PEG

FALL 2017

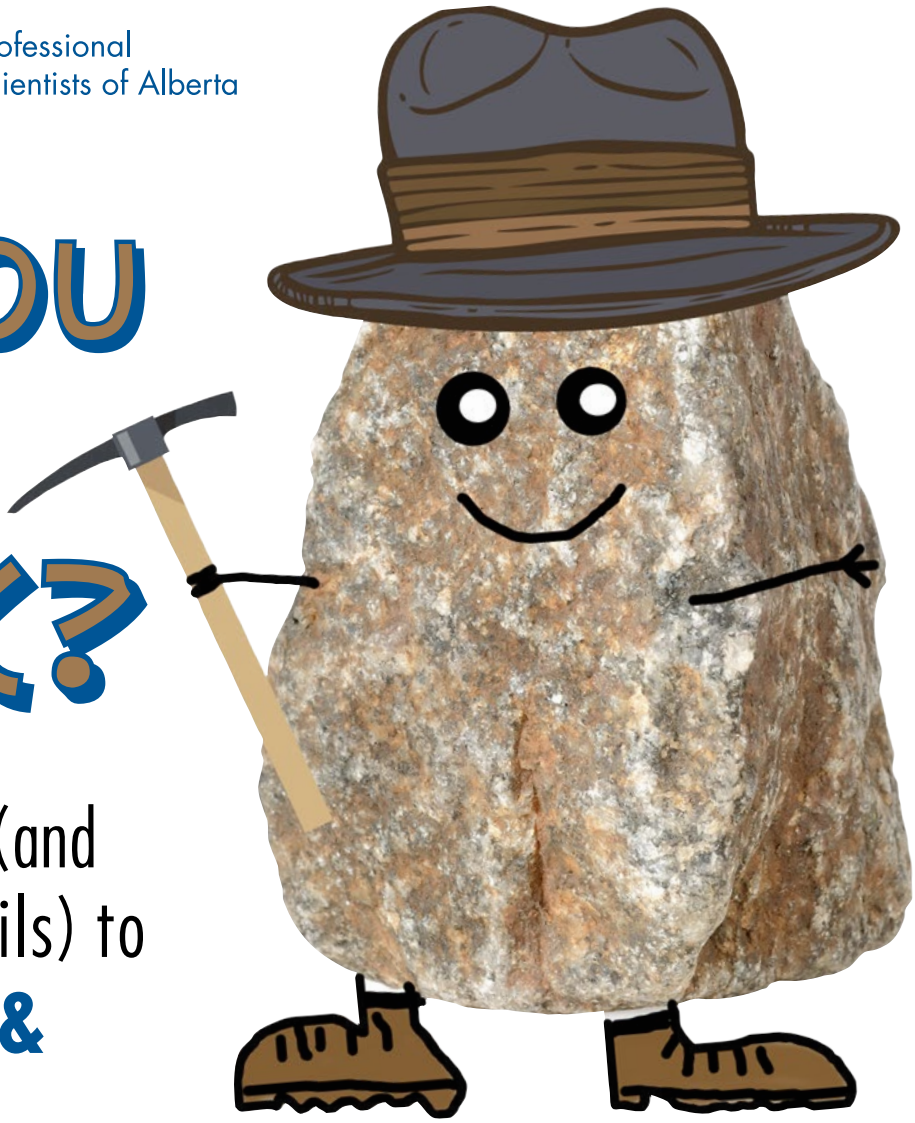
SALARY SURVEY SUMMARY

The Association of Professional Engineers and Geoscientists of Alberta | apega.ca

APEGA

APEGA The Association of Professional Engineers and Geoscientists of Alberta

ARE YOU INTO ROCK?



Bring your families (and their rocks and fossils) to the **APEGA Rock & Fossil Clinic.**

Professional Geoscientists and their team will inspect your collections and share all sorts of fun facts — for free!

Saturday, October 14
10 a.m. to 4 p.m.
TELUS World of Science — Edmonton

Please do not bring any rocks and fossils taken from provincial and national parks. It is illegal to remove, deface, or destroy fossils and rocks from all provincial and national parks.

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PEG

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Director of Communications **Philip Mulder**, *APR, FCPRS, FEC (Hon.), FGC (Hon.)* ✉ Philip.Mulder@apega.ca

Editor **George Lee**, *FEC (Hon.), FGC (Hon.)* ✉ George.Lee@apega.ca

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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.

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

Inquiries: George.Lee@apega.ca

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Chief Financial & Administration Officer **Sharilee Fossum**, *CPA, CMA, ICD.D, MBA*

Chief Regulatory Officer **Matthew Oliver**, *P.Eng., CD*

Director of Stakeholder & Council Relations **Pam Cholak**, *MBA*

BRANCH CHAIRS

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

Central Alberta **Genesh Chariyil**, *P.Eng.* centralalbertabranch@apega.ca

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

Fort McMurray **Roya Iranitalab**, *P.Eng.* fortmcmurraybranch@apega.ca

Lakeland **Azam Khan**, *P.Eng.* lakelandbranch@apega.ca

Lethbridge **Albert Tagoe**, *P.Eng.* lethbridgebranch@apega.ca

Medicine Hat **James Johansen**, *P.Eng.* medicinehatbranch@apega.ca

Peace Region **Youssef Iskandar**, *E.I.T.* peaceregionbranch@apega.ca

Vermilion River **Dustin Wiltermuth**, *P.Eng.* vermilionriverbranch@apega.ca

Yellowhead **Colleen Mireau**, *P.Eng.* yellowheadbranch@apega.ca

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

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Congratulations

2017 Engineering Fellows

APEGA and Engineers Canada are proud to congratulate the 2017 recipients of the Engineers Canada Fellowship.

The Engineers Canada Fellowship program recognizes Professional Engineers and non-engineers who have made outstanding contributions to the engineering profession through their professional accomplishments.

Clay Bos, P.Eng., FEC, FGC (Hon.)

Peter Daniel Burns, P.Eng., FEC, FGC (Hon.)

Ram Chadha, P.Eng., FEC, FGC (Hon.)

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2017 Geoscience Fellows

APEGA and Geoscientists Canada are proud to congratulate the 2017 recipients of the Geoscientists Canada Fellowship.

The Geoscientists Canada Fellowship program honours individuals who have given noteworthy service to the geoscience profession, through service to Geoscientists Canada, service to one of the constituent associations of Geoscientists Canada, or service in another capacity.

Clay Bos, P.Eng., FEC, FGC (Hon.)

Peter Daniel Burns, P.Eng., FEC, FGC (Hon.)

Ram Chadha, P.Eng., FEC, FGC (Hon.)

Marcella Fiorillo deJong, P.Eng., FEC, FGC (Hon.)

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engineerscanada

APEGA The Association of Professional Engineers and Geoscientists of Alberta

GEOSCIENTISTS GÉOSCIENTIFIQUES CANADA

A Past to Celebrate, A Future to Plan

BY **JANE TINK,** *P.ENG., FEC, FGC (HON.)*
APEGA President

This year, many of us celebrated the 150th anniversary of Canada's Confederation. I hope each of you had an opportunity to mark this significant milestone in Canada's history with your family, friends, and neighbours. In just over two years, APEGA Members will have another special anniversary to celebrate — APEGA's centennial is in 2020.

With both these milestones in mind, I began to think about how far we have come. I thought about the changes that have occurred in our country, our province, our professions, and our Association, and about the role our Members and their innovations have played. I spent time researching the history of our Association and the impact of our professions.

On the website of the Engineering Institute of Canada (EIC), I discovered a number of history articles, including one, titled *Engineering Designations of National Historic Significance*, that lists Canada's historic sites by province. Among the Alberta sites mentioned are Yellowhead Pass in Jasper National Park, the aqueducts in Brooks, and the Galt irrigation canals in Magrath. Turner Valley's gas field and plant are on the list, and so are the Leduc oilfield and the Waterton Lakes National Park oil well, which is the first oil well in Alberta and, for that matter, in Western Canada. Some of these sites are simply marked with plaques, but others, such as the Turner Valley Gas Plant, are open to visitors.

Reading the list, originally compiled by Parks Canada, I found it easy to appreciate how important both the agriculture industry and the oil and gas industry are to our provincial economy and the APEGA professions. As we look forward to our centennial and our next 100 years, we should not forget the foundation that was laid for us. These landmarks were created without the use of calculators, computers, the Internet, or cell phones. The calculations were done using slide rules, and the designs utilized both training and experience.

Other papers on the EIC site look at historic Canadian inventions. When you read about them and think about the number of innovations in the last decade alone, you can appreciate how rapidly we are developing and improving our scientific knowledge, technology, and applications.

A COAL MINING STORY

In my trip to the past, I read an interesting book called Bankhead: The Twenty Year Town. Written by Ben Gadd, it tells the story of a coal mining town within Banff National Park at the base of Cascade Mountain. CPR geologists started evaluating the coal seam there in 1902, but this seam was different: it went upwards. The author described this as a "geologist's joy" but a "mining engineer's nightmare."

The book outlines some of the innovations that allowed the men to get the coal to market. One of these was mixing fines with imported pitch and pouring the liquid into rotating drums to create little lumps of coal, or briquettes. Others related to blasting upwards while keeping miners safe from the coal raining down.

The Bankhead mining town sprung up almost instantly in 1904 and thrived for 20 years, a mix of people of different nationalities living together in a town with municipal water, sewer, and even electricity. However, as with most coal mines of the day, miners suffered from black lung from breathing in coal dust and went on strike. Around the same time, the federal government shut down mining and prospecting in our national parks, stating that a coal glut made them unnecessary. The mine and town were

“OUR INNOVATIONS AND DISCOVERIES AFFECT PEOPLE’S LIVES, AND NOW, MORE THAN EVER, WE NEED TO BE MINDFUL OF OUR ETHICS, OUR PROFESSIONAL INTEGRITY, AND THE IMPACT WE HAVE ON SOCIETY.”

cleaned up, and in 1926 its buildings were moved to the towns of Banff and Canmore.

Bankhead: The Twenty Year Town contains drawings of the geology of the site and the engineering innovations the mining there required, along with photos of the town and town life. The book ends by describing a 50-year reunion at the townsite of people who had lived there.

The stories that come out of this one little town illustrate how long our professions have been working together in Alberta to meet society’s demands, in this case mining coal for the war effort. Geologists found the coal deposits and mapped them. Engineers, with the help of geoscientists, selected or devised the innovations necessary to get the coal to market.

These stories also remind us that the boom-and-bust path our province has travelled goes back a long way. Yet another lesson is that our innovations and discoveries affect people’s lives, and that we now, more than ever, need to be mindful of our ethics, our professional integrity, and the impact we have on society. That brings us, of course, to APEGA.

OUR ASSOCIATION’S JOURNEY

In 1995, during our 75th anniversary, *The PEGG* newspaper traced the history of the Association in a series of articles. One of them, titled *Association Experienced Growth Spurt in the 1950s* and published in February 1995, looked at the 30th anniversary of what was then called the Association of Professional Engineers of Alberta (APEA). In the wake of the end of the Second World War, many ex-servicemen had enrolled in engineering when they returned from overseas. A big concern in 1950 was that a glut of engineers would soon be on the market.

This glut never materialized and as the decade progressed, Alberta actually faced a shortage of Professional Engineers. The provincial government of the day, meanwhile, decided to review several of the legislative acts enabling professionals to self-regulate, and there were government officials who thought that the government should take over professional licensure.

This didn't occur, but there were changes to our Act during this period, including the requirement that applicants be assessed by a Board of Examiners to determine whether they were qualified. True to form, our ever-logical predecessors already had this process in place, and it had been that way since the Association's inception in 1920.

Other changes to the Act included increasing the size of Council from eight to 12 and increasing the term a Councillor serves from two to three years. The Discipline Committee was now formalized in the Act, too.

Perhaps most importantly, the definition of engineering was expanded to include geology, even though the Act did fail to include a distinct title. This oversight has since been corrected, first with definitions of Professional Geologist and Professional Geophysicist, and more recently with the definition of Professional Geoscientist.

Other Association developments include actions by the 1957-58 Council, which hired Ivan Finlay, P.Eng., our first full-time Registrar. He continued in the role for two decades. Along with the Counselling and Education Committee, Council examined the matter of certification of engineering technologists and approved the publication of a booklet called *The Engineer and his Profession.*

THE WORDS WE USE

Our Association and society have evolved over the years. We have become, for example, more conscious of the language we use. When I first read the article in 1995 that referenced the booklet, *The Engineer and his Profession,* I do not recall thinking anything of the title. Recently, as I reread it, I was taken aback. My mind set immediately went to: "Way to exclude 50 per cent of the population!"

In the context of its day, it wasn't designed to exclude anyone — but that was the effect. The title is a good example of how we have learned to change our style of communication and be cautious of the words we use.

The words in the Act, the General Regulation, and our bylaws matter, too. As we move legislative changes forward, we need to be aware of how these changes will impact our Permit Holders and Members, particularly with the number of specializations of our professions continually increasing. We are no longer simply civil, electrical, mining, and mechanical engineers. Nor are our geoscientists simply geologists or mining engineers. Changes to our legislation will lay the foundation for the future of our professions — including areas of practice that we may not envision today.

We, as members of society at large and as Members of our Association, have learned and progressed through the last 98 years and we will continue to do so. Yet many of the issues we faced 50 or a 100 years ago remain the same today.

Society went from little houses to massive houses and now the trend is to go to tiny homes. We went from home-cooked meals to frozen and fast food and now the trend is back to "slow cooking." We went from electricity for every home and business to some of us shifting our lives off the grid completely.

Our professions have developed solutions to the problems inherent in all these changes, and our professions will continue to do so. As we meet societal demands, we need to think ahead to the future we are creating now.

I invite you to look to the past, to identify some of the landmark discoveries, innovations, and successes of our last 98 years, and to document some of the history of our professions. I would love to hear your stories, and I am sure many of your mentees and younger colleagues would as well.

I also invite you to look at the accomplishments of your colleagues and employers. Although the 2018 Summit Awards nominations are closed, you can always "shine a light on excellence in engineering or geoscience," as our promotional materials say, for future years. Help us celebrate the accomplishments of today — for the prosperity of tomorrow.

Questions or comments?
president@apega.ca

Where We Are, What We've Been, What We Will Be

BY **JAY NAGENDRAN,** *P.ENG., QEP, BCEE*
Registrar & Chief Executive Officer

My first five months as APEGA's Registrar & CEO represent a tiny piece of APEGA's 97 years. A much bigger piece of the timeline coincides with my APEGA membership; I have spent my entire professional career as a Professional Engineer in Alberta. Other regulatory and governmental positions take up much of my CV, and I've also served as a volunteer on the Practice Review Board. All of this means that I arrived on the APEGA staff scene with more than a passing awareness of the organization that gives full meaning to my designation.

Nothing, however, completely prepares you for a position like this one. Being your Registrar & CEO requires that I develop a thorough and nuanced understanding of APEGA, its people, its relationships, and its rich history. I'm not all the way there yet, but I'm making great progress!

During my crash course on APEGA, I have learned much about the excellent standing that the organization has earned over these many years of self-regulatory leadership. Self-regulation began for us because engineering in the early 1900s was not adequately serving the public interest. Engineers themselves recognized the problem and devised a solution, which they proposed to the provincial government. The government liked the plan, and the rest is history — your history, my history, APEGA's history.

Much of the context for my position, however, lies in accomplishments that are more recent.

A MOBILE PROFESSIONAL WORKFORCE

An important file over the last two decades has been professional mobility — the movement of Professional Engineers and Professional Geoscientists between jurisdictions, especially within North America. Improved mobility serves our Members and Permit Holders because it speeds up licensure. It serves the public interest by keeping the professional workforce fluid and responsive to economic change, and by dissuading engineers and geoscientists from practising without licences.

You probably haven't heard or read a lot about mobility recently. One reason is that the organization has had more pressing priorities, which this column and *The PEG* will continue to highlight in editions to come. The other reason is that our past emphasis on mobility has borne fruit. Important processes, relationships, and agreements are ingrained in the way we do business.

Several U.S. exams can now be written in Canada, improving the mobility of our Professional Engineers and Professional Geoscientists on American soil. Many U.S. state licensing boards have relaxed their licensing requirements for APEGA and other Canadian Professional Engineers, recognizing that our licensure systems may differ, but their outcomes are similar. At home, movement of Professional Engineers and Professional Geoscientists between Canadian jurisdictions is fast, simple, and almost seamless.

It is no exaggeration to say that improved mobility within and beyond Canada is largely the result of work done by one of my predecessors, Neil Windsor, P.Eng., FCAE, FEC, FGC (Hon.), P.E.(Hon.). The CEO from 1996 to 2012, Mr. Windsor left his mark on APEGA in many ways, and one of his legacies is most certainly improved mobility.

This is a good place to mention APEGA's leadership in analyzing and creating exams, especially the National Professional Practice Exam (NPPE). To become a Professional Engineer or Professional Geoscientist in Canada, you must demonstrate that you understand the laws, professionalism, and ethics that will guide you in your practice. For 11 engineering and geoscience

> **WE ARE A 21ST-CENTURY VERSION OF WHAT THE ENGINEERS WHO PROPOSED APEGA IN THE FIRST PLACE ENVISIONED. THEY WOULD BE PROUD OF WHAT WE HAVE BECOME — AND WHAT WE ARE BECOMING.**

self-regulatory organizations in Canada, that's done by writing the National Professional Practice Exam (NPPE). With the participation of other engineering and geoscience self-regulating organizations over almost two decades, APEGA continues to develop, maintain, administer, and manage the NPPE.

Since October 2015, the NPPE has been a computer-based exam, improving its security and efficiency, while adding the convenience of more writing dates and venues.

CREATING A CULTURE OF DIVERSITY

Why should diversity matter to APEGA? One reason is practicality: diversity is inevitable. We are already a diverse organization, particularly when you consider the many countries of origin of our Members. One of those Members from elsewhere is me. Although I've been in Alberta for most of my adult life, I was born in Sri Lanka. Diversity also matters because it leads to better decisions by broadening the perspectives of teams and boardrooms. On principle, that is something we must embrace.

Diversity relates to the professional development sessions and the mentoring program we've offered for years. We've strived to make them relevant for those from different cultures. We also help build science literacy in young people. We develop initiatives to support diversity in the professions and workplace.

In fact, it was APEGA that instigated a diversity initiative that's now supported by engineering self-regulating organizations across Canada. The slogan 30-by-30 — which we coined — refers, in its national iteration, to the proportion of newly licensed women in the engineering profession reaching 30 per cent by 2030. Engineers Canada has taken on the initiative and includes it in its resource guide *Reaching 30 by 30: Promising Practices for Increasing Diversity & Inclusion in Engineering.*

One of the anchors of that guide also has APEGA roots. Our Women in APEGA group created a document called *Managing Transitions: Before, During and After Leave.* This key tool in helping ensure that women retain their positions in the profession has become the national guideline on the subject. Many Permit Holders helped Women in APEGA in this project, sharing their best practices for the good of our professions and the workplace.

I am proud to say that gender equality is well established in the staffing and governance of APEGA. In fact, 60 per cent of the leaders on our Executive Team are women. Furthermore, to your credit, our professionals have elected a gender-balanced Council.

IMPROVING REGISTRATION

With diversity come challenges. APEGA must, for example, maintain high standards of licensure while accepting applications from potential Members from around the world.

Registration is particularly complicated for applicants from abroad. That's one of the reasons why we've been improving a range of processes in a multi-year renewal project. We are reducing input errors and other impediments to timely licensure, and at the same time making assessment and examination procedures more consistent.

Soon, we will launch the most recent success in this project. Competency-based assessment (CBA) is an improved system of reporting and examining experience. For engineering applicants for Professional Engineer and Licensee, CBA will be the future of

experience examination, and we are among the first engineering regulators in Canada to develop and adopt the system.

