGA website

Volunteer Benefits

- Earn Continuing Professional Development Credit
- Expand Your Business Network
- Develop Skills, Knowledge, and Experience
- Give Back to Your Profession
- Have Fun

Note: Your acceptance in a particular volunteer position depends on spaces being available and the suitability of your qualifications.

Contact us:

Cam McCormick, Volunteer Manager
1-800-661-7020, Ext. 2517
volunteer@apega.ca



Share Your Knowledge and Experience

APEGA Members are needed for the following volunteer opportunities

Environmental Professional Practice Subcommittee

APEGA seeks Members to serve on the Environmental Professional Practice Subcommittee.

Candidates must:

- be an APEGA Member licensed as a P.Geo., P.Geol., P.Geoph., or P.Eng.
- have background and current practice in environment-related geoscience or engineering

Engineering Professional Standards Subcommittee

Professional Engineers are needed to assess and evaluate APEGA Professional Practice Standards, Guidelines, and Bulletins related to the professional practice of engineering to ensure that they are adequate to protect the public interest. Members of this subcommittee will propose revisions or additions to the Practice Standards Committee as needed by the Committee's mandate.

Candidates must:

- be an APEGA Member licensed as a P.Eng.
- be a Responsible Member for their firm
- specialize in one of the following engineering disciplines:
 - » structural
 - » civil, geomatics, or both
 - » geotechnical
 - » chemical
 - » mechanical
 - » petroleum
 - » electrical

Geoscience Professional Standards Subcommittee

Professional Geoscientists are needed to assess and evaluate APEGA Professional Practice Standards, Guidelines, and Bulletins related to the professional practice of geoscience to ensure that they are adequate to protect the public interest. Members of the subcommittee will propose revised or new Standards, Guidelines, and Bulletins to the Practice Standards Committee as needed by the Committee's mandate.

Candidates must:

- be an APEGA Member licensed as a P.Geo., P.Geol., P.Geoph., or P.L.(Geo.)
- specialized in geological engineering

National Professional Practice Exam Question Author

APEGA Members are invited to volunteer to help produce new, high-quality examination questions to add to the National Professional Practice Exam (NPPE) item bank, for use in future administrations of the NPPE.

Candidates must:

- be willing and committed to writing exam questions regularly
- possess the strong English language skills necessary to write high-quality examination questions
- be a Professional Engineer or Professional Geoscientist licensed with APEGA or an equivalent Canadian self-regulating organization
- have two-plus years of work experience
- have a working knowledge of professionalism, law, and ethics as outlined in the NPPE scope and syllabus

Professional Practice Examination Committee

The Professional Practice Examination Committee (PPEC) works on ensuring that new registrants know and understand the professional, ethical, regulatory, and legal responsibilities of practising Professional Engineers and Professional Geoscientists. The assessment used to determine if registrants know the subject matter should be valid, reliable, and fair.

The major objective of the PPEC is to ensure that the National Professional Practice Examination (NPPE) is a current, meaningful, and relevant examination in professional practice and is administered to new registrants in a manner satisfactory to the APEGA Board of Examiners.

Candidates must:

- be licensed with APEGA as a P.Eng., P.Geo., P.Geol., P.Geoph., or P.L. in good standing
- have significant experience as a Professional Member, ideally with more than 10 years of industry experience
- have a minimum of five years of Canadian professional membership, with APEGA or any other Canadian engineering or geoscience self-regulating organization
- be highly proficient in spoken and written English

Applicants from all disciplines of engineering or geoscience are encouraged to apply. Candidates with experience in infrastructure projects, geophysics, and environmental practice are always needed.

Edmonton Pi Challenge Volunteers

APEGA is looking for enthusiastic volunteers willing to share their passion for math and its engineering and geoscience applications with Grade 8 students.

The 2017 APEGA Pi Challenge takes place April 8, 2017, at the Whitemud Crossing Public Library.

Successful candidates must:

- arrive before the event starts and assist with general setup
- serve as positive role models for the engineering and geoscience professions
- assist with a variety of tasks
- assist with cleanup, teardown, and pack-up

Note: We also require Pi Challenge Working Group volunteers to create curriculum-based math questions for junior high students.

