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Association of Professional Engineers & Geoscientists of Saskatchewan

THE PROFESSIONAL EDGE

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THE PROFESSIONS AND COMMUNICATIONS

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President's Message

Stormy Holmes, P.Eng., FEC

Communication is one of the operating tenets of APEGS. For 2019, we implemented the first ever strategic communications plan for APEGS. The plan suggests communications and public relations strategies, tools and tactics that affect all committees and their communications with the public and APEGS members. The main objectives of the plan are to increase public understanding that APEGS and the professions safeguard the public and the professions and to achieve more consistency in the way that APEGS communicates.

Stormy walking up Signal Hill in St. John's, Newfoundland and Labrador on her way to PEGNL and Geoscience Canada meetings.

Communication is an important way to make sure all players are on the same page. We try our best to make sure our communication efforts regarding events, activities and initiatives allow our members to remain informed and engaged with their association. This focus on engagement proved to be of great value as we moved forward with two major changes approved by the membership last year: Required Continuing Professional Development and Competency Based Assessment. To allow our members time to know and understand these changes, a concerted effort was made to reach our members in their home locations through the road shows in local communities.

We also spend time engaging with our past presidents. This learned and experienced group of members provides sage advice as we move forward with various changes to the Association. APEGS puts a focus on meeting with the past presidents at least twice annually to discuss the issues that Council is considering, to get their feedback on what they perceive as upcoming changes or challenges in the professions and to use their experience as we forge into areas that have been considered before. As I've travelled across the country and met with our sister associations, I believe we have a unique relationship with our past presidents that puts the association in good stead.

Meeting with Engineers Canada and our sister associations is also important to the strength of our association. There is much to be learned from what is happening in other provinces and territories. Some of what we learn helps ensure we are aware of the challenges they are facing and also helps incorporate best practices into our association.

Whether the situations are personal, work, volunteer or other, take time to understand your strengths and weaknesses and be open to

Stormy at the Pacific Northwest Economic Region meeting in Spokane, Washington in July 2018 with husband and APEGS member, Patrick Lalach, P.Eng.

opportunities for growth in communication. I've learned a lot over this past year about the power of communication – when to talk and when to listen, the importance of engaging all stakeholders and varying the communication medium.

As my final President's Message, thank you to the members for giving me this opportunity to serve you and the professions. Thank you to the great group of councillors; we have had healthy debates in making the best decisions.

Thank you to the staff at APEGS, whom have been great to work with and supportive, as always. If you haven't had a chance to volunteer with the association, please consider it, as you will reap the rewards many times over. My experiences over this year and previously on executive committee have been very rewarding and helped build me. I strongly believe that our work is the backbone of society, providing essential infrastructure that no one thinks about it until it doesn't work.

Planning to Succeed: APEGS Strategic Communications

BY MARTIN CHARLTON COMMUNICATIONS

If there is one thing you can say in general about engineers and geoscientists, they are not comfortable in the spotlight. They prefer to be the diligent experts working in the background.

This is the experience APEGS's Communications Manager Sheena August had when she first started to introduce the association to the concept of strategic communications.

"Self-promotion is not something that engineers and geoscientists spend a lot of time doing. They laugh when I tell them that I think they are modest. But I think it is true. They are more interested in solving a problem to make people's lives better than telling people about what they have done. I admire them for that, and I am happy to get the chance to celebrate them on their behalf," August said.

"In the beginning, I spent some time to ensure that staff and committees really understood strategic communications planning and what it could do for them. It is tempting for every organization to just toss you the reins without a real plan for what to do or even if we should be doing it. I have worked at a lot of places that never really understood strategic communications planning, so it was amazing how quickly everyone caught on at APEGS."

Ultimately, August found that strategic communications had a strong appeal to the most basic instinct of APEGS professionals – to follow a very similar process to plan every project.

"In the beginning, some committees wanted tools and tactics without strategy, without knowing what they were actually going to use them for and what they were trying to achieve with them. Other committees were excited about the new ideas that were being formed through the process and eager to skip steps, driven by the expectation of better results. But people patiently allowed me to ask question after question to reinforce the nine steps of strategic communications planning. Now we are all on the same page about what we need to focus on for strategy and tactics and have even moved beyond from the tactical 'are we doing things right?' to the strategic, 'are we doing the right things?'"

In this, she enjoyed the enthusiastic support of Danae Lemieux, P.Eng., the new chair of the APEGS Communications and Public Relations committee.

"I wanted APEGS to practise what we preach as professions—innovation and forward movement. I felt that APEGS was kind of stuck in the ways we communicate. I wanted APEGS to be on social media to reach a larger variety of people and increase the awareness of APEGS and its activities among members and the public. I think we can do a better job of telling them about us," Lemieux said.

Doing a Deep Dive

Beginning in 2017, August began an extensive process of consultation to develop a strategic communications plan for the association.

"The Communications Manager position was brand new, and Council and management allowed me the time to

really get to know APEGS," said August. "I attended numerous committee meetings and did a lot of research as well as analyzed the research we already had. This allowed me to get my head around how the committees work together and where they may need more connection to increase consistency and continuity in the way we communicate, with whom, and how."