Here's something that's not widely known about our Registration Department. We also look after application and registration processing for potential Members of two sister associations to our north — Engineers Yukon, and the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists. Membership approval lies with the regulators themselves, but administering applications and membership is not economical for them, because of their small size and limited resources.

A LEADER IN MANDATORY PROFESSIONAL DEVELOPMENT

Which Canadian regulator of engineering and geoscience was the first to institute a mandatory program of continuing professional development (CPD)? Hint: this is not a trick question.

APEGA was, indeed, the first. In the interests of improving our protection of the health, safety, and welfare of the public, we launched the mandatory APEGA CPD program in 1997. Most of our regulatory peers in engineering and geoscience in Canada have followed suit, using the Alberta program as a model.

The principle is simple and the reasoning beyond reproach: to be an APEGA professional, whose ethical responsibility, by definition, it is to serve the public interest, you must stay current in a variety of different areas. To do that requires that you build a program of lifelong learning into your schedule, report it to APEGA, and produce detailed records when asked. We live in a time when knowledge grows unrelentingly, so CPD is even more important now than it was 20 years ago.

SETTING UP APEGA FOR ITS NEXT CENTURY

We have concluded the fifth round of consultations with Members and Permit Holders in the first major revamping of our legislation since 1981. There's still some heavy lifting to do on our part, but nothing symbolizes the next century of APEGA more than this thoughtful, thorough, and engaging review of the *Engineering and Geoscience Professions Act* and *General Regulation*, and APEGA's bylaws.

Since 2012, more than 6,000 individuals have taken part in the process, through surveys, face-to-face meetings, webinars, emails, and video conferences. A champions collaborative made up of Members representing APEGA branches ensured that the conversation reached every corner of the province.

We have now forwarded recommendations for changes to the provincial government, although there are outstanding issues that we continue to address.

THE PEOPLE

Ultimately, APEGA is about its people, and that will be as true in our next century as it is in this one. I'll start with the 135 or so staff members I lead. I cannot overstate how important their support is. From the wise counsel and leadership of my Executive Team to the ongoing, open, and honest dialogue other APEGA employees have so willing embarked upon, their commitment to improving our service to the public and Members is unwavering.

Members, staff, and the public rely on the excellent work of our volunteers, ranging from those of you who sit on Council and the various statutory boards, such as the Board of Examiners and the Discipline Committee, to those who help make science and math fun and interesting to Alberta young people. Your contribution is priceless, but if we were to put a price on it, it is worth millions of dollars. You ensure that the people who know our professions best are the ones making the decisions and recommendations necessary to regulate and represent our professions properly.

We are, in other words, a 21st-century version of what the engineers who proposed APEGA in the first place envisioned. They would be proud of what we have become — and what we are becoming.

The nature of a regulator is such that not all Members will be pleased with some of the actions APEGA needs to take. However, we will always do our best to do this professionally and with the full intent of protecting the public — a duty and necessity of self-regulation.

On a final personal note, I consider it a great privilege to serve our valued Members and staff. I'm excited about our shared future of continuing to work together for the public good.

Questions or comments?
Registrar_CEO@apega.ca

YOUR PATH TO COUNCIL

You

Familiarize yourself with nomination process and requirements

Make your decision

Prepare and complete your nomination

Nominating Committee

Gathers nominations

Interviews nominees

Reviews nominations

Endorses or Doesn't Endorse

APEGA Staff Members

Communicate with you and confirm your information

Distribute appropriate information about you, your nomination, and the election

Create ballot

Run election

APEGA

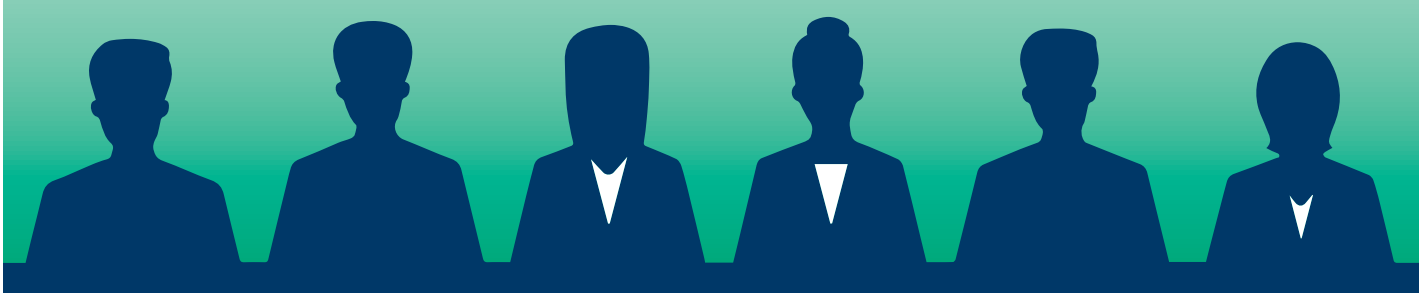
Ballot Counting Committee

Confirms results

Prepares report for delivery to Registrar & CEO, and President

President or Registrar & CEO

Calls you to discuss election results



Council Nominating Period Enters Final Weeks

Are you ready to take a major step in your life as an APEGA Professional Member? Are you willing to help shape the future of your professions and the self-regulation system that allows you to practise?

If so, there's still time to seek a seat on APEGA Council and join our governance team. Nominations are open for the 2018 APEGA Council election until Friday, September 29, at 4:30 p.m.

You must submit your nomination electronically, at apega.ca, through the Member Self-Service Centre. Thorough preparation gives potential candidates the best chance of being endorsed by the Nominating Committee and elected by their peers. You'll need to prepare a variety of materials (some mandatory and some not) and gather endorsements from 25 other Professional Members. Full information is available in the Member Self-Service Centre and in the summer 2017 edition of The PEG.

The APEGA Nominating Committee recommends candidates that represent a strong combination of attributes for Council. Through its own networks, the committee searches for potential candidates. But it also draws upon self-nominated candidates for its recommendations. Before the election, the committee arrives at its list of candidates — Members who are willing, suitable, and available for Council governance and succession.

The names of all qualified and properly nominated candidates will appear on the 2018 ballot, regardless of whether they receive the Nominating Committee's endorsement. APEGA runs background checks on all potential nominees. Also, members of the Nominating Committee will interview each nominee to review the information provided. Interview results become part of the committee's process in deciding who to endorse.

Every year, at least four Professional Members are elected to Council. Members also choose a President-Elect and a Vice-President each year. They join the President (elected the year before as President-Elect) and the immediate Past-President to lead a Council of 12 Professional Members and three public members. The Government of Alberta appoints public members, whose job it is to represent the public interest.

We encourage you to submit your nomination and run for election to help shape the future of APEGA. Online voting takes place **February 16** to **March 18, 2018**, and successful candidates will be announced at the AGM on **April 20, 2018**, in Edmonton.

MORE INFORMATION

Summer 2017 PEG

Website Running for Council Page

QUESTIONS?

elections@apega.ca

COUNCIL NOMINATIONS

Nominations for your 2018 Council close on

Friday, September 29, 2017

at

4:30 p.m.

Election Dates February 16 to March 18, 2018

- Nominations are accepted electronically through the Member Self-Service Centre at apega.ca.
- **You will have no further opportunity to self-nominate for the 2018 election.**
- Based on the governance and strategic needs of Council, the Nominating Committee will review all nominations for possible endorsement.
- The names of all qualifying nominees who choose to continue will appear on the ballot.
- Information about candidates will be distributed to Members in December.

MORE INFORMATION

Member Self-Service Centre

Summer Edition of The PEG

It Takes a Team

Permit Holders, Responsible Members, Professional Members, and APEGA — we're all partners in our service to the Alberta public

Engineering and geoscience companies in Alberta enter into partnerships with APEGA to secure a licence called a Permit to Practice. As a condition of its licence, each of these Permit Holders, as they're called, declares that all geoscience and engineering services it provides or contracts within Alberta are performed responsibly and professionally — in accordance with the Engineering and Geoscience Professions Act and other applicable legislation, APEGA practice standards, guidelines, and the ***Rules of Conduct*** in our *Code of Ethics*.

Members are part of this team dynamic when they practise. So are Responsible Members (RMs), who have special roles within their companies.

Here's how it works. Each Permit Holder is responsible for developing, implementing, and maintaining an effective **Professional Practice Management Plan** (PPMP). The PPMP defines policies, procedures, and systems that, when followed, ensure that the organization complies with legislation and implements existing, revised, and new practice standards and guidelines.

Ensuring adherence to the PPMP is the task of a company's RMs. Depending on the size of the Permit Holder, there could be one RM or there could be several.

An RM is a leader within the company. Through education and experience, RMs understand the professional obligations the Permit Holder and its employees and contractors must meet to ensure the safe, ethical, and sound practice of engineering or geoscience. RMs provide oversight of all professional work completed within, or on behalf of, the company, and ensure the work meets the quality management and quality assurance processes and procedures outlined in the PPMP.

APEGA supports Permit Holders by:

- helping them develop their PPMPs
- training RMs and professional Members
- developing practice standards, guidelines, and bulletins

On behalf of the Government of Alberta, APEGA conducts practice reviews to verify that Permit Holders are safeguarding the public interest by following legislation and adhering to professional practice standards and the *Rules of Conduct* in the *Code of Ethics.*

Your contribution as a Professional Member is to understand your PPMP and support your Responsible Member. All Professional Members have a responsibility to the professions and must do their part to make sure the products of their professional work meet the high standards developed through self-regulation. Your Responsible Members are also there to help you — they should be among your first contacts for professional practice advice and counsel.

Take the time to meet with your Responsible Members and to review your company's PPMP. Understanding the legislation and standards that apply to professional work and how your company adheres to them is a critical component in protecting the public interest and the integrity of your professions — and in being a successful APEGA professional.

QUESTIONS?

permits@apega.ca

How's Your CPD Doing?

You know that lifelong learning is important. Yet understanding the mechanics and meeting the requirements of APEGA's Continuing Professional Development program can seem challenging. These hints will help make the process simpler and more effective

Continuing competency is a pillar of the APEGA professions. To safeguard the health, safety, and welfare of the public, it's essential that professionals engage in lifelong learning. Knowledge and technology grow and change rapidly, as do the best practices in engineering and geoscience. Also, society's expectations have changed, particularly over the last decade — the public demands greater and greater accountability from its professionals.

To meet these demands, APEGA's Continuing Professional Development (CPD) program establishes an annual process and a minimum benchmark for your learning efforts. Meeting the minimum, however, may not be enough. It's up to you to assess your own needs and plan appropriately, ensuring that your own schedule of CPD maintains or increases your competence. The CPD program provides the flexibility you need to select activities that provide the greatest benefit to you and your practice.

In the Professional Practice Department, we hear from some Members who find it challenging to navigate our CPD requirements. After a conversation with a professional practice advisor, however, these same Members have found they can easily meet the CPD requirements.

So, what are our advisors telling Members?

SUBMITTING A DETAILED RECORD?

You've been asked to submit your detailed activity record to the Practice Review Board. What now? These tips will help you get through the review painlessly.

1. **Provide more than just your job title in the Professional Practice section.** Without details, such as a brief description of responsibilities, it is unclear to our reviewers what your job duties are and how your CPD activities relate to geoscience or engineering.

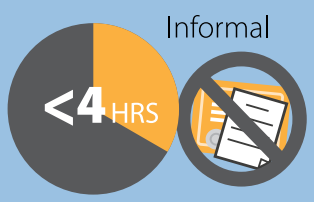
2. **Be sure to list the provider and specific date for a course or conference activity.** A reviewer may do a spot check; if the course or conference information cannot be verified, you may be required to provide additional proof.

3. **Don't rely on your work calendar as the sole source of your CPD information.** Members tend to keep their CPD activities listed on their work calendars. But what if yours is not available to you? Employers change, software changes, systems crash — a few of our Members have lost CPD information as a result. Reconstructing information is time consuming and getting detailed reports together becomes difficult.

   Our suggestion? Print a PDF of your calendar quarterly and keep it at home.

THE RIGHT CATEGORY FOR THE RIGHT ACTIVITY

1. There is a difference between **informal and formal** course categories. If the course is less than four hours and there is no formal testing, it's informal. If you are being tested and certificates are issued, it's formal.



2. **Participation in community groups is allowed** under the CPD program, but remember: it is limited to only 10 professional development hours (PDHs) per reporting period. Are you generating more hours than that and worrying that you'll lose them? You can carry over excess hours to the next two reporting periods.

3. Reading up on **new standards and codes** applicable to your field can be claimed as informal.

4. **Formal activity isn't all technical.** It can include non-technical courses such as media relations or time management training — if it's relevant to your practice or job description. If a completion certificate is offered, health and safety courses also qualify.

5. **Any activities that could be considered part of your regular employment fall under professional practice hours** — not other categories. For example:
   - if you are their supervisor, you cannot claim mentoring hours for time spent mentoring Members-in-Training. But you can claim mentoring hours if they do not report to you.
   - if you are required to make presentations to a council or board as part of your job, record the time as professional practice hours. If you are giving a presentation at a conference, record the time as presentation hours.

IT'S NOT THAT SCARY

Meeting your CPD requirements appears to be a daunting task, but it is not nearly that difficult. There are six categories of CPD and numerous training and self-study opportunities available. The difficulty isn't doing it, it is keeping track of it!

Stay current and update regularly — many Members find that the details are all there when they record them continuously throughout the year. It's much more difficult recording everything at membership renewal time.

STILL HAVING TROUBLE?

If you still find it difficult to meet your CPD requirements, you just may need help assessing and categorizing what you are doing.

Still stuck for hours? Consider applying through Volunteer with APEGA. We regularly need volunteers to assist in the self-regulation of our professions and share their knowledge with young people and new Members.

QUESTIONS?

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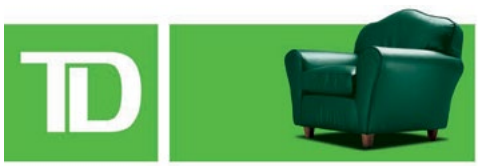


Movers&Shakers

TWO ORGANIZATIONS WITH INTERNATIONAL FOCUS HONOUR SCHULICH ENGINEER

Life in Canada has been good to **Janaka Ruwanpura, P.Eng., PhD**. The same can be said for many of the people taught and mentored over the years by Dr. Ruwanpura, Vice-Provost (International) at the University of Calgary. And then there's the impact of his many professional contributions.

Two awards that Dr. Ruwanpura received last year speak to all that and more. In November 2016, the Sri Lanka Foundation International in Los Angeles honoured Dr. Ruwanpura with a lifetime achievement award for his outstanding professional and personal accomplishments. Originally from Sri Lanka, Dr. Ruwanpura left his home country to study in the U.S., before coming to Canada.

Also in 2016, Dr. Ruwanpura received the Science Technology Engineering and Math Award at the 20th Immigrants of Distinction Awards, a program of Immigrant Services Calgary. The award citation notes that Dr. Ruwanpura wears two hats: he is a licensed Professional Engineer and a professional quantity surveyor. The author of numerous technical articles, Dr. Ruwanpura developed a "productivity toolbox" that has altered the culture of the Canadian construction industry, by encouraging a more productive and internationally competitive workforce through changes in workplace practices, says the citation.

But there are other hats, too. Along with his vice-provost position, he's a professor of civil engineering for the U of C's Schulich School of Engineering. Successfully supervising and mentoring more than 150 graduate students, most of them international students, Dr. Ruwanpura is a recognized leader in academia and his industry. In 2007 he was appointed the Canadian Research Chair in Project Management Systems. He was also Director of the Centre for Project Management Excellence until becoming a vice-provost in 2013.

DR. JANAKA RUWANPURA, P.ENG. . . .helping newcomers thrive.

He attributes much of his success to a supportive and diverse workplace environment. "The University of Calgary has helped me thrive academically and professionally and become who I am today," says Dr. Ruwanpura, who's been a professor there since 2001.

The award from Sri Lanka Foundation International recognizes Sri Lankans living abroad for their exceptional achievements. Recipients must have made noteworthy contributions to their fields and been honoured at an international level by professional or peer organizations.

"I am truly honoured to receive this award that recognizes my lifetime work and contributions," says Dr. Ruwanpura. "I am happy to work and contribute to Canada, and proud to keep Sri Lankan heritage alive in my heart."

EMPLOYERS EARN KUDOS FOR THEIR CULTURES OF ENVIRONMENTAL AWARENESS

The City of Calgary and the University of Alberta aren't engineering or geoscience firms in the traditional sense. But they do have APEGA Permits to Practice, and they do employ APEGA professionals playing key roles in their green initiatives.

Here's something else they share: they're among Canada's Greenest Employers, an honour bestowed annually by national publisher Mediacorp Canada Inc. Both public-sector organizations made the 70-employer list, which recognizes organizations for creating a culture of environmental awareness.

For the City of Calgary, this is the second year in a row on the list. The city supports several green community programs, like the Pathway and River Cleanup, Bike Calgary, and Carpool.ca. It also has formal policies to integrate environmental considerations into long-term decisions about growth, planning, infrastructure, transportation, and development.

The city's Sustainable Building Policy sets LEED requirements the city meets in new construction and major renovations of buildings staffed by city employees. (LEED, which stands for Leadership in Energy and Environmental Design, is a popular green certification program developed in the U.S. but used worldwide).

The city's water conservation strategy includes a 30-in-30 plan, which aims to reduce water consumption by 30 per cent over the next 30 years. And several city buildings use solar energy for their power — among them the Southland Leisure Centre, with 600 solar panels on its roof. Another key city initiative in 2017 is the city's continued work on flood mitigation and climate resilience.

In Edmonton, the University of Alberta is one of only seven employers — and the only Canadian post-secondary institution — to make the green list for nine years in a row. Green initiatives get students, faculty, and employees invested in environmental sustainability. This includes a waste-diversion program for students moving from campus, an annual Sustainability Awareness Week, and the on-campus Prairie Urban Farm.

The university received kudos from Mediacorp for its recycling and waste-reduction initiatives — and for giving engineering students a real-world learning opportunity to audit the school's waste management system and suggest new approaches. Other highlights that earned the U of A top points are the green roofs (roofs with vegetation) of the Edmonton Clinic Health Academy, the university's investment in solar energy on several newer buildings, and a rainwater collection system on the roof of Triffo Hall.

Sustainability is not new for the university, going back long before climate change was widely in the news. The school's Energy Management Program, part of its Campus Sustainability Initiative, has been in place since 1975. The program has saved the university an estimated $353 million in utility costs and has prevented over 2.5 million tonnes of greenhouse gas from being emitted.

Many private companies also made the Mediacorp green list. Watch for information about them in *The PEG* winter edition.

URBAN HARVEST
The University of Alberta's Prairie Urban Farm has helped the school become one of only seven employers in Canada to make Mediacorp's green list nine times in a row.
-photo courtesy the University of Alberta

ALBERTA'S LOSS IS SASKATCHEWAN'S GAIN: FORMER APEGA COUNCILLOR AND PAST SUMMIT RECIPENT ACCEPTS ENGINEERING DEAN APPOINTMENT

It's a trifecta for the University of Saskatchewan. In appointing **Suzanne Kresta, P.Eng., FEC, PhD**, as the new Dean of the College of Engineering, the university has ticked at least three critical boxes. "In Dr. Kresta, we have found an incredible combination of teacher, researcher, and administrator," says Michael Atkinson, Interim Provost and Vice-President Academic for the Saskatoon university. "Dr. Kresta was the perfect fit to continue to advance the academic and research agendas of one of our most historic colleges."

A chemical engineer, Dr. Kresta earned a bachelor of science degree at the University of New Brunswick, a master of science at the University of Leeds in the U.K., and a PhD from McMaster University in Ontario. She joined the U of A as an assistant professor in 1992, becoming the school's second female engineering professor. She's currently a professor in the Department of Chemical and Materials Engineering in the Faculty of Engineering and the Associate Dean in the Faculty of Graduate Studies and Research. Her Saskatchewan position, a five-year term, starts January 1, 2018.