Calgary Science Olympics

APEGA is looking for enthusiastic volunteers interested in sharing their passion for engineering and geoscience with students at the 2017 APEGA Science Olympics. This great opportunity to foster a love for engineering and geoscience in students takes place May 27 at WinSport Arena.

Successful candidates must:

- observe teams meeting challenges so they can judge projects and performance
- encourage students (Grade 1-12), reward creativity and perseverance, and act as role models
- assist in event setup and teardown, along with other tasks throughout the day
- attend a volunteer orientation

For further information on any of the opportunities listed here — or other APEGA-related volunteer opportunities — please contact::

Cam McCormick, Volunteer Manager
1-800-661-7020, Ext. 2517
volunteer@apega.ca

You can also check out the volunteer section of the APEGA website.

SCHULICH SCHOOL OF ENGINEERING CELEBRATES BUSINESS LEADERS

More than 300 business leaders, donors, and alumni gathered with **University of Calgary** students, faculty, and staff to celebrate leadership in engineering, December 8 at the 25th annual Schulich School of Engineering Dean's Holiday Reception.

In recognition of his outstanding achievement, determined leadership, and generosity, **Vince Davoli, P.Eng.**, Senior Vice President of **EllisDon** for Western Canada, received the prestigious Canadian Engineering Leader Award. Mr. Davoli, who earned his bachelor of science degree in civil engineering at the University of Calgary, is a longtime supporter of the school. He serves on the cabinet for the Engineering Leaders Campaign and was a member of the Engineering Associates Program for more 15 years.

After more than 30 years with EllisDon, Mr. Davoli is transitioning into retirement. While working his way up to his current role, he has earned the respect of many individuals across the construction industry.

"I did not set out to be a leader, I set out to make a difference," Mr. Davoli said as he received the award. "We all have a role to play by bringing positive values forward to do good for all."

Mr. Davoli has supported community initiatives in many different capacities. He is the Director of Renfrew Educational Services, which helps children with

special needs, and a strong supporter of ConnecTeen, which offers confidential, volunteer-based, peer-support services for youth in Calgary and area, via phone, text, chat, and email.



A LEADER AMONG LEADERS

Vince Davoli, P.Eng., centre, accepts his award from University of Calgary Provost and Vice-President (Academic) Dru Marshall, left, and Schulich School of Engineering Dean Bill Rosehart, P.Eng., PhD.

-photo courtesy Schulich School of Engineering

PIPELINES OR RAILWAYS?

STUDY COMPARES ENVIRONMENTAL IMPACT OF TWO MODES OF BITUMEN SHIPPING

If the quantity and distance are right, shipping bitumen by pipeline may be more environmentally friendly than railway — and researchers at the **University of Alberta** appear to have worked out that tipping point. **Amit Kumar, P.Eng., PhD**, a professor of mechanical engineering with the U of A's Faculty of Engineering, and his team compared the carbon footprints of each method, looking at emissions for the lifecycles of a pipeline and a railcar.

Their findings, published in the journal *Environmental Science and Technology*, show that when transporting large amounts of bitumen over long distances,

pipelines produce 61 to 77 per cent less greenhouse gas than rail. But rail is more efficient for small-scale transportation of up to 50,000 barrels per day.

The study was prompted by discussions around the Keystone XL pipeline. The team's calculations included greenhouse gas emissions related to construction, production materials, transportation, and pumping mechanisms.

Dr. Kumar says knowing the carbon footprint of the two transportation methods will allow stakeholders to make science-based decisions in a controversial industry.

ALBERTA BUSINESS HALL OF FAME WELCOMES APEGA MEMBER

-photo courtesy PCL Construction



Paul Douglas, P.Eng., is among three Albertans who in May will be inducted into the Alberta Business Hall of Fame for outstanding contributions to the business community.

Each year, the hall recognizes business leaders who have made significant

contributions to Alberta's economic development and the business community. Inductees must have demonstrated vision, leadership, and civic involvement.