A former APEGA Councillor, her accomplishments have been recognized through many awards and accolades, including two APEGA Summit Awards: the 1998 Early Accomplishment Award and the 2013 Excellence in Education Award. In 2014 she received the Engineers Canada Medal for Distinction in Engineering Education. She's an accomplished researcher in turbulent mixing, and has worked in sectors ranging from drinking water to cosmetics to hydrometallurgy to oil sands extraction.

Colleagues and students describe her has as a courageous, insightful, and creative educator. For her part, Dr. Kresta considers teaching a privilege. Her courses, she says, revolve around transformative change. "Making that change happen requires me to meet the students where they live, to understand their fears, and to help them navigate the rapids of personal and intellectual growth."

A TALENT IN TURBULENCE
Dr. Suzanne Kresta, P.Eng., FEC, knows all about turbulent mixing and transformative change. Now, this former APEGA Councillor's leadership and teaching skills, along with her technical know-how, are Saskatoon-bound — as of January 1, 2018, a five-year term as the Dean of the College of Engineering at the University of Saskatchewan begins.

THE MCDOUGALL EFFECT: APEGA HONORARY LIFE MEMBER AND PAST-PRESIDENT EARNS AWARD FOR SUCCESSFUL SENIORS

The McDougall name is a significant one in the development of Edmonton, and that noteworthiness has continued in the life and accomplishments of **John McDougall, P.Eng., FEC, FGC (Hon.)**. The great-grandson of Edmonton pioneer and past mayor John A. McDougall, he has marshalled his own career and service across 50 years, notching a long list of illustrious achievements along the way. Among them was his election as APEGA's President in 1980.

He was a young man then, but it is his accomplishments after the age of 60 that have earned him accolades from the Seniors Association of Greater Edmonton (Sage). In May, Mr. McDougall received the 2017 Science & Technology Sage Award, one of 10 awards Sage presented this year to seniors in Greater Edmonton to recognize their outstanding community and business contributions.

Mr. McDougall served as President and CEO of the Alberta Research Council (now Alberta Innovates — Technology Futures) from 1997 to 2009, where he oversaw growth in applied research and innovation activities. In 2010, by now in his mid-60s, Mr. McDougall became President of the National Research Council of Canada, the federal government's largest research institution. For more than six years, he led its transformation into a mission-oriented research and technology organization.

Of the more than two dozen awards, honorary titles, and other accolades earned by Mr. McDougall over his career, more than a third were bestowed after he turned 60.

Mr. McDougall graduated from the University of Alberta with a bachelor's degree in civil engineering. He spent the first 10 years of his career as a petroleum engineer for Imperial Oil, then in 1969 joined McDougall & Secord Limited, the family business founded by his great grandfather. Over the years, he's served as director, vice-president, and president of the company — Edmonton's oldest, privately owned business in real estate, investment, development, and merchant banking.

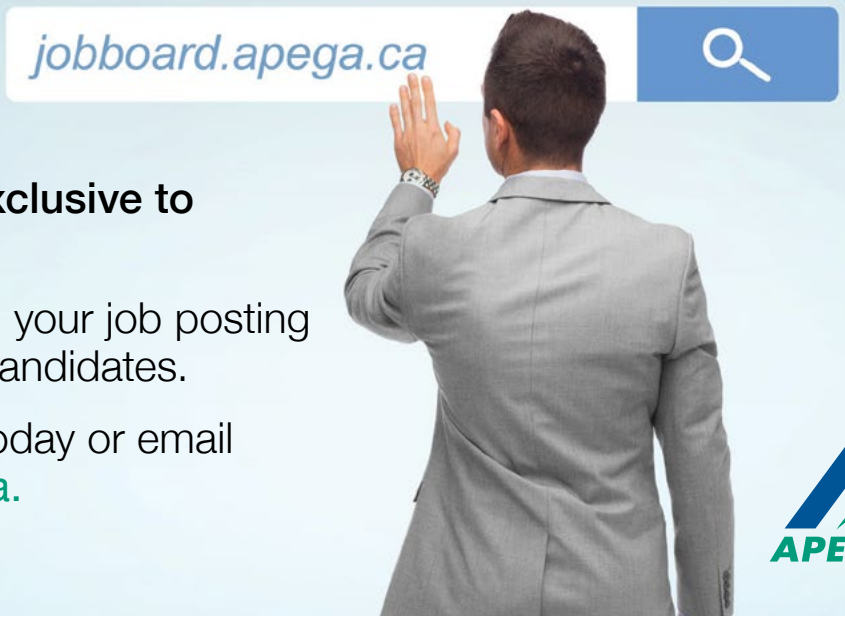
AN EDMONTON AND PROFESSIONAL SAGE
The career of John McDougall, P.Eng., has touched on many things — business, research, academia, self-regulation, and, of course, Edmonton's rich history. Here, Mr. McDougall accepts his 2017 Science & Technology Sage Award for exemplar contributions as a senior.

-photo courtesy Seniors Association of Greater Edmonton

In 1975, Mr. McDougall began building another company, starting the consulting firm Dalcor Innoventures. He served as the managing partner and president of the firm for 35 years. At the University of Alberta, he was an important bridge to business, teaching there and serving, from 1991 to 1977, as the first Poole Chair in Management for Engineers. He was the founding chairman of Innoventures Canada, a not-for-profit that commercializes research innovations.

Mr. McDougall is always quick to share the credit. "My ability to get things done is dependent on others. I see my role as showing people possibilities and exciting them about making those ideas real," he once said.

Looking for Qualified Engineers or Geoscientists?



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HOOKED ON FOSSILS: GEOSCIENTIST HONOURED FOR OUTSTANDING CONTRIBUTIONS TO HER PROFESSION

It all started for **Frances Hein, P.Geol., PhD**, with a childhood collection of rocks and fossils. "I remember seeing my first igneous rocks along Lake Superior when our family went on vacation to Canada, and I collected rocks every day," recalls Dr. Hein, whose contributions to the development and practice of Professional Geoscience have earned her the 2017 Canadian Professional Geoscientist Award from Geoscientists Canada.

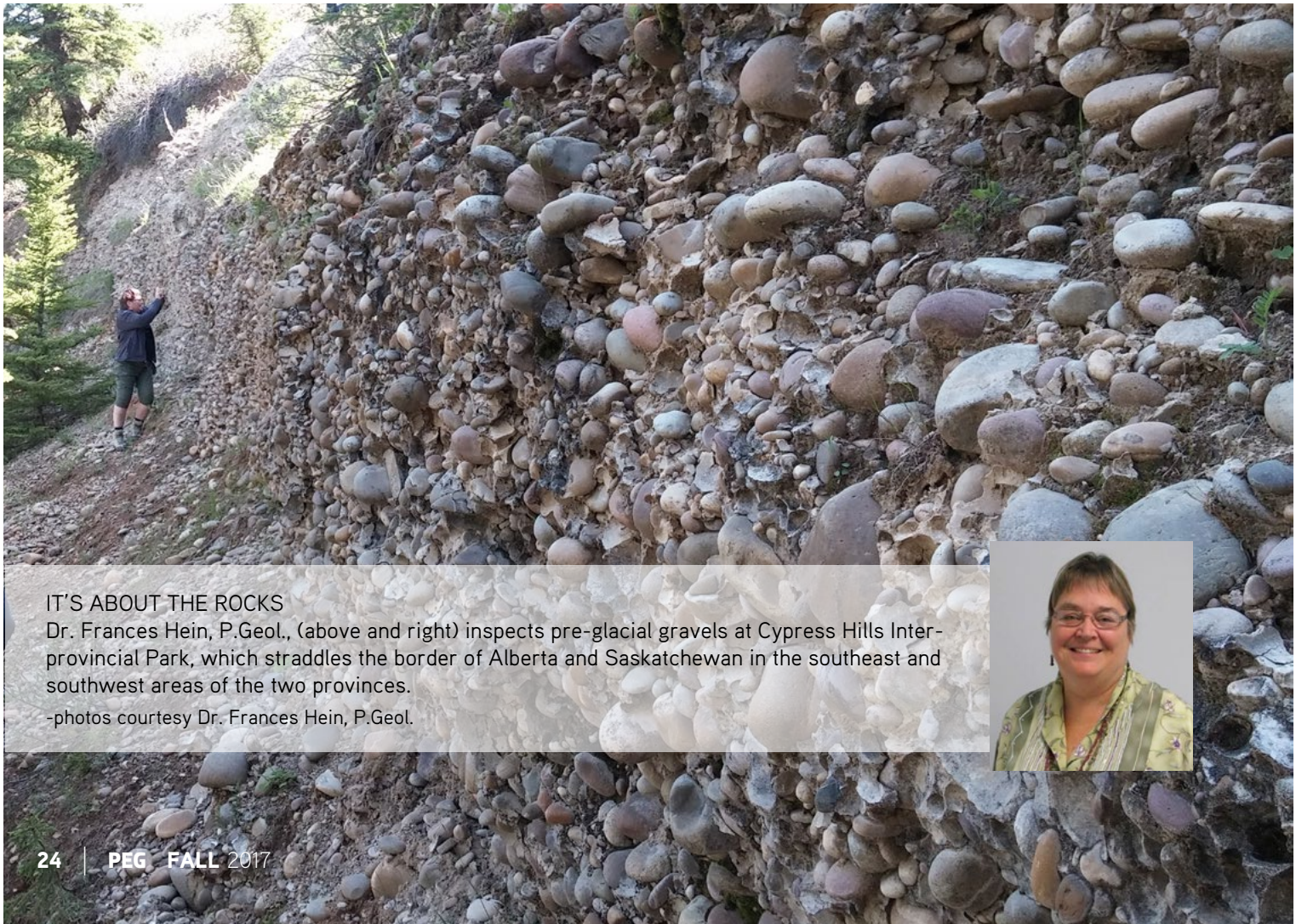
During Dr. Hein's childhood in Joliet, Illinois, she hunted for fossils near abandoned coal mines, while her dad fished nearby. The mines had been turned into recreation areas.

"My first year of university clinched it, when I took a course on geology that included plate tectonics. That was a new theory at the time, taught by an oceanographer in the Earth science department," Dr. Hein says. "I was hooked."

Through her career, she has been a teacher, a mentor, an author, an expert advisor on oil sands and heavy oil deposits, and much more. The 2017 Canadian Professional Geoscientist Award, announced in June, recognizes Dr. Hein's long-time career applying geological knowledge in the public interest, her work as a leading advocate for sound geology in oil and gas exploration and development, and her role modelling and mentoring.

After completing her bachelor's degree in geology from the University of Illinois in Chicago in 1972, she headed to Canada to study sedimentology at McMaster University in Hamilton, earning an M.Sc. and a PhD. In grad school, she met fellow rock hound Dr. Doug Cant, her future husband.

The first two decades of Dr. Hein's career were in academia, teaching at Dalhousie University in Halifax,



IT'S ABOUT THE ROCKS
Dr. Frances Hein, P.Geol., (above and right) inspects pre-glacial gravels at Cypress Hills Interprovincial Park, which straddles the border of Alberta and Saskatchewan in the southeast and southwest areas of the two provinces.
-photos courtesy Dr. Frances Hein, P.Geol.

the University of Alberta, and the University of Calgary. She started a geological consulting firm and later was hired by the Energy Resources Conservation Board (now the Alberta Energy Regulator). For the past 20 years she's worked at ARC's Alberta Geological Survey, where she's currently a senior geology advisor. She's also the author or co-author of more than 100 scientific articles, maps, and books.

Over the years, Dr. Hein has introduced hundreds of elementary students and Girl Guides to the world of geology. She helped pilot a Geological Survey of Canada training program on rocks and minerals for elementary school teachers. Dr. Hein has also mentored dozens of young geology professionals, and as a university professor, she's supervised more than 30 graduate and post-doctoral students.

Dr. Hein and her husband raised four daughters — although none of them went into geology. "The closest is a cultural anthropologist. We figure they got too much geology when they were kids," she jokes.

FOUR STUDENTS GIVE THE OLD SUMMER RECAP — AFTER RECEIVING IVAN FINLAY LEADERSHIP AWARDS FROM THE APEGA FOUNDATION AND APEGA'S PAST-PRESIDENTS

Writing a master's thesis. Doing field work in Nunavut. Searching for gold. Tackling a seismic research project.

That covers how four recipients of APEGA's Ivan Finlay Leadership Award spent the summer — each with an extra $500 in hand. The award, from the APEGA Foundation and APEGA's past-presidents, recognizes students who demonstrate exceptional leadership qualities within the engineering and geoscience university communities of Alberta. The award is named after the late Ivan Finlay, P.Eng., the Association's first full-time Registrar.

Kurtis Broda, E.I.T., expects to finish his thesis-based master's in mechanical engineering at the University of Alberta Faculty of Engineering this September. He's researching a new method to measure the composition of nanoscale pollution particles released during fossil fuel combustion. The tiny particles pose an environmental hazard, but their size makes them hard to measure. Analyzing their composition is key to understanding and mitigating their adverse effects.

Mr. Broda recently spent almost half a year in Cambridge, U.K. On a $15,000 scholarship, he was there conducting research for a manufacturer to implement new measuring software. The technology is now being used by the company's customers.

Outside school, Mr. Broda volunteers as President of the Alberta Whitewater Association. He spends his free time international bike touring, backcountry skiing, and taking part in triathlons.

The other three recipients are all APEGA student members registered under the APEGA Student Advantage Program (ASAP).

Skye Lybbert completed his geology degree this spring in the U of A's Faculty of Science. He graduated with honours and received the Dean's Silver Medal in

LEADERS OF TODAY, LEADERS OF TOMORROW
APEGA Registrar & CEO Jay Nagendran, P.Eng., QEP, BCEE, left, along with APEGA COO Heidi Yang, P.Eng., FEC, FGC (Hon.), right, present Ivan Finlay Award cheques to (centre, from left) Jessica Zerb, Skye Lybbert, Kurtis Broda, E.I.T., and Daniel Baker.

Movers & Shakers

Science. In January, he served as President of the Western Inter-University Geoscience Conference (WIUGC) — while tackling a full course load and completing an undergraduate thesis.

This summer, he worked with APEX Geosciences Ltd. in Nunavut, doing field work for the company. He'll return to the U of A to embark on a master's in geology and geostatistics. Outside school, he enjoys hiking, backpacking, and skiing.

Says Mr. Lybbert: "My curiosities have fueled my desire to learn and develop my understanding of what lies beneath our feet."

Jessica Zerb will graduate from the U of A Faculty of Science this April with a degree in geophysics. "My passion for hiking, backpacking, and the outdoors in general motivated me to pursue geoscience as a career," she explains.

While geophysics is heavily geared towards computer modelling and coding, she's had the opportunity to experience other sides of the discipline, too. In the summer of 2016, she worked in the U of A's paleomagnetic and petromagnetic lab on plate tectonic reconstruction of the South China block during the Paleozoic Era.

After completing summer research, she participated in a WIUGC poster presentation, winning the award for best undergraduate poster. Over the summer, she experienced a different branch of geophysics, working on a team researching signal processing for seismic data.

Also studying at the U of A, **Daniel Baker** will graduate from the Honors in Geology program next April. He has completed his undergraduate thesis on sedimentology and ichnology (which looks at the behaviour of organisms in the geologic record) in the Stephen Formation.

Mr. Baker has been active in the Ichnology Research Group at the U of A. He has helped map a portion of the Beaulieu River Greenstone Belt for the Northwest Territories Geological Survey, and he was a host for WIUGC. He also attended the 2017 Student-Industry Mineral Exploration Workshop.

To further develop what he calls his "geo-brain," Mr. Baker spent the summer as a boulder mapper and glacial prospector in Nunavut, searching for economically viable gold deposits. "My experience within soft rock and hard rock has fired my passion for the geological profession. I cannot wait for future opportunities and challenges to increase my knowledge and adaptive skillsets."

NEWLY MINTED FELLOWS: FIVE APEGA MEMBERS JOIN THE FELLOWSHIP RANKS OF THE CANADIAN ACADEMY OF ENGINEERING

Five APEGA Members — all engineering professors and leaders in their fields — were among 50 new Fellows inducted into the Canadian Academy of Engineering (CAE) in June. Fellowships are awarded for distinguished achievements and career-long service to the engineering profession.

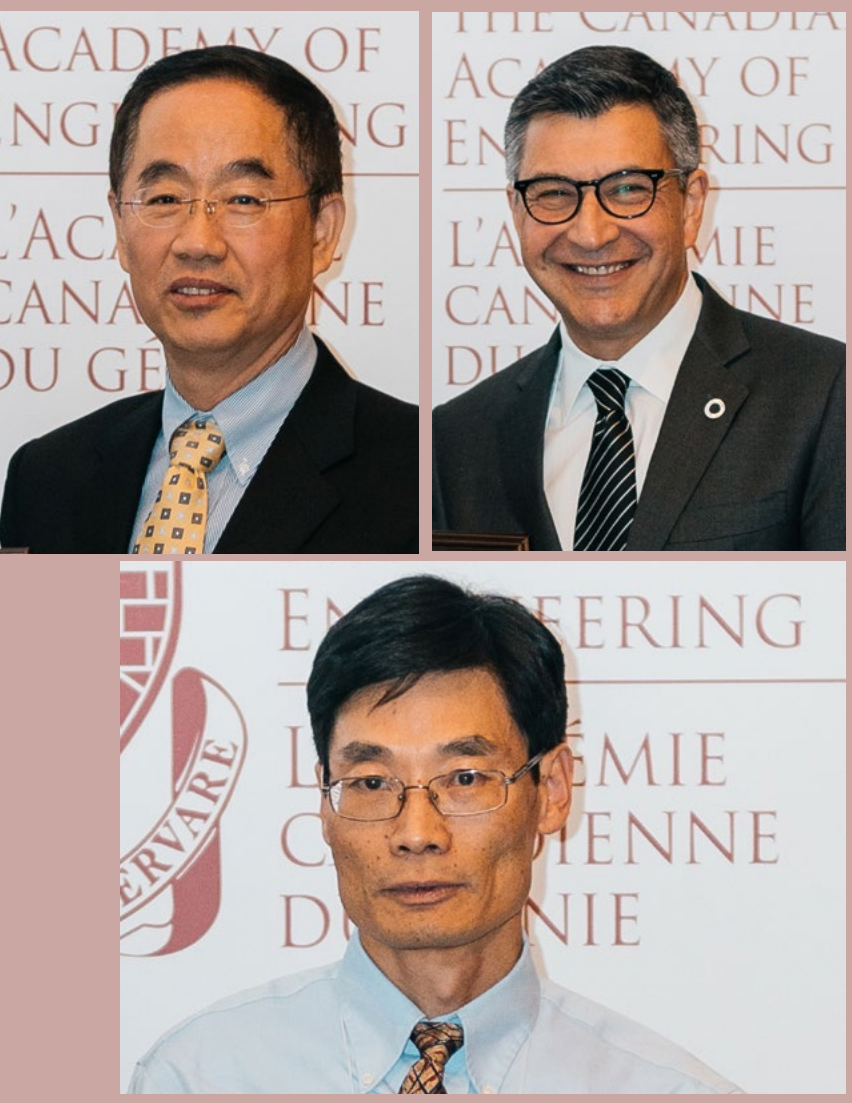
William (Bill) Rosehart, P.Eng., PhD, Dean of the Schulich School of Engineering at the University of Calgary, is deeply committed to teaching and learning. He's received two Students' Union Teaching Excellence Awards and has twice been named Professor of the Year in the Department of Electrical and Computer Engineering. He's a founding member of the Canadian Engineering Association, and he recently led the creation of an energy engineering program that allows technology grads to complete an engineering degree in only two additional years. A volunteer with APEGA on the Board of Examiners, Dr. Rosehart received the APEGA Early Accomplishment Summit Award in 2006.

NEW FELLOW
Dr. Bill Rosehart, P.Eng., University of Calgary Schulich School of Engineering, right, receives his fellowship from Canadian Academy of Engineering President Douglas Ruth (P.Eng.-MB)

STORY CONTINUES ON NEXT PAGE ››

Movers & Shakers

Qingxia Liu, P.Eng., PhD, of the University of Alberta Faculty of Engineering, is the U of A's Glencore Chair in Mining and Mineral Processing Engineering, and a leading authority on interfacial science and water chemistry in minerals processing and oil sands extraction. His research has led to the development of technologies that address the economic and environmental challenges faced by Canadian industry. With clean energy an increasing global concern, Dr. Liu's teaching, research, and technology innovations support sustainable development in Alberta and across Canada.



MORE NEW FELLOWS
Other inductees into the Canadian Academy of Engineering fellowship are, from the University of Alberta Faculty of Engineering (clockwise from top left): Dr. Qingxia Liu, P.Eng.; Dr. Joao Soares, P.Eng.; Dr. David Zhu, P.Eng. ; and Dr. Chinthananda Tellambura, P.Eng. (photo unavailable)

Joao Soares, P.Eng., PhD, is the Canada Research Chair in Advanced Polymer Reaction Engineering in the U of A Faculty of Engineering. He is also a Campus Alberta Innovates Chair in Interfacial Polymer Engineering for Oil Sands Processing. Dr. Soares has had an impressive impact consulting with major international polyolefin manufacturing companies. His industrial short course, Polyolefin Reaction Engineering, is currently in its 10th year. Dr. Soares promotes chemical engineering knowledge as the Editor-in-Chief for the *Canadian Journal of Chemical Engineering*. He's a Fellow of the Chemical Institute of Canada, and his research has been honoured by Dow Chemicals, Alberta Innovates, and the Province of Ontario.

Chinthananda Tellambura, P.Eng., PhD, is a world-class researcher in wireless communication systems. At the University of Alberta's Faculty of Engineering, Dr. Tellambura has made fundamental contributions in design, modelling, and analysis of 3G, 4G, and emerging wireless standards. Nationally, he's served on many science and engineering panels. He's had an international impact by editing prestigious journals on wireless technology. Dr. Tellambura has trained more than 50 engineers who now work in the global wireless industry and academia. His research contributions have been recognized with an Institute of Electrical and Electronics Engineers fellowship and with Killam and McCalla professorships at the U of A.

David Zhu, P.Eng., PhD, is an expert in urban drainage and sustainable hydropower. A global leader in the modernization of urban sewer design and operations addressing the challenges of climate change and environmental regulations, his research has enhanced Canada's reputation in sustainable hydropower and fishway designs. Dr. Zhu, of the U of A Faculty of Engineering, actively promotes collaborations between Canada and China in sustainable hydropower development. Among his awards are an Alexander von Humboldt Foundation Research Fellowship and the Canadian Society for Civil Engineering Donald R. Stanley Award.

The Buzz

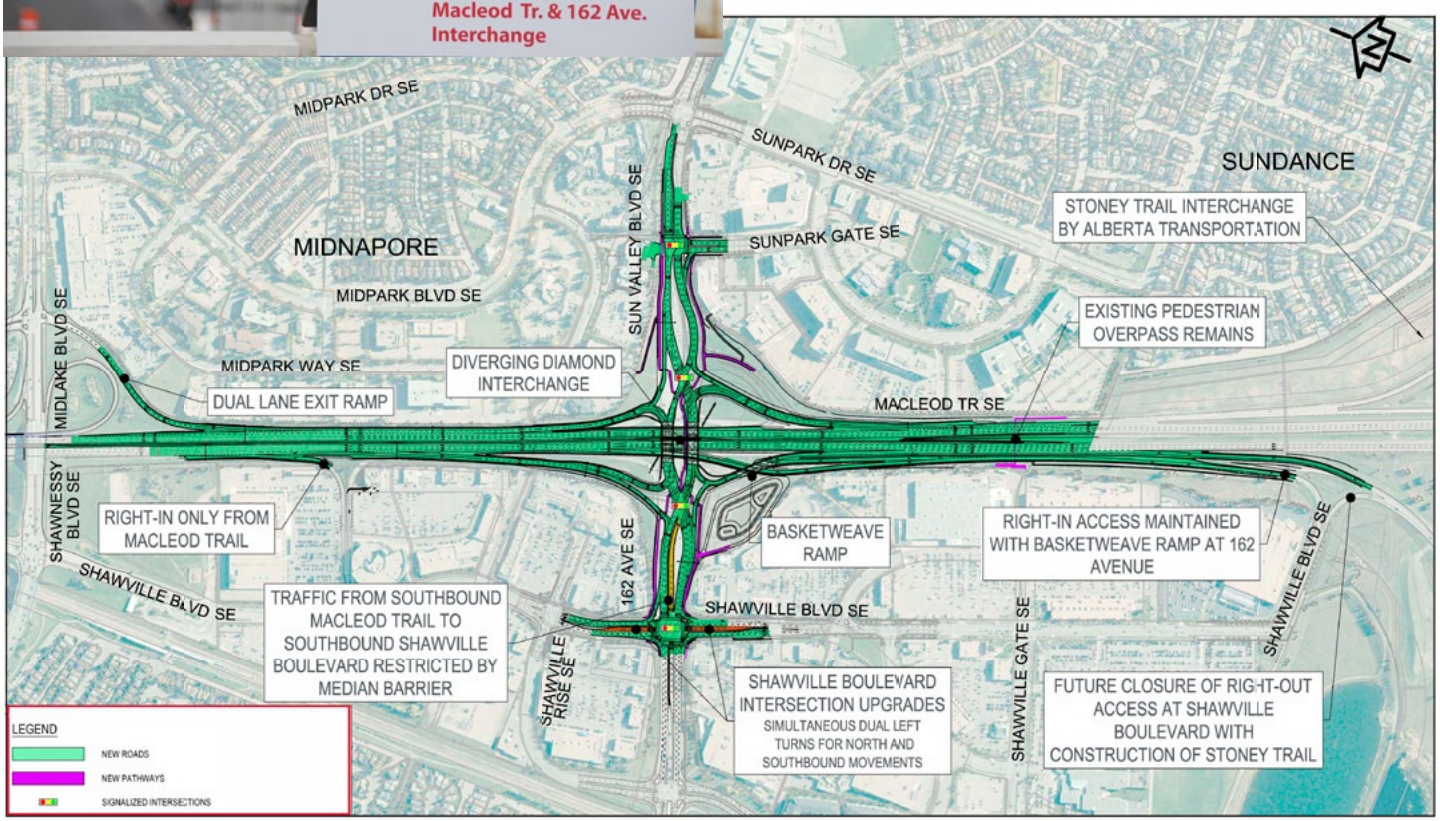
DRIVE THIS WAY — INNOVATIVE CALGARY DIAMOND CALLS FOR A MENTAL RESET

A diverging diamond interchange — the first of its kind in Canada — has partially opened at Calgary's Macleod Trail and 162nd Avenue. Officials say the design of the $78-million project means that traffic flow is safer and more effective than it would be if the interchange used a more traditional design.

But the interchange is going to require some getting used to on the part of drivers. Traffic switches to the opposite or left side of the overpass, meaning that, for a time, drivers are on what they would normally consider the wrong side of the road.

Drivers using the diverging diamond's overpass to turn left onto Macleod or continue east or west will crisscross at intersections controlled by traffic lights. There's no left turning, in other words, in front of oncoming traffic. It's estimated that 100,000 vehicles per day will put the diverging diamond to test.

Prime consultant on the project is ISL Engineering and Land Services Ltd., an APEGA Permit Holder.



GIVING DIRECTIONS?
Calgary Mayor Naheed Nenshi (photo left) speaks at the opening of the new diverging diamond interchange (diagram below).
-photo and diagram courtesy City of Calgary

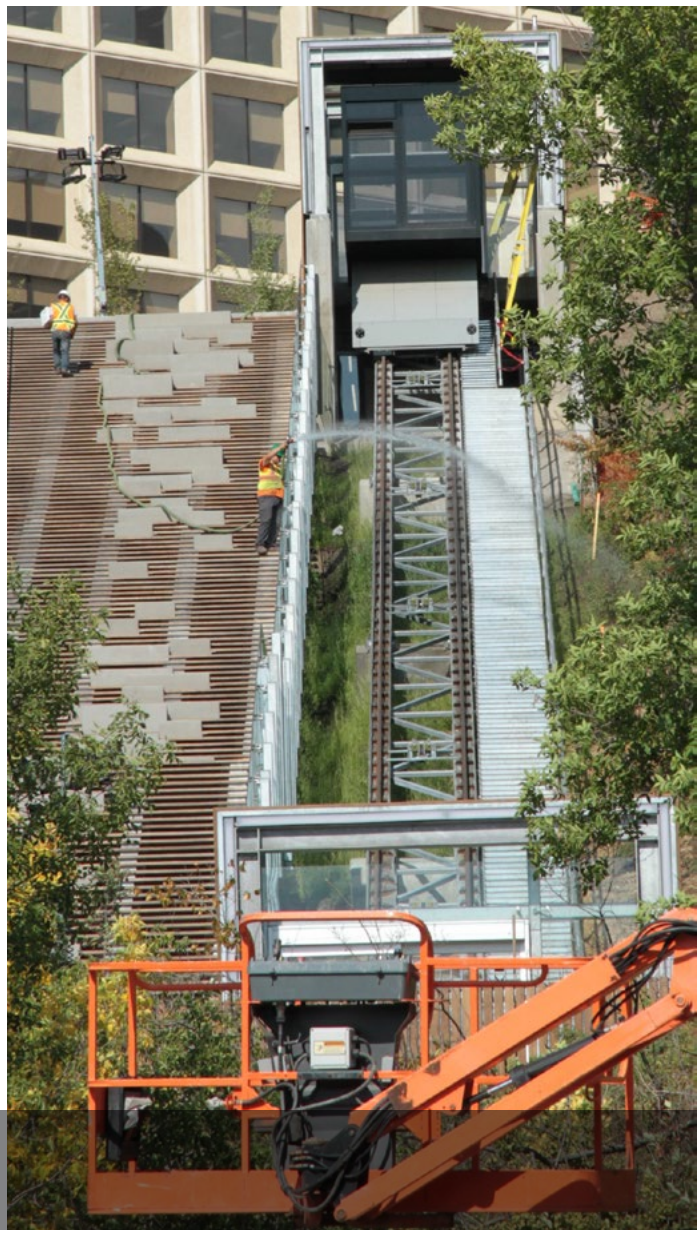
EDMONTON GETS A FUNICULAR — AGAIN

Many a great city has an outdoor funicular, and by that measure, Edmonton is about to join the ranks of Quebec City, Kyoto, Paris, Zurich, Budapest, and many others. This fall, Edmonton's river valley funicular — a cable-propelled system that moves a tram along a steep track — will carry its first passengers up and down the embankment behind the Fairmont Hotel Macdonald. Connecting the city's downtown to the trail system near the Low Level Bridge, the $24-million Mechanized River Valley Access (MRVA) is on time and within budget.

The full project is a funicular and more. MRVA comprises a glass-enclosed funicular for up to 10 pedestrians and cyclists, a pedestrian bridge above Grierson Hill Road, a staircase, an elevator, and several seating areas and lookouts. The project was designed to provide river valley access for people unable to use the old wooden staircase.

This is not Edmonton's first funicular. The short-lived Edmonton Incline Railway operated from 1908 to 1911, moving people and goods between Ross Flats and downtown. And the nearby elevator in the Shaw Convention Centre downtown is a type of funicular, too.

APEGA Members got a special sneak peek of the MRVA, during two tours put on by the Edmonton Branch in late August and early September. Contractor for the project is Graham Construction and prime consultant is DIALOG, both APEGA Permit Holders.



FUNICULAR TIMES AHEAD
Edmonton's Mechanized River Valley Access is nearly ready for its first customers.

PROVINCE ANNOUNCES WATER PROJECT FUNDING FOR 2017 AND ONWARD

Clean drinking water and proper wastewater treatment in rural Alberta are receiving support. The Government of Alberta is providing $131 million in 2017 funding for critical water projects through two grant programs — Water for Life (W4L) and the Alberta Municipal Water/Wastewater Partnership (AMWWP).

The funding will support 29 projects. Over four years, the total provincial contribution will reach $474 million.

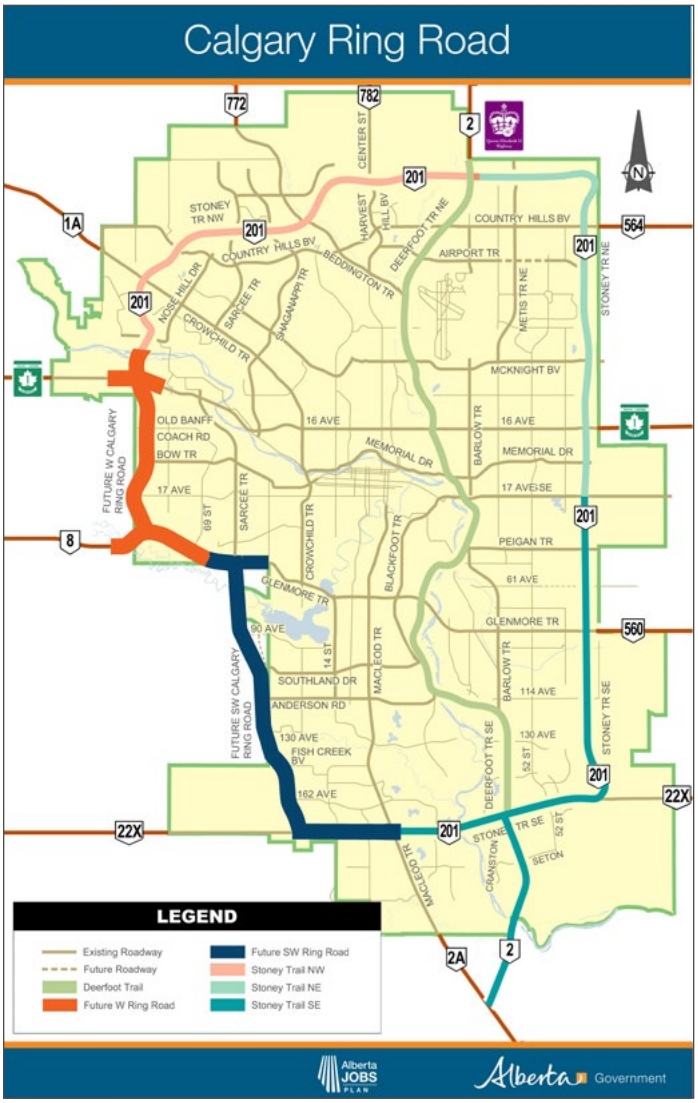
The grants will help improve water supply and wastewater treatment in counties, hamlets, towns, villages, and regions across the province. Examples include about $28 million to the County of Northern Lights for a Peace River regional waterline to supply Dixonville; almost $5.5 million to the Town of Fairview for aeration systems in reservoirs; and, in the southern end of the province near Lethbridge, about $2.2 million to the Village of Nobleford for a wastewater lagoon upgrade.

ANOTHER PIECE OF THE RING BEGINS TAKING SHAPE IN CALGARY

Construction is underway on the Southwest Calgary Ring Road (SWCRR), running between Highway 8 (near Elbow Springs Golf Course) and Macleod Trail SE. The $2.2-billion project will include 31 kilometres of six- and eight-lane divided highways, 14 interchanges, one road flyover, one railway crossing, 47 bridges, one culvert set, one tunnel, and three river crossings.

Expected to open to traffic in 2021, SWCRR is being designed and constructed by a joint venture partnership that includes two APEGA Permit Holders, Graham Construction and Ledcor. A 10-kilometre stretch of the road between Fish Creek and Glenmore Trail will be named Tsuut'ina Trail, recognizing that it's on former Tsuut'ina Nation land.

The Government of Canada will contribute more than $350 million to the project, with the Province of Alberta adding the balance. The project represents the beginning of one of the two remaining sections in the Calgary Ring Road project.



COMPLETING THE RING
This map shows what's done and what's left to come on the Calgary Ring Road. -map courtesy Alberta Transportation

MEDICINE HAT IS BECOMING A HOTEL HOT SPOT

Canalta Hotels has enough of a presence in Medicine Hat that it owns naming rights for the arena complex — officially named Canalta Centre. So far there's no hotel or motor inn, however, that bears the name of the Drumheller chain.

Interestingly, that's not going to change with Canalta's construction of a six-storey hotel and retail complex in Medicine Hat's south end, now underway. The project, slated for completion at the end of 2018, will include a 120-room hotel, two standalone restaurants, a four-bay commercial strip, and a retail plaza. The brand for the hotel will be Hilton, the company says, complementing a Hampton Inn & Suites by Hilton that it already manages in the city.

It sounds like more accommodations for travellers lie ahead for Medicine Hat. According to the *Medicine Hat News*, two other hotel developers are planning 100-room-plus hotels.

PIPELINE CONSTRUCTION BEGINS ON HARDISTY-SUPERIOR LINE 3

Enbridge, an APEGA Permit Holder, has broken ground on its multi-billion-dollar Line 3, which involves replacing an aging, 1,660-kilometre pipeline that runs from Hardisty in southwestern Alberta to the state of Wisconsin, via Saskatchewan and Manitoba. The first phase of the project — the 405-km stretch of pipeline running across Alberta and Saskatchewan — is expected to continue until the spring or summer of 2018 and employ as many as 1,600 workers. The pipeline is expected to come online by the second half of 2019 and transport 375,000 barrels per day of Canadian crude oil to Superior, Wis.

The company estimates the cost of the Canadian section at $5.3 billion and the American section at and US $2.9 billion.

CALGARY GETS PROVINCIAL GREEN FOR THE GREEN LINE, AS CITY GEARS UP FOR LAUNCH OF ITS LRT MEGAPROJECT

The Government of Alberta has promised a large cash infusion for Calgary's ambitious Green Line LRT project. Likely decades in the making, the 46-km line — the largest public infrastructure project in the city's history — will connect the future neighbourhood of Keystone Hills in the north to Seton in the city's south, and include 28 stations.

This summer, the province announced it would cover a third of the costs of the first stage of construction, or up to $1.53 billion over eight years. Stage 1, with construction starting in 2020, will cost an estimated $4.65 billion and include 20 kilometres of track, 14 stations, eight bridges, and three tunnels. The stage is expected to create 12,000 direct jobs and more than 8,000 support jobs, for such services as engineering, planning, and administration.

Provincial funding will come from the Climate Leadership Plan, including the carbon levy. The Government of Alberta estimates that Stage 1 will reduce carbon dioxide emissions by 30,000 tonnes a year, because it will convince more Calgary drivers to use their cars less often.

ALBERTA CONSUMERS LOOSEN PURSE STRINGS BUT THEIR DEBT IS HIGH

Does this mean the recession is really is over? Pundits and experts are starting to say so, and some of the statistics support their analysis.