Mr. Douglas became chairman of the board of PCL Construction Holdings Ltd. in 2016, one of Permit

Holder **PCL**'s companies. Before that, starting in 2009, he led PCL as President and CEO.

In 2013, he was awarded a Queen Elizabeth II Diamond Jubilee medal. In all, 60,000 medals were awarded across the country — but only 38 were designated for Canadians demonstrating outstanding service in the construction industry.

In 2014, the Canadian Construction Association presented him with the Community Leader Award. In 2015, Mr. Douglas was recognized for his distinguished service in support of arts and culture, community service, and sports with a **City of Edmonton** Salute to Excellence Citation Award. The same year, he became *Alberta Venture* magazine's Alberta Business Person of the Year.

Mr. Douglas has served on the Edmonton International Airport Business Advisory Committee and run successful campaigns supporting the United Way. He also helped establish Celebrate Edmonton, a group of nine companies seeking to develop civic pride by supporting community initiatives.

INTERNATIONAL OIL AND GAS EXPERT JOINS SNC-LAVALIN'S BOARD OF DIRECTORS

The board of directors of Permit Holder **SNC-Lavalin** welcomed a new face to its table in November.

Catherine J. Hughes, P.Eng., who holds a degree in Electrical Engineering from the Institut National des Sciences Appliquées de Lyon in France, brings with her over 25 years of international experience in oil and gas.

Ms. Hughes started her career with Permit Holder **Schlumberger** and held key positions internationally, working in countries like Italy, Nigeria, the U.K., the U.S., and France. She was President of Schlumberger Canada Ltd. for five years in Calgary.

Ms. Hughes was Vice-President, Operational Services, Technology and Human Resources, at **Nexen Inc.**, from September 2009 to November 2011. From January 2012 until her retirement in April 2013, she

served as Executive Vice-President International.

In this role, she oversaw all oil and gas activities for Nexen, including exploration, production, development, and project activities outside of Canada.

From 2007 to 2009, she was Vice-President, Oil Sands, at Permit Holder **Husky Oil**.



-photo courtesy SNC-Lavalin

FROM FORT MCMURRAY TO ST. ALBERT – APEGA MEMBER BECOMES CITY MANAGER



-photo courtesy St. Albert Gazette

The City of St. Albert welcomed a new City Manager at the beginning of 2017. **Kevin Scoble, P.Eng.**, is the former Deputy Chief Administrative Officer (Deputy CAO) of the **Regional Municipality of Wood Buffalo**.

After leaving Suncor in 2010, Mr. Scoble joined the regional municipality as Director of Environmental Services, before taking on the role of Deputy CAO a year and a half ago. Mr. Scoble says the move to St. Albert allows him, his wife, and

their two sons to be closer to family and friends.

Frequent visits to St. Albert as a coach of baseball and hockey mean that Mr. Scoble is no stranger to the city. "It's got great services, amenities, and programs," he told the *St. Albert Gazette*. "I'm looking forward to maintaining and enhancing those, and my family and I are really excited about becoming contributing members of the community."

CALGARY BRANCH CALENDAR

LUNCHEONS

TUESDAY, MARCH 14

APEGA President's Visit

Dr. Steve E. Hrudehy, P.Eng., FEC, FGC (Hon.), FCAE, FSRA

THURSDAY APRIL 20

Alberta's Electricity Evolution – An Agency View

Mike Law, Senior Vice-President and Chief Operating Officer, Alberta Electric System Operator

THURSDAY, MAY 25

Climate Change Strategy: Federal & Provincial Emissions Reduction Policies

Jennifer Winter, Scientific Director, Energy and Environmental Policy The School of Public Policy, University of Calgary

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

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

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

To register: apega.ca
 Or phone 403-262-7714, toll free 1-888-262-3688

SPONSORS



BLUESPARK



GARRETTAGENCIES



EDMONTON BRANCH CALENDAR

LUNCHEONS

WEDNESDAY, MARCH 8

Location: Westin Hotel, 10135 100 St.

Mayor's Luncheon

Mayor Don Iveson

TUESDAY, MARCH 21

EDMONTON BRANCH AGM & LUNCHEON

Battle the Beast: ATCO Responds to the Fort McMurray Wildfire

Nathan Carter, P.Eng.