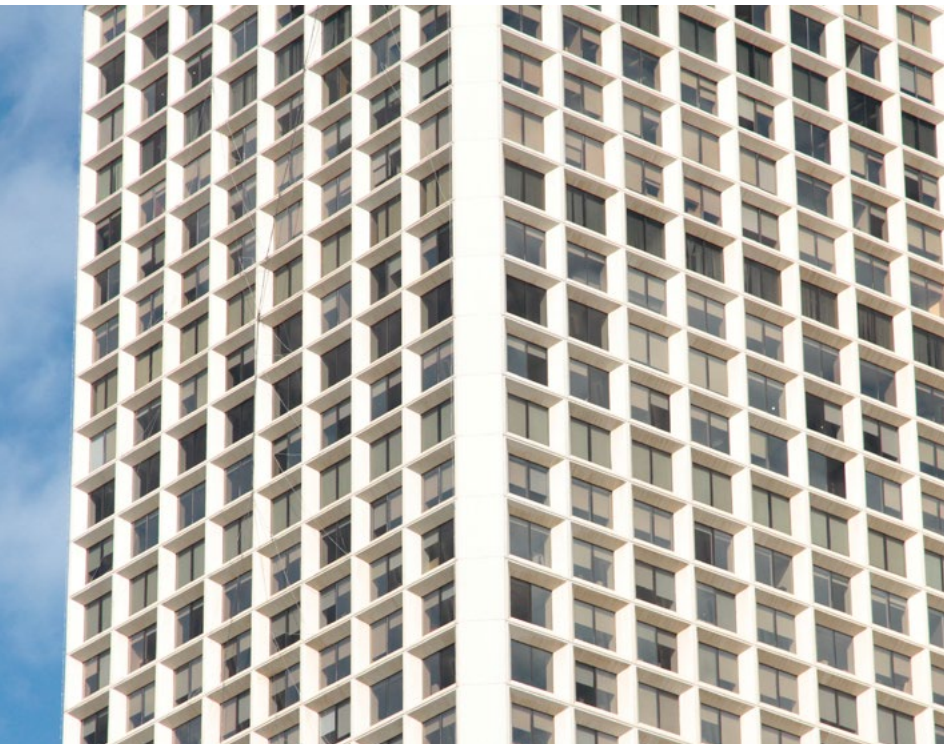
Albertans are beginning to spend more money on retail purchases, data from Statistics Canada show. June retail sales hit a record $6.9 billion in the province, exceeding the previous high of $6.7 billion in October 2014 (shortly before oil prices dropped).

However, Albertans also remained, at least on average, firmly in debt. In the second quarter of 2017, consumers in the province owed an average of $27,800 in non-mortgage debt, a report by the credit reporting agency TransUnion Canada shows. That's the highest among the five most populous provinces.

Meanwhile, Statistics Canada data show that the unemployment rate in the Wood Buffalo-Cold Lake region of the province dropped to 6.7 per cent in July — its lowest level in two years. Workers arriving in the area in search of jobs drove the overall labour force up to 91,000 people, the highest recorded level since January 2016.

This marked improvement is attributed to a post-wildfire construction boom, which has bolstered the region's construction sector. In May 2016, about 2,400 homes and other buildings in Fort McMurray were destroyed in the fire.

Fort McMurray Wildfire



GO LARGE
A voluntary pilot program in Edmonton gathers information on large buildings.

EDMONTON GATHERS INFORMATION ON LARGE BUILDING ENERGY USE

The City of Edmonton has become the first municipality in Canada to track the energy efficiency of its large buildings. The city has launched a three-year pilot called Large Building Energy Reporting and Disclosure. The program asks owners to share information about their large buildings — those with more than 20,000 square feet of floor space — and offers incentives for improving energy efficiency.

The city estimates that large buildings produce 38 per cent of the city's greenhouse gas emissions and represent 42 of its energy consumption. A 10 per cent reduction in energy use by just one of the estimated 4,500 large buildings could have the same effect as taking 22 cars off the road.

GROUND-BREAKING IS SEVERAL YEARS AWAY FOR EDMONTON'S NEXT HOSPITAL

Edmonton continues to be among the fastest growing cities in Canada, and much of the growth is happening in its southwest quadrant. Growth equals demand, of course — and there's lots of it for more health care facilities.

During the summer, the province announced a new hospital for the burgeoning community of Heritage Valley. Ground won't break until 2020, however, for the $400-million health campus, as it's being called. The project is slated for a 320-acre site along Ellerslie Road, not far from Anthony Henday Drive and the Queen Elizabeth II Highway. Eventually, it will be served by the LRT, too.

The comprehensive facility, with between 350 and 500 beds, will provide services geared towards emergencies, rehabilitation, addiction, mental health, and seniors' care. The province aims to complete the project within nine years.

SMALLER COMMUNITIES RECEIVE TRANSPORTATION FUNDING

Not all the bridges, roads, and other transportation infrastructure on the Alberta horizon will be in the province's major centres. Smaller locales, in fact, are receiving cash injections from the Government of Alberta for new construction projects that fall under the transportation infrastructure umbrella.

The 2017 provincial budget allocates $100 million to the Strategic Transportation Infrastructure Program (STIP). The funding will help rural communities build or upgrade roads, bridges, airports, and other transportation infrastructure. This year alone, STIP grants worth more than $37 million are supporting 87 municipal infrastructure projects in 50 communities. The total eligible cost is $61.4 million, the contribution from municipalities $24.2 million.

Among the projects are new paving at the Slave Lake Airport, improvements to the Cattle Ranch Road in the East Prairie Métis Settlement, and repairs or replacements of dozens of bridges and culverts around the province.

WORLD WATCH

INDONESIA SEA CAVE PRESERVES TSUNAMI RECORD

Digging in a sea cave — a cave created by waves and erosion — an international scientific team has unearthed the world's most pristine record of tsunamis.

The find in Indonesia is essentially a snapshot of 11 tsunamis that occurred between 7,900 and 2,900 years ago. Anything more recent was washed away by the 2004 tsunami.

The lead author of the project, Charles Rubin of the Earth Observatory of Singapore, says the findings show how difficult it is to predict tsunamis. He noted that between them, long periods can go by — yet major ones can also also reoccur within a few decades.

SHEDDING LIGHT ON TSUNAMIS
Using fluorescent lights, Kerry Sieh and Charles Rubin of the Earth Observatory of Singapore look for charcoal and shells for radiocarbon dating.

-photo courtesy Earth Observatory of Singapore

SLOW DOWN AND FEED THE GRID

Working with engineers and other researchers at the Polytechnic University of Milan, an Italian start-up named Underground Power has developed a speed-absorbing system that does double duty.

LYBRA, a rubber paving technology, features a series of panels that create indentations as cars pass over them — think of a finger swiped along a keyboard. The bumpy ride strongly encourages drivers to slow down, but the system then works overtime by converting kinetic energy into electrical power and feeding it to the grid.

LYBRA's creators say an installation in a zone with heavy traffic, such as a supermarket parking lot or a highway tollbooth, could produce as much as 100,000 kilowatt-hours per year.

SCHOOL OF COLOUR, LIGHT, AND WONDER

With 12,000 coloured panels, the new Copenhagen International School's Nordhavn campus features the largest solar facade in the world. The panels are designed to provide about 300 megawatt-hours of electricity per year — about half the electricity needs of the seven-storey school.

The panels, angled to create a sequin-like effect, are among many buzz-generating features at the futuristic, 25,000-square-metre, US $80-million project, set among the hanging gardens and floating islands of central Copenhagen. The building is subdivided into four small towers, stacked asymmetrically and each tailored to the needs of children at different stages of development.

Structural engineering firm NIRIS, which worked with architectural firm CF Moller, designed the four columns to maximize floor and ground space. The solution involved employing diagonal steel members rather than the more traditional approach, a central concrete core.

GLACIERS AND CLIMATE
New research now suggests that glaciers, like the Athabasca Glacier of the Columbia Icefield, may have contributed to climate warming.

GLACIERS MAKE THE WORLD GO — WARMER?

Strange as it sounds, glaciers may have made the Earth a warmer place, according to recent research at Rice University in Houston. Mark Torres, an assistant professor of Earth, environmental, and planetary sciences, studied millions of years of glacial cycles. His goal was to learn more about the chemicals released by weathering on land and what their effect is on the atmosphere and the ocean.

His findings, published in Proceedings of the National Academy of Sciences, show that the oxidation of pyrite — or fool's gold — likely caused acidity. In turn, this action possibly altered carbon cycles in oceans, increasing atmospheric carbon dioxide by 25 parts per million or more for 10,000 years.

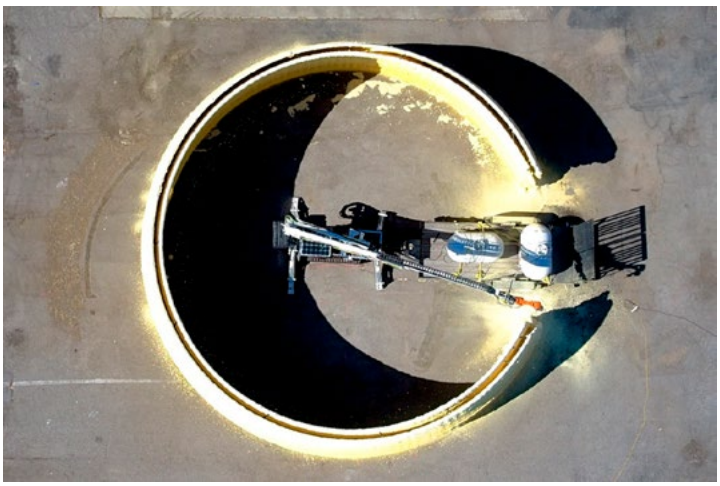
While that amount is significant, it's a small portion of the current 400 parts per million. It may, however, have created a negative feedback loop to keep glaciers from taking over the planet.

THAT PRINT JOB OF YOURS IS GOING TO TAKE 14 HOURS — AND YOU CAN MOVE IN NEXT TUESDAY

Thanks to engineers at the Massachusetts Institute of Technology (MIT), erecting buildings could become a far speedier proposition than it is today. Science Robotics reports that engineers have used 3D technology to develop a system that can "print" a building's basic structure.

Typically, 3D printers are limited by their stationary nature. But this one moves around, so it's a robot as well as a printer.

The system is a tracked vehicle with a large industrial robotic arm. At the large arm's end is a smaller, precision-motion arm. A prototype dome — 15 feet in diameter, 12 feet high — was recently constructed in less than 14 hours.



PRINT BOT
MIT researchers have designed a system that can 3D print the basic structure of an entire building. Here, it goes to work on a prototype dome.

-photo courtesy Steven Keating, Julian Leland, Levi Cai, and Neri Oxman/Mediated Matter Group

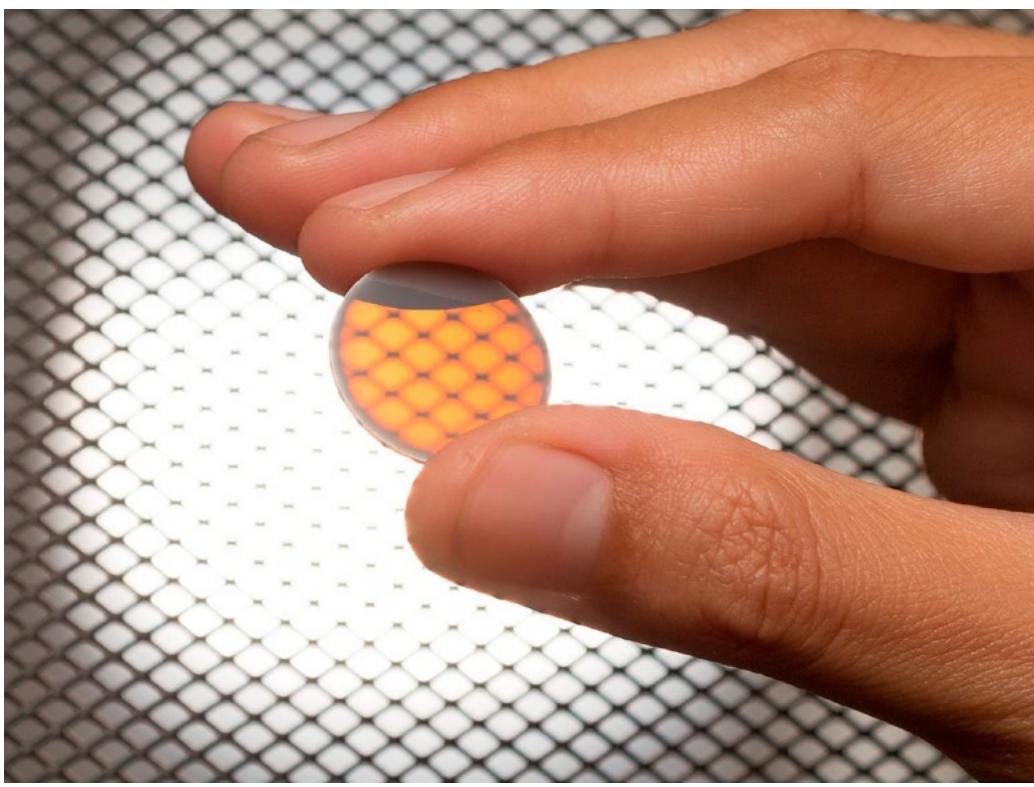
SOUNDWAVE PORTAL WOULD IMPROVE BRAIN TREATMENT

Mechanical engineers at the University of California, Riverside have developed a ceramic skull implant to help treat neurological diseases like Parkinson's and cancer.

Ultrasound surgery is relatively new as a treatment for deep brain disorders. Its effectiveness is hampered by how difficult it is to get sound waves to pass through the skull. A typical skull, after all, is six to eight millimetres thick.

What to do? Guillermo Aguilar, a professor of mechanical engineering, and his team developed a transparent ceramic material that could replace part of the skull — call it a portal for soundwaves. The hard, shatterproof piece is like the ones used in dentistry.

The innovation, reported in *Advanced Healthcare Materials*, would not disturb human tissue and could be used repeatedly.



ENTER BRAIN HERE
Developed by a team led by University of California, Riverside, ceramic skull implants like this one could become gateways to the brain for ultrasound surgery.

-photo by David Baillot, UC San Diego Jacobs School of Engineering

-photo courtesy the Alberta Energy Regulator

IF YOU SPARE THE FLARE YOU HELP THE PLANET

Chemical engineers at Washington State University may have found a way to harness a source of energy that currently lights up the planet in a big way. Those who flare gas today may be able to affordably convert it tomorrow — on site and into useable energy.

The engineers' small reactor would break water and methane into carbon monoxide and hydrogen, the two major ingredients of synthetic gas. That output could be used, therefore, to make gasoline. Or the reactor could be attached to fuel cells to generate electricity.

It's been estimated that flaring is responsible for as much greenhouse gas each year as one million cars, the university says. Methane, the primary component of natural gas, is a frequent byproduct of drilling for oil. Piping it away is expensive, so energy companies sometimes burn it.

UP IN FLAMES NO MORE?
Flaring has traditionally been a financial necessity that, though regulated, goes hand-in-hand with drilling for oil. But there may be an affordable alternative on the horizon.

OUT TO SEA, OUT OF MIND

They seem cool and weirdly beautiful, in that alien landscape kind of way. But the more ubiquitous wind turbines have become, the less public acceptance they seem to have enjoyed. Some authorities, it turns out, are looking at ways to keep them from cluttering up ocean views — by putting their turbines on floating platforms, far from shore.

The Wind Energy Institute of Tokyo reports progress on experimental floating platforms about 20 kilometres from shore. The University of Maine and partners, meanwhile, have successfully tested a floating turbine prototype called VolturnUS 1:8. Two full-sized, six-megawatt turbines will be installed in the Gulf of Maine in 2019.

Placing a platform on water deeper than 50 metres demands a flexible tethering system to support high towers in strong winds. Recent developments in semi-submersible platforms include large water entrapment plates to reduce rocking, along with instruments that keep close tabs on ocean currents.

Of course, all of this also requires that you have a nearby ocean in the first place.

NO NEEDLE, NO RISK, NO PAIN — WHAT'S NOT TO LIKE?

People with diabetes could someday benefit from a little Down Under innovation. Xiaoke Yi, of the University of Sydney's School of Electrical and Information Engineering, has created a needle-free, risk-free, and pain-free device for measuring ketones — the chemicals produced in the liver when glucose and other forms of energy are not available.

Monitoring and maintaining blood sugar levels is a critical daily necessity for people managing diabetes. Dr. Yi says that her technology is fast and accurate, and that other monitoring methods are inefficient, inconvenient, and more invasive,

The current prototype consists of an air sampling bag, a sensor head, and a signal processing unit. Dr. Yi plans to put these three components together in a compact form to make a device that's like an alcohol tester.

The Value of Professional Services 2017

For good reason, the *Value of Professional Services* is among APEGA's most sought-after publications. A compilation and analysis of data collected during our annual salary survey, it offers APEGA Members and Permit Holders unbiased salary and benefits comparisons across a wide range of industries in Alberta.

Welcome to our summary version of this invaluable resource. APEGA encourages you to use it, along with any other available information, to ensure fair compensation.

Early in May, we contacted Permit Holders to encourage them to participate. We engaged Aon Hewitt to administer and conduct the salary and benefits survey, and also to compile the resulting data for publication.

The more employer participants and emplyment positions represented, the better the data.

We're therefore pleased with the level of participation this year, which is up 38 per cent from 2016. Individual data points have increased, too.

We know from experience how popular and useful the *Value of Professional Services* is, and we appreciate the effort Permit Holders make each spring to complete the survey. Without your help, this service would not be possible.

Please feel free to contact APEGA with your comments:

Mohamed El Daly
Director of Outreach & Product Services
1-800-661-7020
salarysurvey@apega.ca.

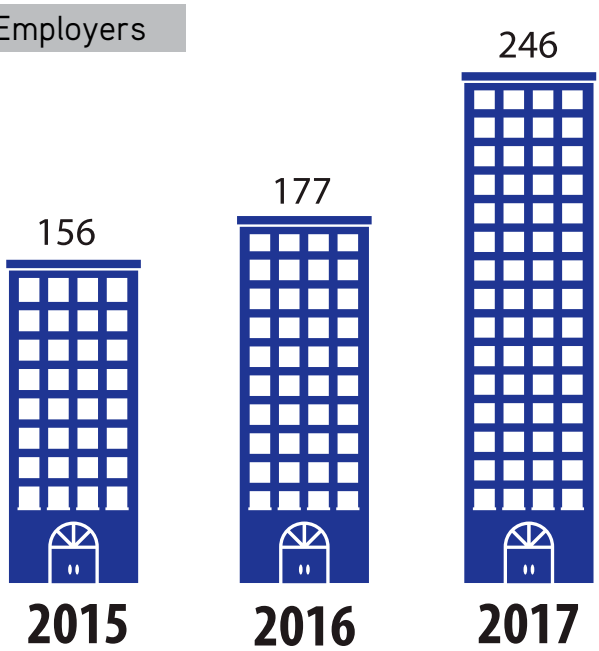
INDUSTRY CATEGORIES

This report covers nine industry categories:

- Engineering and/or Geoscience Consulting Services
- Engineering, Procurement, and Construction
- Resource Exploitation (except oil and gas)
- Resource Exploitation (oil and gas only)
- Manufacturing (durables)
- Manufacturing (non-durables)
- Not-For-Profit Service, Control, and Utilities
- For-Profit Service, Control, and Utilities
- Information and Other Advanced Technologies

Survey Participants

Employers

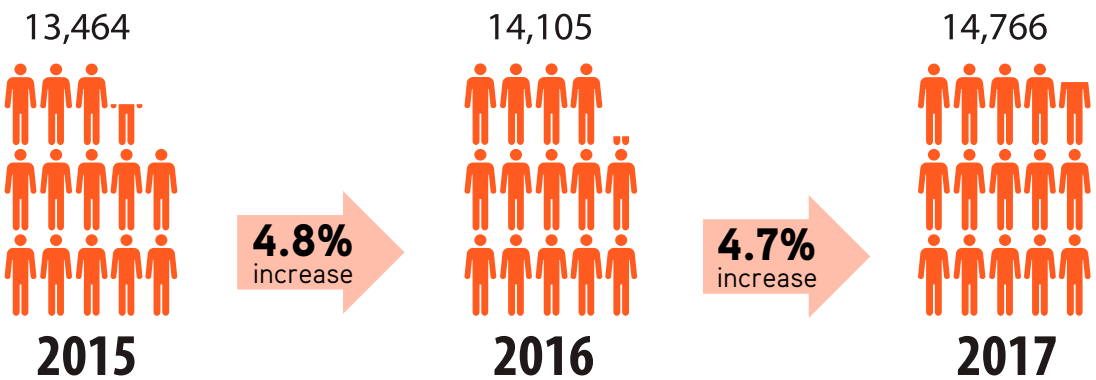


YEAR-TO-YEAR EMPLOYER PARTICIPATION

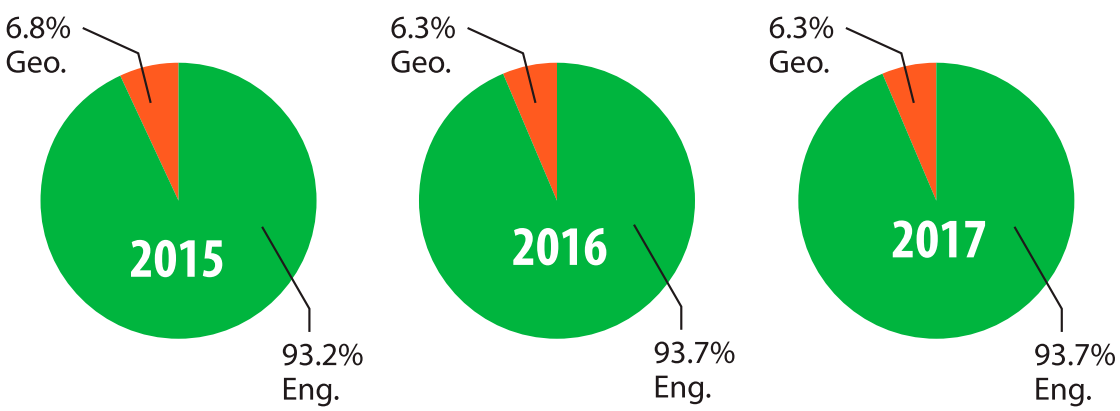
2017: Increase of **39%**

13.5% increase in 2016

Total Personnel Represented



Engineering & Geoscience Personnel Represented, Percentage of Total



HOW TO USE RESULTS

Step 1: Determine your responsibility level (A- to F+)

Step 2: Determine 2017 cash compensation results based on your responsibility level

Step 3: Review predicted salary increases reported by Permit Holders

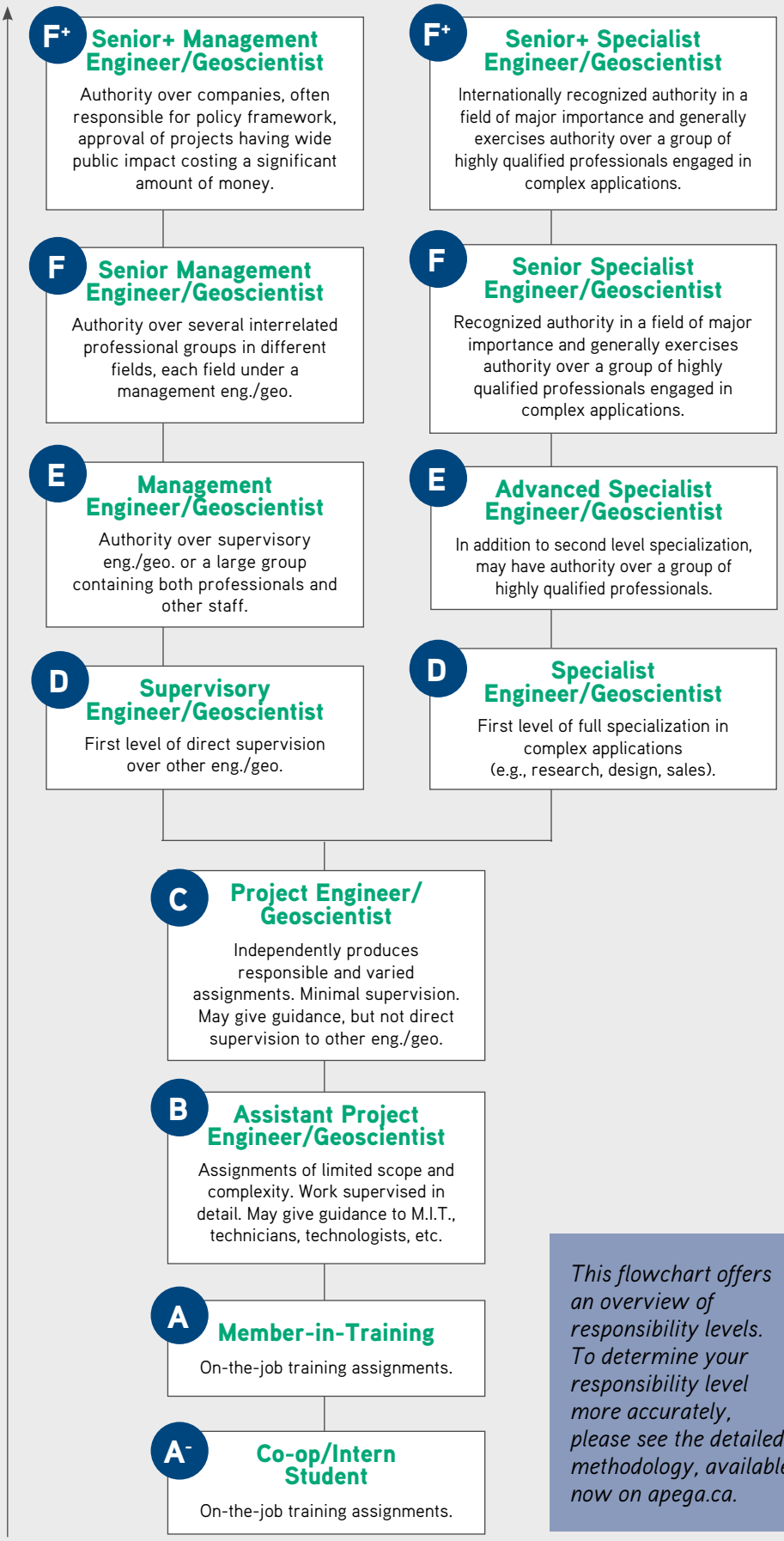
Step 4: Review perquisites, additional cash compensation, and benefit plans *(full report only)*

NOTES ABOUT SURVEY METHODS

- APEGA engaged Aon Hewitt to administer and conduct the 2017 *Value of Professional Services* salary survey.
- Invitations to participate in the survey were distributed to APEGA Permit Holders in May. Permit Holders that participated in the 2016 survey received a 2017 questionnaire with some fields prepopulated, simplifying the process.
- Results were gathered and compiled by Aon Hewitt in June and July.
- A survey was completed by each participating Permit Holder's human resources or other applicable department.
- All data sources are anonymous.
- Rather than being company weighted, compensation results this year are incumbent weighted using sample dominance. However, differences related to the methodology change between this year's data and past years' data are not statistically relevant. The decrease in compensation for engineers and geoscientists in 2017 accurately reflects ongoing economic conditions and organizations' responses to them.

JOB CLASSIFICATION FLOWCHART

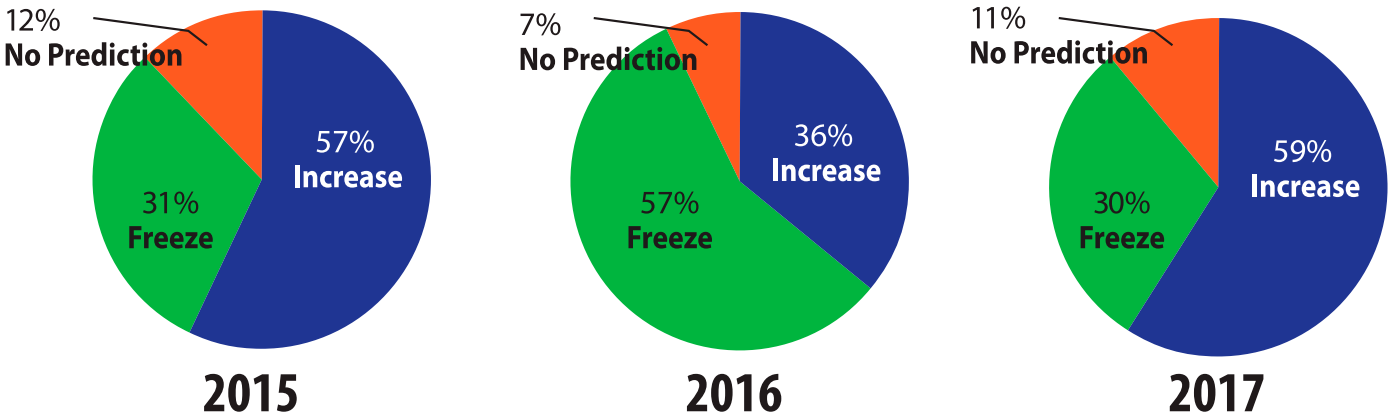
BY LEVEL OF RESPONSIBILITY



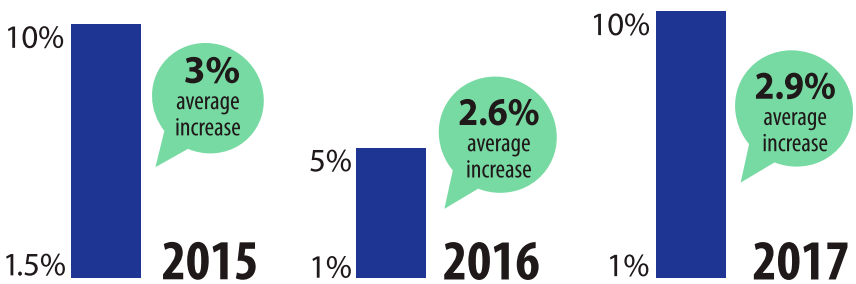
This flowchart offers an overview of responsibility levels. To determine your responsibility level more accurately, please see the detailed methodology, available now on apega.ca.

Predictions

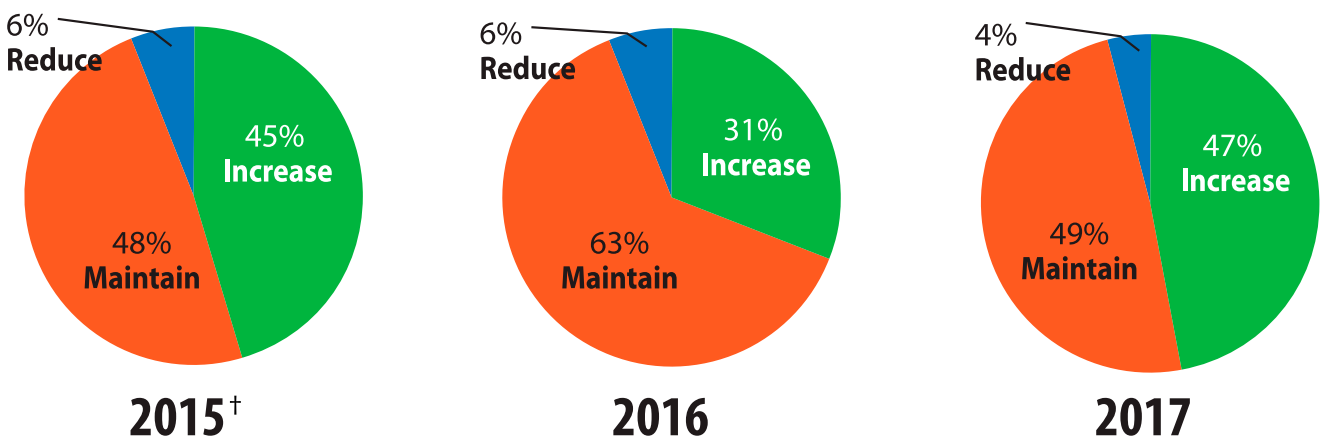
Salary Predictions for Following Year*



Salary Increase Amounts



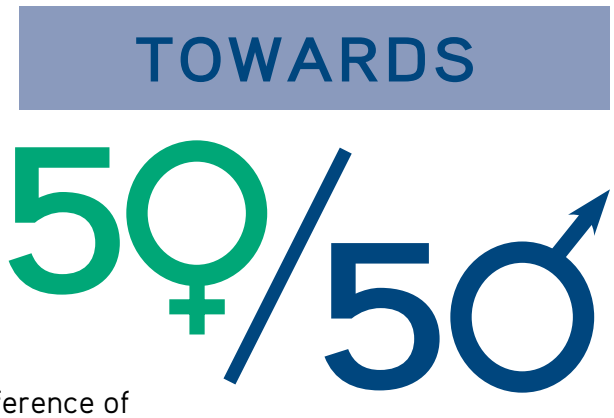
Staffing Level Predictions for Next 12 Months*



*Respondents as Percentage of Employer Participants

†*Due to rounding, total does not equal 100%.*

GENDER PROGRESS



- Females in geoscience continue to represent more than a quarter (28 per cent) of the total geoscience sample. Results show that salaries for female geoscientists are nearly equal to those of their male counterparts (99.5 per cent).
- Engineering base salary results show a difference of 2.5 per cent between male and female average base salaries in 2017.

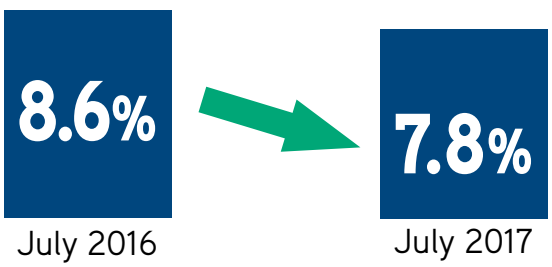
ALBERTA RECOVERY BEGINS

Alberta has started to emerge from its worst recession in more than three decades, caused by the steepest and most prolonged oil price shock in Canadian history. The Alberta economy is on the road to recovery, says the Province of Alberta's *Fiscal Plan, Economic Outlook* (March 2017). Recovery is expected to be moderate.

The outlook presents several factors that continue to support economic growth in the province:

- Oil sands production will continue to expand in the near term, supporting exports
- Fort McMurray is rebuilding after the 2016 wildfire
- Public sector capital spending continues to be strong

Alberta's seasonally adjusted **unemployment rate** is down from last year.



DID YOUR COMPANY PARTICIPATE?

We encourage all Permit Holders to participate in the salary survey. It's free, and the more Permit Holders surveyed, the most robust and representative the data.

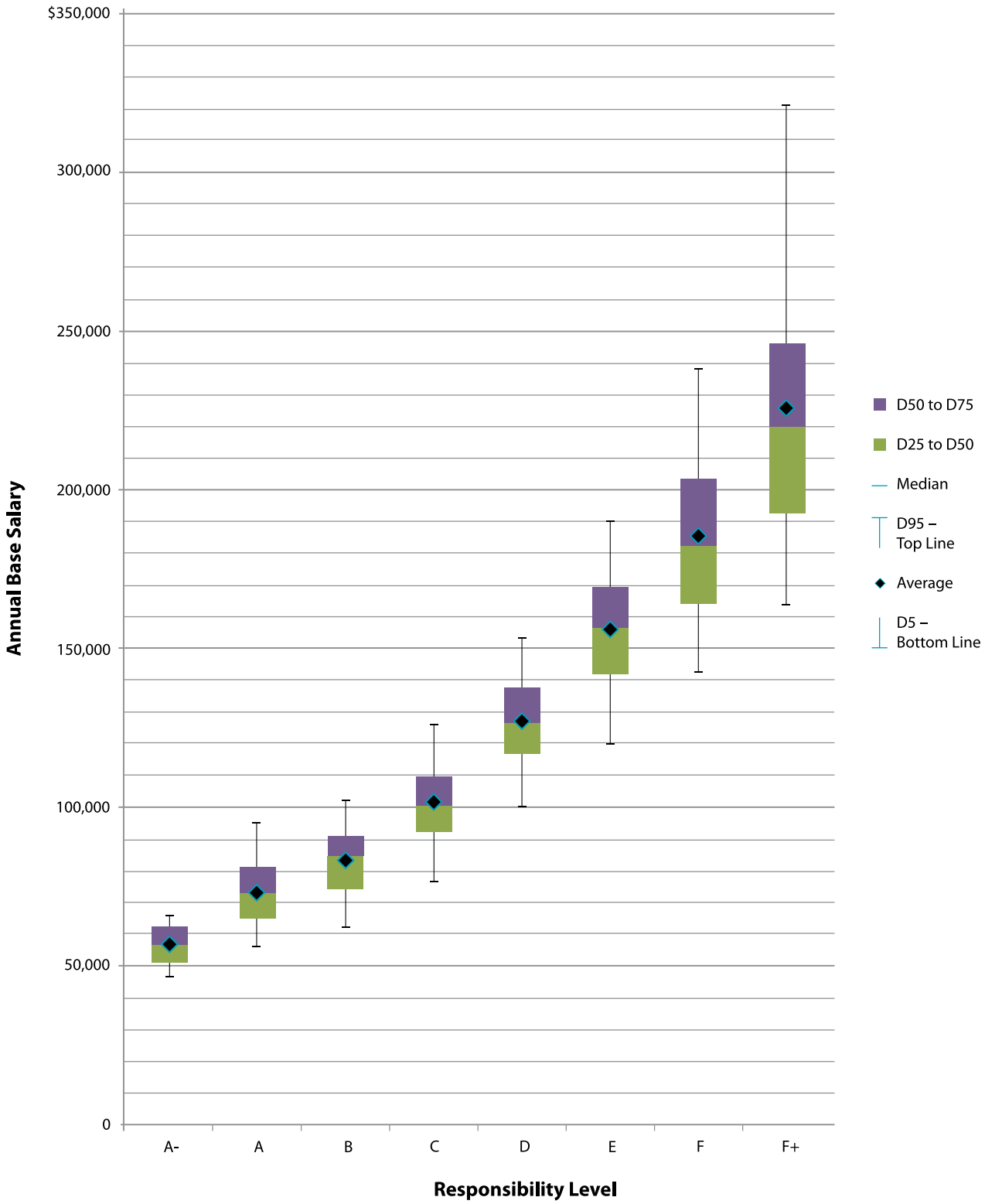
Please contact us at **salarysurvey@apega.ca** to ensure that we send your company the 2018 survey participation package, next May.

For engineers ranging from Levels A- to F+, average base salary has **decreased,** with the exception of A- and A, although average total compensation has **increased**, with the exception of C, F, and F+.