THURSDAY, MAY 25

Infrastructure Growth in Alberta

Edmonton Millwoods MP Amarjeet Sohi

Minister of Infrastructure and Communities

Luncheons held at: Sutton Place Hotel, 10235 101 St., Edmonton
 (unless otherwise noted)

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

To register: apega.ca
 Or phone 780-426-3990, toll free 1-800-661-7020, ext. 2338
 Or email events@apega.ca

SPONSORS

Platinum



Gold



Silver



GARRETTAGENCIES



Looking for Qualified Engineers or Geoscientists?

jobboard.apega.ca



Our job board is exclusive to
APEGA Members.

Save time by getting your job posting
in front of the right candidates.

Visit the job board today or email
jobboard@apega.ca.



Learn from the Best in Your Industry!



Gain personalized guidance from
an experienced Member.

Hundreds of Professional Members are waiting to
meet you through APEGA's online matching software.

Become a **mentee** with APEGA's Mentoring
Program.

Sign up at www.apega.ca/mentoring.



MEMBER BENEFITS

Eligible APEGA Members can take advantage of the following discounts. Complete details of these group benefits can be found at apega.ca under Member Benefits and Member Insurance. Due to seasonal or other limited-time promotions, the Member discount may not be the lowest price — you are advised to compare. APEGA does not hold any Member insurance profile or policy information.

To inquire about these benefits, check your eligibility, or provide service feedback, please email memberbenefits@apega.ca.

TRAVEL



Hotel and car rental travel search engines
Below-market travel discounts. Up to 35% discount on pre-booked worldwide car rentals



5% off current national rates



10% off current national rates



10% discount value with valid APEGA Member card



5% off regular rates (for BUSINESS only)

FINANCIAL



Financial Planning Services: 20% discount for APEGA Members

BUSINESS



10% off all document-management project rates and 5% off subject-matter expert rates for document management

PERSONAL



10% off select regular priced items



15% off on resume services

ENTERTAINMENT



50% off first year Associate Membership

EDUCATION



10% off admission, IMAX and annual membership

INSURANCE DISCOUNTS



Professional Liability Insurance

Pro-Form Sinclair Professional, A division of



Secondary Professional Liability Insurance



Manulife Authorized Advisor



THE FUTURE – INSPIRED!



You are an Alberta Engineer or Geoscientist.

You are proud of your profession and the hard work it took to get where you are today.

You are grateful for the opportunities that your profession has given you.

You probably received financial assistance, mentorship, advice & encouragement that helped you along the way.

And now, you want to give back to the profession that has given you so much.

The APEGA Education Foundation is your way to give back. Every gift inspires the future!