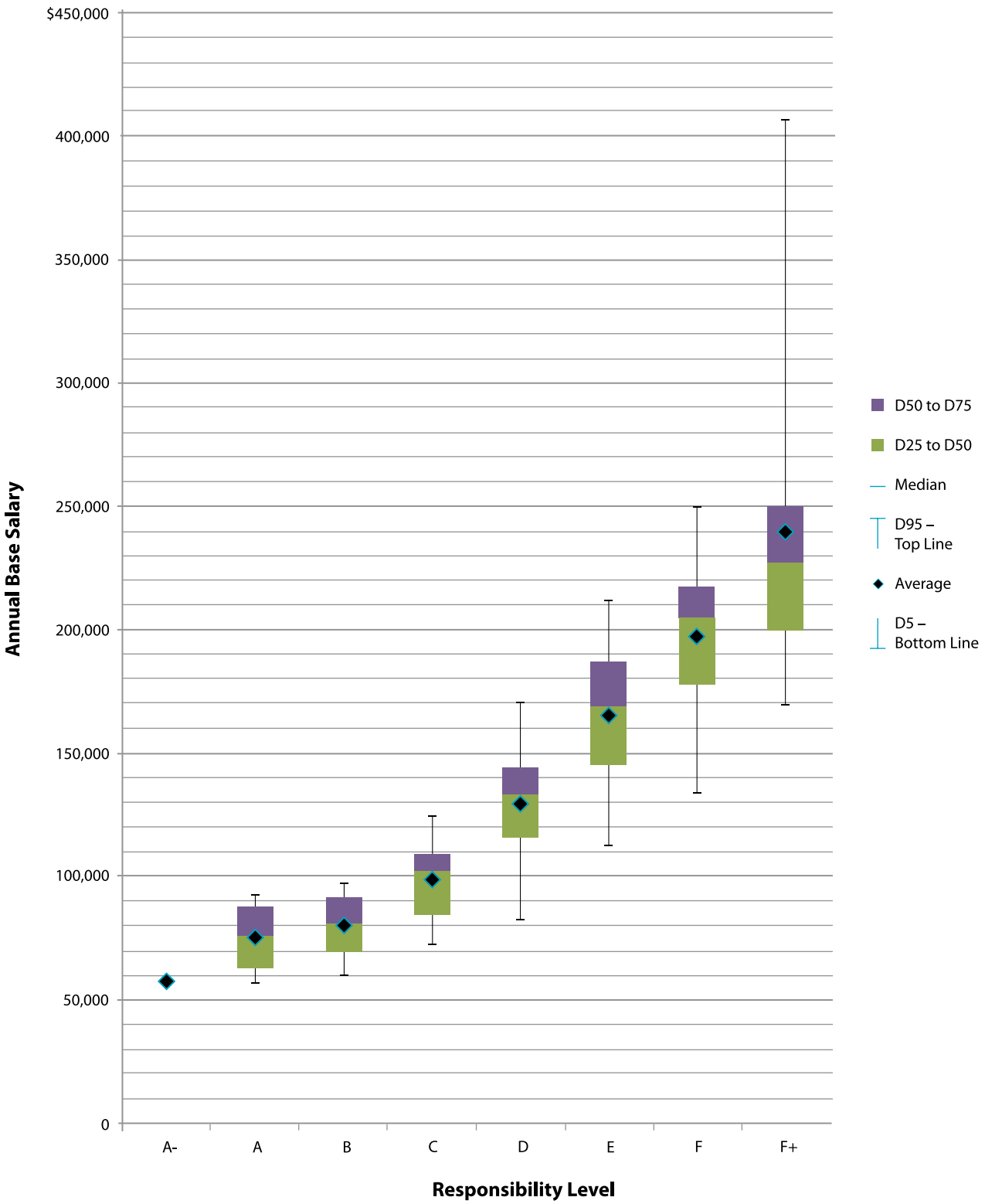
For geoscientists, Levels A, E, and F show **increases** to base salaries, but total compensation **decreases** across all levels.

See graphs on the following pages.

Engineer – All Industry
Annual Base Salary by Responsibility Level

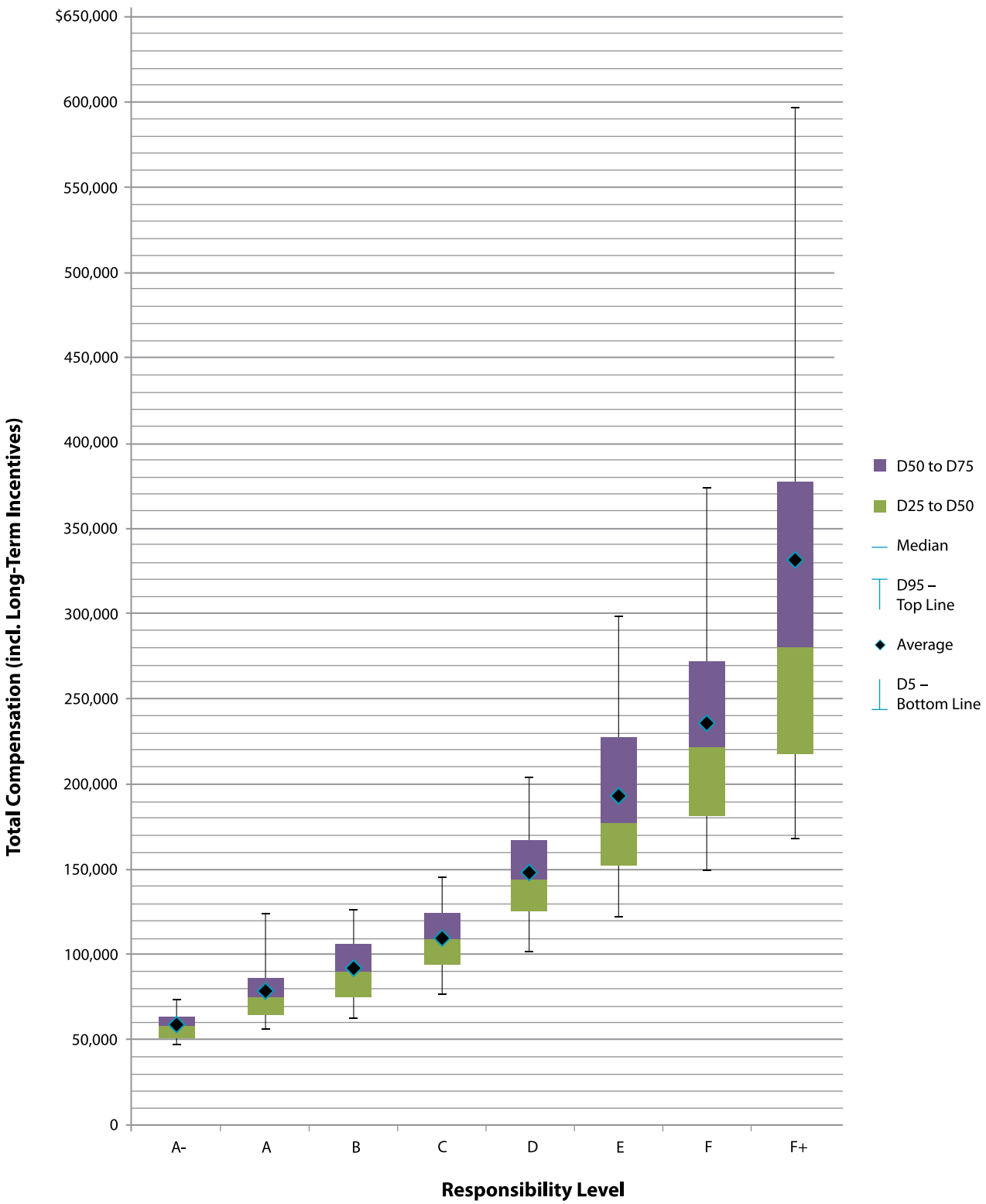


Geoscience – All Industry
Annual Base Salary by Responsibility Level

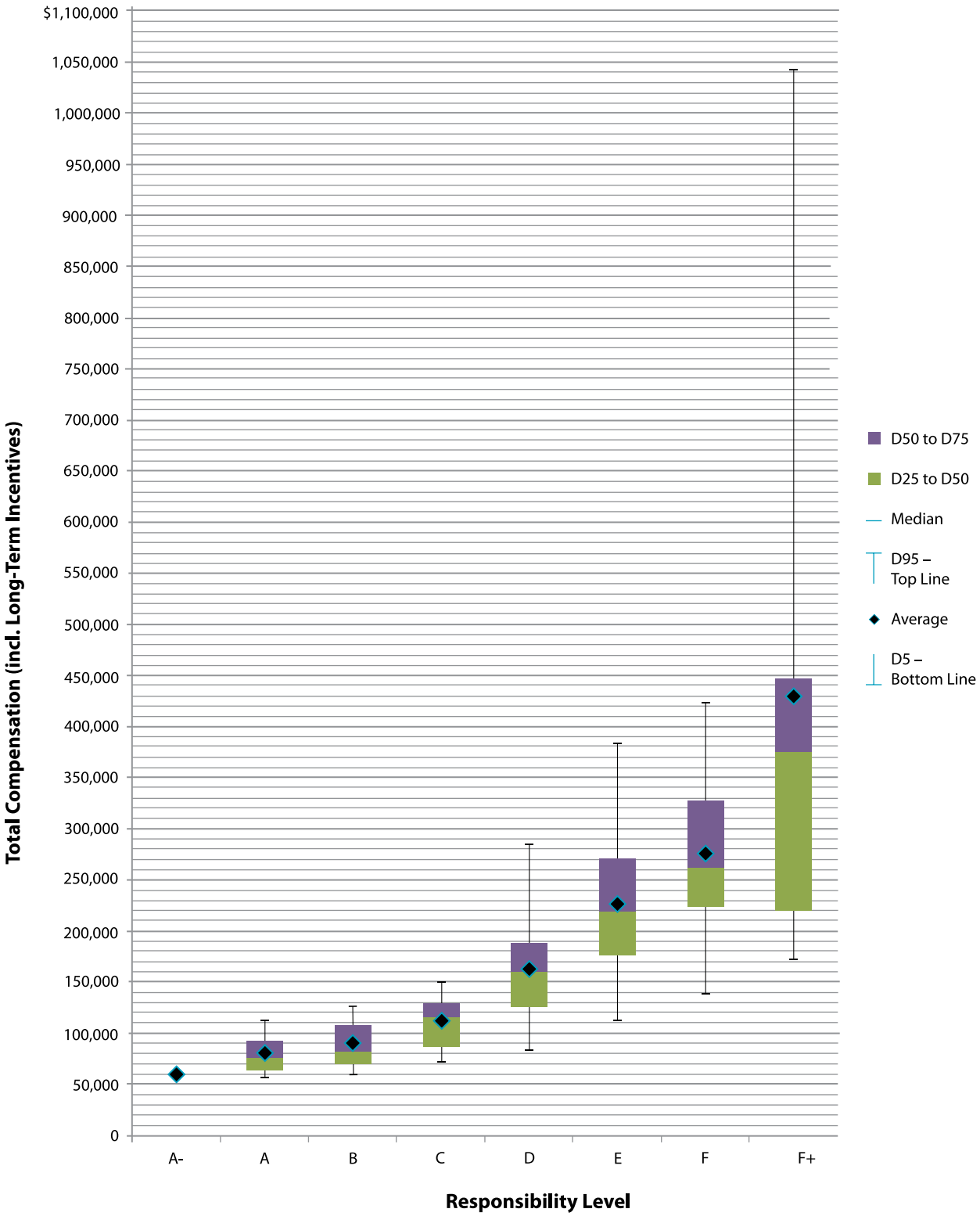


Note: Insufficient D5, D25, D50, D75, D95 percentile data for Level A-.

Engineer – All Industry
Total Compensation (incl. Long-Term Incentives) by Responsibility Level

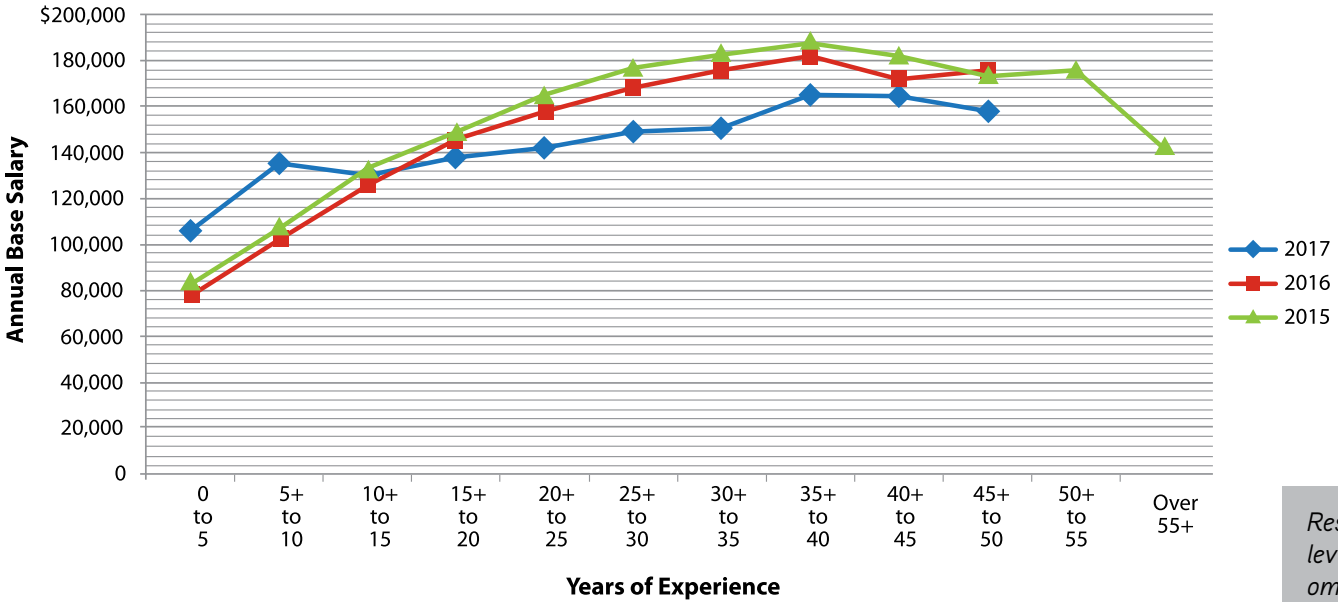


Geoscience – All Industry
Total Compensation (Incl. Long-Term Incentives) by Responsibility Level

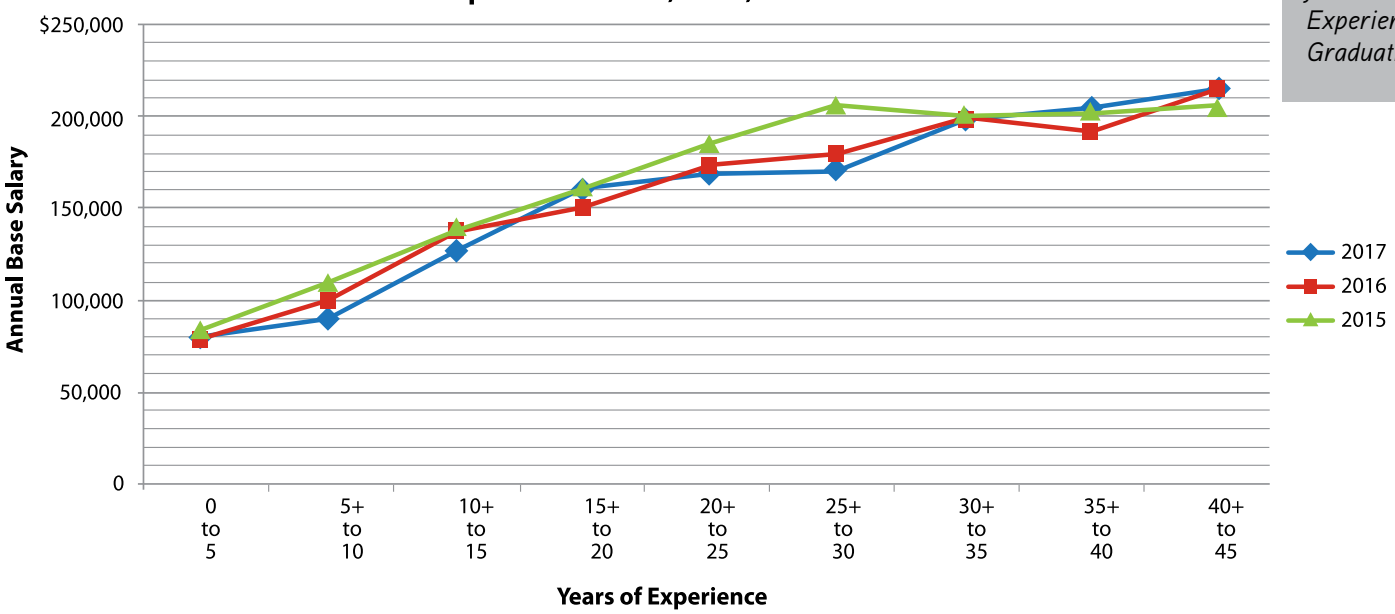


Note: Insufficient D5, D25, D50, D75, D95 percentile data for Level A-.

Engineering
Annual Base Salary by Years of Experience Since Graduation
Comparison of 2015, 2016, and 2017



Geoscience
Annual Base Salary by Years of Experience Since Graduation
Comparison of 2015, 2016, and 2017



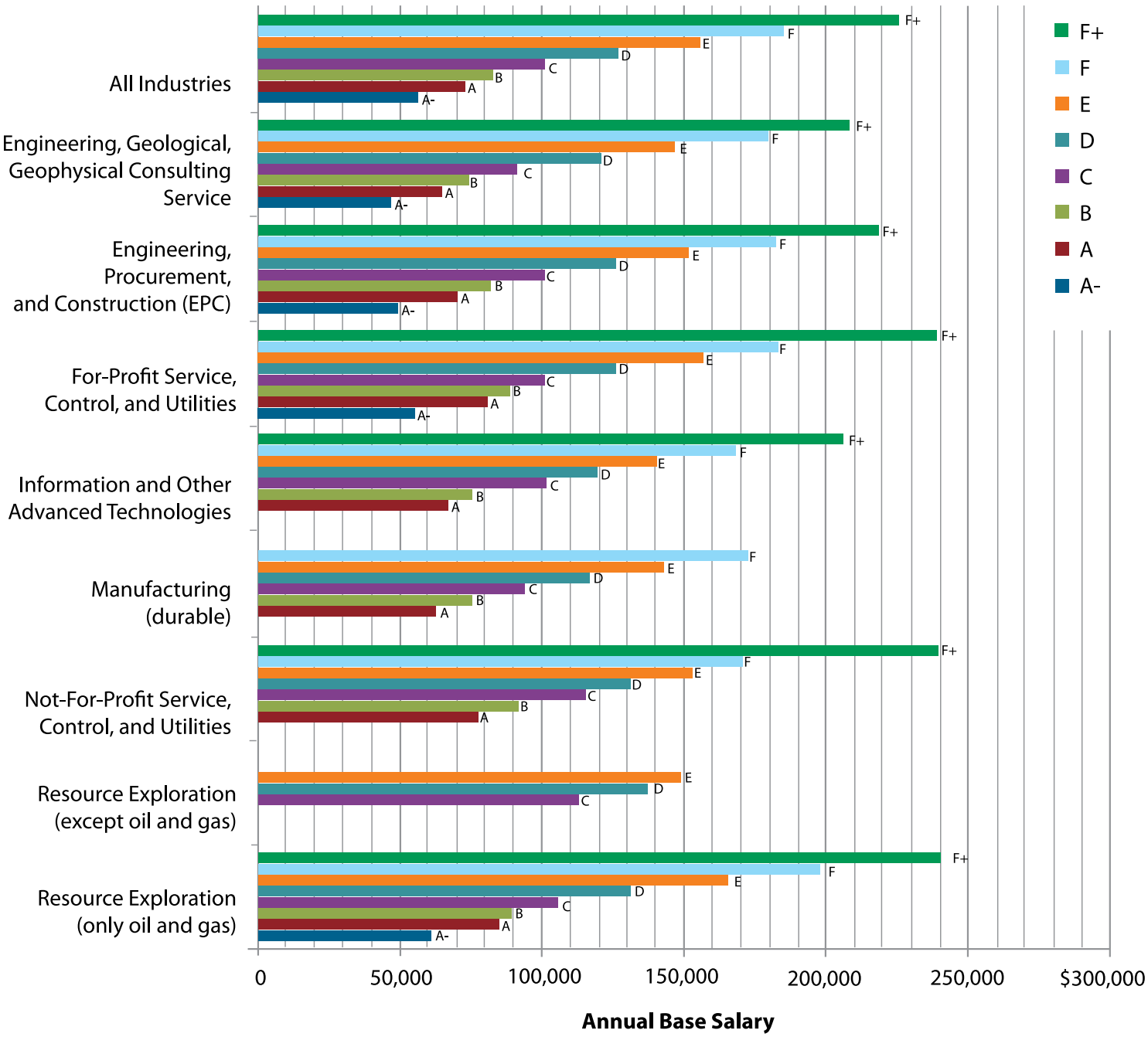
Responsibility level A- has been omitted in these charts, as this level falls outside of the defined parameters for Years of Experience Since Graduation.

In calculating Years of Experience Since Graduation, it is assumed that an individual enters the workforce immediately upon completion of his or her last degree. This may not necessarily be the case for all individuals, but it is considered the norm from a surveying perspective.

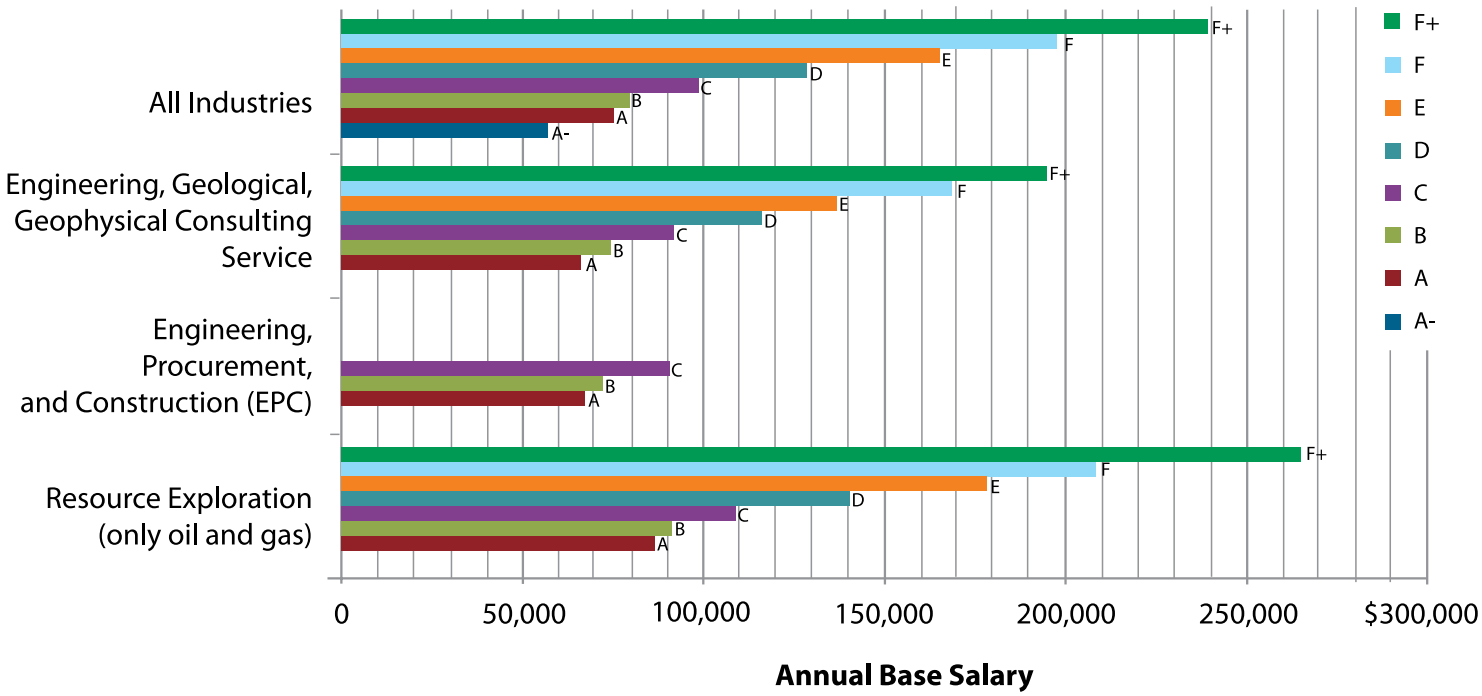
Typically, progression to the next responsibility level is also dependent on an individual's years of experience in the workforce. As more in-depth knowledge and specializations are gained over time, an individual's overall level of contribution and responsibility within a company progresses as well.

The highest average base salary is not necessarily solely attributed to the individuals with the most years of experience. Generally, it is more directly related to an individual's level of expertise/specialization, individual performance, and overall contribution within a company.

Engineering
Annual Base Salary – Comparison Across Industry



Geoscience
Annual Base Salary – Comparison Across Industry



This is a summary version only of the *Value of Professional Services.* **Please be sure to pick up your own full version* for more detailed standard survey results**, plus information on:

- Benefits & Additional Cash Compensation plans
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- Personal, Family, and Sick Days
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- Years of Experience
- APEGA Licence
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LUNCHEONS

THURSDAY, SEPTEMBER 21
Calgary's Plans for Flood Resilience
Frank Frigo, P.Eng., City of Calgary

THURSDAY, OCTOBER 19
Panel: New Jobs Emerging in Shale Gas and Tight Oil
Jackie Forest, ARC Energy Research Institute, and others

THURSDAY, NOVEMBER 16
Topic and speaker TBA

THURSDAY, DECEMBER 14
Topic and speaker TBA

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**

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EDMONTON BRANCH CALENDAR

LUNCHEONS

SEPTEMBER TBA
Bike Lanes Project
Presented by the City of Edmonton

OCTOBER TBA
Industrial Safety from Minerva Canada
Gord Winkel, P.Eng., M.Sc., Chair and Industrial Professor of Engineering Safety and Risk Management, U of A

NOVEMBER TBA
41 Combat Engineer Regiment
Lieutenant-Colonel Scott Long, Commanding Officer

Luncheons held at: Venue or venues to be confirmed

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

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- Youth and University Outreach
- Mentoring

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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

APEGA
Volunteer

Share Your Knowledge and Experience

APEGA Members are needed for the following volunteer opportunities

Appeal Board Panel Members

Committee members are needed for the Appeal Board, which provides Members and the public full protection of their statutory right of appeal and right to natural justice.

Candidates must:

- be licensed with APEGA as a P.Eng., P.Geo., P.Geol., P.Geoph. or P.L. for a minimum of 5 years
- be a practising Professional Engineer or Professional Geoscientist of 10 years or more

Discipline Committee Members

Committee members are needed for the Discipline Committee, which hears and decides on complaints of unskilled practice and unprofessional conduct against APEGA Members and Permit Holders, brought before it by the Investigative Committee.

Candidates must:

- be licensed as a Professional Member of APEGA — P.Eng., P.Geo., P.Geol., P.Geoph., P.L.(Eng.), or P.L.(Geo.)
- have a minimum of 10 years of industry experience
- have experience interpreting legislation as it applies to municipal permits or appeals in other courts, or through involvement with APEGA and the *Engineering and Geoscience Professions Act*
- have experience reading and understanding legal decisions
- have experience participating in legal or quasi-legal proceedings, whether through APEGA, other regulators, or Alberta Courts

Investigative Committee Members

Committee members are needed for the Investigative Committee, which investigates complaints of unskilled practice and unprofessional conduct against APEGA Members and Permit Holders.

Candidates must:

- be licensed with APEGA as a P.Eng., P.Geo., P.Geol., P.Geoph., or P.L.
- have experience as a Professional Member, ideally over 10 years of it in industry
- have a minimum of 5 years of Canadian Professional Membership, preferably with APEGA

Applicants from all disciplines of engineering or geoscience are encouraged to apply. Candidates with experience in residential and commercial construction, geotechnical engineering, and environmental practice are always needed.

Subject Matter Expert Panel Member — Outsourcing of Professional Work

APEGA is seeking panel members who are subject matter experts on the outsourcing of professional work. The panel will help enhance APEGA Members' awareness of outsourcing issues of a professional nature through the combining of two existing practice guidelines into a single *Professional Practice Standard for Outsourcing of Professional Work.*

Candidates must:

- be licensed as a P.Eng., P.Geo., P.Geol., P.Geoph., or P.L. with APEGA, in good standing, for a minimum of 10 years
- be able to supply expertise outside of APEGA's mandate as required by the panel chair
- have past and current experience practising in a related aspect of the management of engineering or geoscience projects and professional work
- be recognized as an experienced practitioner of engineering or geoscience

Subject Matter Expert — Registration Committee

APEGA is looking for Members to act as subject matter experts (SMEs) on the Registration Committee. The primary duty of subject matter experts is to review and provide recommendations on whether an applicant for professional registration has met the minimum requirements for registration.

Academic SMEs and experience SMEs with the following areas of expertise will be given preference:

Geoscience

- Geology
- Environmental Geoscience
- Geophysics

Engineering

- Agricultural
- Biotechnology/ Bioresource/ Biochemical
- Chemical — Processing
- Civil/Structural
- Computing/ Software
- Electrical — Electronics
- Electrical — Power and Transmission Systems
- Engineering Physics
- Environmental
- Forestry
- Geological Engineering
- Geomatics
- Industrial
- Materials
- Mechanical
- Mechatronics
- Mining and Mineral Processing/ Metallurgical
- Nanotechnology
- Naval
- Petroleum

Academic SME candidates must:

- hold a faculty position or professor emeritus status in engineering or geoscience at a university within Canada
- have held non-practising status for no longer than 5 years

Experience SMEs candidates must:

- have demonstrated expertise in an area of engineering or geoscience with at least 10 years' experience in the field of practice
- have an APEGA licence to practise engineering or geoscience, or have held non-practising status for no longer than 5 years

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.

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Application forms are available at engineerscanada.ca/awards-and-honours/scholarship-program or by contacting the Engineers Canada Scholarship Program at **awards@engineerscanada.ca**

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Recommended Orders

Date: February 15, 2017 Case No.: 17-002-RDO

IN THE MATTER OF THE ENGINEERING AND GEOSCIENCE PROFESSIONS ACT AND IN THE MATTER OF THE CONDUCT OF [PROFESSIONAL MEMBER A], P.ENG., AND [PERMIT HOLDER B]

The Investigative Committee of the Association of Professional Engineers and Geoscientists of Alberta (APEGA) investigated the conduct of [Professional Member A], P.Eng., and his company [Permit Holder B] with respect to a letter of complaint received from [Complainant C] on January 9, 2015, alleging unskilled practice in the engineering approval of pilings for a ready-to-move home.

A. COMPLAINTS

1. The Member has engaged in unprofessional conduct that was detrimental to the best interests of the public contrary to Section 44(1) (a) (b) of the *Engineering and Geoscience Professions Act* ("Act") and Rule of Conduct #1 of the A*PEGA Code of Ethics* ("Code"). The Member failed to investigate soil reports and neglected to visit the site for first-hand information on soil conditions and did not hold paramount the best interests of the public.
2. The Member has engaged in unskilled practice that displayed a lack of judgment in the work undertaken contrary to Section 44(1) of the Act and Rule of Conduct #2 of the Code. The Member misinterpreted the pile-driving record and improperly approved the adequacy of the piles with no engineering basis.
3. The Member has engaged in unprofessional conduct that was detrimental to the best interests of the public contrary to Section 44(1) (b) of the Act and Rule of Conduct #3 of the Code. The Member misled the Panel by misinforming the Panel on [Company D's] reading and interpretation of the pile driving records.

B. AGREED STATEMENT OF FACTS

1. [Professional Member A], P.Eng., was a professional Member of APEGA and was thus bound by the APEGA Code of Ethics at all relevant times.
2. [Permit Holder B] held a valid Permit to Practice and was bound by the Act and the Code at all relevant times.
3. The Member was engaged by [Company E] to prepare an Engineering Report for the piling foundation of a ready-to-move home to be placed on the lot of [Complainant C] near [Rural Community F], Alberta.
4. The pilings were installed on the [Complainant C] property by [Company D] on November 6, 2014. At the time the Member was retained by [Company E], the pilings were already installed.
5. The November 6, 2014, pile report prepared by [Company D] indicated that 9 of 31 installed piles were "soft." At the request of [Complainant C], [Company E] instructed [Company D] to return to the site on December 2, 2014, and add more length to the "soft" piles.
6. The Member prepared and authenticated a drawing on December 6, 2014, indicating his approval of the pile installation.

***Case No. 17-002-RDO** continued*

7. The Member did not attend the site. His approval of the pile installation relied on the pile-driving records and a verbal confirmation from [Company E] that the piles were installed satisfactorily.
8. On December 16, 2014, [Inspector G] with [Company H] attended the site. He noted the connections on the lengthened piles were not welded. He discussed this with [Professional Member A], who advised him that although the connections should have been welded, they were pressed tightly together and would not come apart. [Inspector G] accepted [Professional Member A's] authenticated drawing and verbal advice, and subsequently advised the homeowner the piles met the requirements of the Alberta Building Code.
9. [Complainant C] disagreed with the Member's assessment of the piles and lodged a complaint with APEGA.
10. On November 6, 2015, the Member was interviewed by the Panel. The Panel determined that the Member's interpretation of the pile-driving record was flawed and that the document was approved with no engineering basis.
11. On November 15, 2015, the Member advised the panel that he was provided with information that his interpretation of the pile-driving record was in fact correct.
12. On November 20, 2015, [Company D] confirmed for the Panel that the Member's interpretation of the pile-driving record was incorrect.
13. The Member advised the Panel of his intention to retire from the practice of engineering effective October 1, 2017.
14. The Member advised the Panel that he will not practice in pile design and installation leading up to the anticipated October 1, 2017, retirement date.
15. The Member cooperated with the APEGA investigation and accepted full responsibility for the situation.

C. CONDUCT

The Member freely and voluntarily admits that he engaged in unprofessional conduct and unskilled practice that contravened Section 44(1)(b) of the Act and Rules of Conduct #1, #2, and #3.

D. SECTION 44(1) OF THE ACT AND THE CODE OF ETHICS

1. Section 44(1) of the Act states:

Any conduct of a professional member, licensee, permit holder, certificate holder or member-in-training that in the opinion of the Discipline Committee or the Appeal Board

(a) is detrimental to the best interests of the public;

(b) contravenes a code of ethics of the profession as established under the regulations;

(c) harms or tends to harm the standing of the profession generally;

(d) displays a lack of knowledge of or lack of skill or judgment in the practice of the profession, or;

(e) displays a lack of knowledge of or lack of skill or judgment in the carrying out of any duty or obligation undertaken in the practice of the profession,

whether or not that conduct is disgraceful or dishonourable, constitutes either unskilled practice of the profession or unprofessional conduct, whichever the Discipline Committee or the Appeal Board finds.

2. Applicable Rules of the APEGA Code of Ethics state:

1 *Professional engineers, geologists and geophysicists shall, in their areas of practice, hold paramount the health, safety and welfare of the public and have regard for the environment.*

2 *Professional engineers, geologists and geophysicists shall undertake only work that they are competent to perform by virtue of their training and experience.*

3 *Professional engineers, geologists and geophysicists shall conduct themselves with integrity, honesty, fairness and objectivity in their professional activities.*

***Case No. 17-002-RDO** continued*

E. ORDERS

On the recommendations of the Investigative Committee and by agreement of [Professional Member A], P.Eng., with those recommendations, following a discussion and review with the Discipline Committee Case Manager, the Discipline Committee hereby orders that:

1. [Professional Member A], P.Eng., shall receive a Letter of Reprimand, a copy of which will be maintained permanently in his registration file and be considered at any future date by APEGA.
2. The circumstances of the case, not including your name, be published in *The PEG* magazine or its most current format, in the e-PEG electronic newsletter, and on the APEGA website.
3. [Professional Member A], P.Eng., take the necessary steps to cancel his registration with APEGA no later than October 1, 2017. Should [Professional Member A] fail to take the necessary steps, APEGA will cancel his registration effective October 1, 2017.
4. [Professional Member A], P.Eng., take the necessary steps to cancel the Permit to Practice with APEGA for [Permit Holder B] no later than October 1, 2017. Should [Professional Member A] fail to take the necessary steps, APEGA will cancel the Permit to Practice effective October 1, 2017.
5. Neither [Professional Member A]. P.Eng., nor [Permit Holder B] shall practise engineering in pile design and installation from the date of this Order through the cancellation dates outlined in (3) and (4) above.
6. If at any time prior to October 1, 2017, APEGA has reasonable grounds to believe [Professional Member A] and/or [Permit Holder B] engaged in the practice of pile design and installation, APEGA will cancel the respective registration and Permit to Practice, impose a $2,000 fine to [Professional Member A], and may pursue additional disciplinary action.

I, [Professional Member A], P.Eng., acknowledge that before signing this Recommended Order, I consulted with legal counsel regarding my rights or that I am aware of my right to consult legal counsel and that I hereby expressly waive my right to do so. I confirm that I agree to the facts and admissions as set out above in this Recommended Order, and that I agree with the Orders that are jointly proposed.

IN WITNESS WHEREOF the undersigned agrees with the Agreed Statement of Facts and Acknowledgment of Unprofessional Conduct in its entirety.

[PROFESSIONAL MEMBER A], *P.ENG.*

SIDDHARTA DASGUPTA, *P.ENG.*
Panel Chair, APEGA Investigative Committee

APEGA Discipline Committee
Approved this 15th day of February 2017
By Case Manager Marc Sabourin, P.Eng.

Decision Archive

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.

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IN MEMORIAM

Between November 1, 2016, and August 31, 2017, APEGA received notice of the of the deaths of the following Members.

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GOVIER, George, P.Eng.

ORR, Norman, P.Eng.

Life Members

ALLAN, David, P.Eng.
ALLBRIGHT, Ronald, P.Eng.
ANDERSON, Clarence, P.Eng.
AYDIN, Mustafa, P.Eng. P.Geoph.
BAHNIUK, Thomas, P.Eng.
BAIRD, Hugh, P.Eng.
BAKER, Roy, P.Eng.
BATE, Thomas, P.Eng.
BERRETTI, Massimiliano, P.Eng.
BROWN, Philip, P.Geol.
BUTLER, Percy, P.Eng.
CARY, William, P.Eng.
CAWKER, Roberts, P.Eng.
CHERITON, Edith, P.Eng.
CHMILAR, Walter, P.Eng.
CHOATE, Deryck, P.Eng.
CONDROTTE, Edward, P.Eng.
CROCKETT, Ray, P.Eng.
CUMMING, Lloyd, P.Geol.
CUNNINGHAM, William, P.Eng.
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DE SIMON, Anthony, P.Eng.
DEN HARTOG, Jacobus, P.Eng.
DEWIEL, John, P.Geol.
DRISCOLL, Lloyd, P.Eng.
EDLUND, Robert, P.Eng.
EWANCHYNA, Joseph, P.Eng.
FLENNIKEN, William, P.Geol.
FREEMAN-MARSH, John, P.Eng.
GALL, Louis, P.Eng.
GEIS, Elmer, P.Eng.
GLOCKNER, Peter, P.Eng.
GOURLAY, Robin, P.Geol.
GRABURN, William, P.Eng.
GREGORY, John, P.Eng.
GRIMBLE, Louis, P.Eng.
HANSON, Ronald, P.Eng.
HARRY, Robert, P.Eng.
HAWRELIAK, Leonard, P.Eng.
HENNENFENT, William, P.Eng.
HERBALY, Elmer, P.Geol.
HOGUE, Brent, P.Geol.
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KARWOWSKI, Zbigniew, P.Eng.
KINGMA, Ynte, P.Eng.
KIRKER, Raymond, P.Geol.
KUDRENECKY, Max, P.Eng.
LAMB, Thomas, P.Eng.
LAURESHEN, William, P.Eng.
LAW, Ernest, P.Eng.
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LLOYD, Griffin, P.Geol.
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MARZOCCO, Alan, P.Eng.
MASUDA, Akira, P.Eng.
MAW, John, P.Eng.
MAXWELL, James, P.Eng.
McCASKILL, Alexander, P.Eng.
McGUFFIN, Gordon, P.Eng.
McKAY, Rodney, P.Geol.
McVICAR, Barry, P.Eng.
MEYER, Arthur, P.Eng.
MONTGOMERY, Walter, P.Eng.
MORGAN, Leslie, P.Eng.
MYKITIUK, De, P.Eng.
ORR, Robert, P.Geol.
PAMPLIN, Larry, P.Eng.
PARKER, Michael, P.Eng.
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