Donate today at apegaeducationfoundation.ca

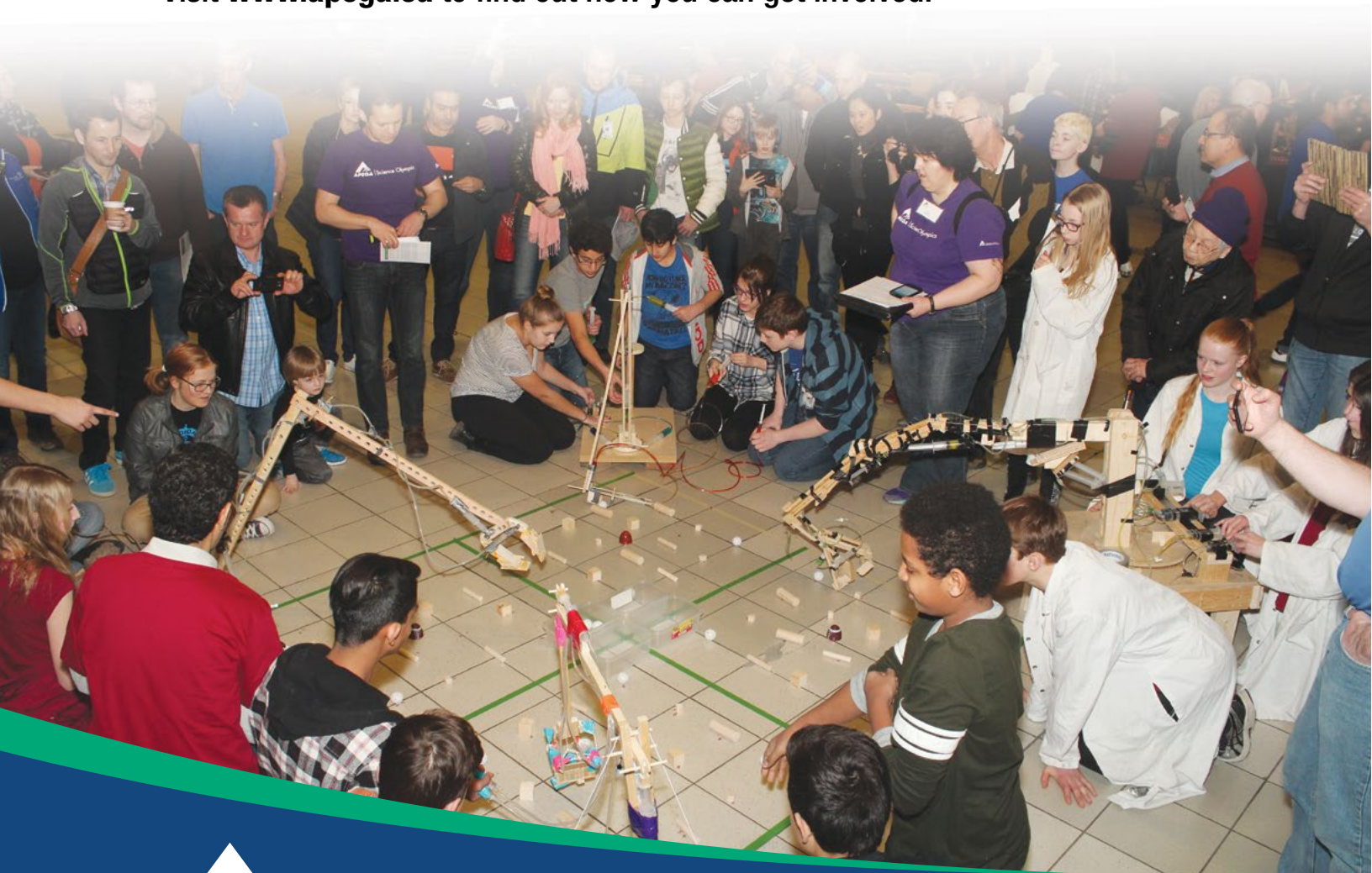


Celebrate National Engineering & Geoscience Month

March 1–31

APEGA, our volunteers, and our Branches are hosting a number of exciting events aimed at exposing youth to the professions in a hands-on, creative fashion.

Visit www.apenga.ca to find out how you can get involved.



March 19-21, 2017

Big Four Building

Stampede Park

Sunday, March 19
11:30 am – 5:00 pm

Monday, March 20
8:45 am – 2:45 pm

Tuesday, March 21
8:45 am – 2:45 pm



Come Join Us!

Earth Science for Society (ESfs) is a fun, educational, and dynamic geoscience outreach event in which students, families, youth groups, and the public are given an opportunity to explore Earth Science fundamentals. Visitors will enjoy a variety of interactive activities, including gold panning and a fossil hunt.



March 19th Geo-Theatre talks:

- **Pluto Revealed:**
Don Hladiuk
- **Cruising the Arctic – A Voyage Through Time and Change:**
Jon Dudley

For more information or to volunteer go to esfscanada@gmail.com or esfscanada.com

Hosted by:

 **CSEG** Foundation
CANADIAN SOCIETY OF EXPLORATION GEOPHYSICISTS



Learn from the Best in Your Industry!

Gain personalized guidance from
an experienced Member.

Hundreds of Professional Members are waiting to
meet you through APEGA's online matching software.

Become a **mentee** with APEGA's Mentoring
Program.

Sign up at www.apega.ca/mentoring.