At the time, the centrepiece of the association's public awareness efforts was a multi-year television ad campaign which was monitored by regular polling. In assessing this initiative, August found mixed results.

"In working with the Communications and Public Relations Committee, we realized that while 89 per cent of people liked our commercials, only 17 per cent of the public was actually aware of APEGS. And they didn't actually know anything about APEGS or what we do. If we want people to think of APEGS as a good regulator that is able to ensure public safety, then they need to know that this is what we do. Of course, to know what APEGS is and does, people first need to know about engineers and geoscientists. You cannot talk about regulation without talking about the professions."

"Other issues we identified were that people are unaware of the ethical obligations of engineers and geoscientists to ensure public safety, and they don't think that engineers and geoscientists are involved in the community. But once people know an engineer or geoscientist, their positive impressions of them markedly improve."

Making a Plan

To adjust for these issues, August launched the APEGS strategic communications planning initiative.

What is strategic communications planning?

"Strategic communications planning is a process to increase or maintain an organization's reputation and relationships, manage issues and support the achievement of business goals. The process involves three phases: Using research to analyze a situation. Creating a plan to respond to the situation. Evaluating the plan to measure success," August says.

Those three phases then lead to nine steps (see below).

What is the Plan

According to August, the plan consists of implementing new best practices in communications and delivering some special projects using the new best practices:

- Improve organizational performance by providing more structure and support around communications and public relations.
- Use more current communications media, like digital, social, web and mobile platforms.
- Get publicity ("earned media" news coverage versus "paid media" advertising);
- Be more visible at events hosted, sponsored and attended by APEGS representatives;
- Use more face-to-face interpersonal communication between members and the public;
- Engage more with rural Saskatchewan.

To achieve these best practices, APEGS has launched a range of initiatives:

1. Getting the movie Dream Big: Engineering Our World into every school for Engineering and Geoscience Week 2019.
2. Creating new awareness campaign ads that focus on the role of APEGS to safeguard the public.
3. Renewing the annual meeting format and proceedings to make it a celebration of the past year that appeals to our diverse membership.
4. Implementing a social media program.
5. Reviewing and redesigning the website.
6. Reviewing and updating *The Professional Edge*.
7. Updating visual identity standards.
8. Creating a communications planning guide for committees.

"The cornerstone of the 2019 plan is to let people get to know engineers and geoscientists while also underscoring that self-regulation helps ensure public safety. We have not been that forthcoming with the latter part in our messaging in the past several years. It was time to make that message stronger," August said.

Launching the *Dream Big* campaign to the schools in Saskatchewan demonstrated the success of communications planning. APEGS reached and engaged over 300 volunteers, 100 schools and over 23,000 students in Saskatchewan. The audience at these schools, including students, teachers and parents, learned the significance of APEGS in safeguarding the public while being introduced to the fun problem-solving techniques of engineers and geoscientists.

Looking Ahead

The new initiatives are aggressive ones which may take several years to fully implement. Even so, August is looking down the road to ways to enhance and expand the current plans.

"With the Dream Big initiative, we had the opportunity to focus on engineering, so 2020 will be about geoscience. We are just starting the planning process for 2020, but we hope to get something to the schools to celebrate geoscience for Engineering and Geoscience Week next year."

Communications Skills And The Professions

SUBMITTED BY LISA MORETTO FROM RGI LEARNING AND THE CENTER FOR TECHNICAL AND ENGINEERING LEADERSHIP

Lisa Moretto

The most important skill a technical professional has is the ability to communicate. This is what will set you aside from the rest and differentiate one consultant or firm from the others. I say this having spent my career helping engineers, geoscientists and technicians improve how they communicate. But before you consider me biased, note that in 1944, WJ King stated in his book *The Unwritten Laws of Engineering*, that the chief obstacles of the success of individual engineers or of groups of engineers are of a personal and administrative rather than a technical nature." I include geoscientists and technicians here too.

And in 1928: SA Harbarger, in his book *English for Engineers* printed on page 1, chapter 1 "an engineer's greatest asset is his ability to write and speak correctly, elegantly and vigorously. He cannot employ anyone to talk for him….or to prepare his reports…." (I apologize to women; back then they never imagined females in the technical fields.)

So, what is communication? The root comes from the Latin word "communicare" meaning to make common or to share. Communication is defined by the Oxford Dictionary as "the imparting or exchanging of thoughts, opinions and information by speaking, writing, or using some other medium."

I suspect that anyone reading this magazine or who is remotely connected to a technical profession, certainly has ideas, opinions and information. To be a true professional and a valuable team member, subject matter expert, or consultant, you must "make common" and exchange. I consider that skill technical communication.

My degree from an engineering university is in Technical Communication. I had to take engineering courses, yet my engineering friends never had the time or requirement to take communication classes. However, to succeed, the technical professional must effectively communicate every single day. Without this skill, brilliant ideas are lost because they are not shared, or they are lost in an unorganized or cluttered message.

There are books and courses on how to write and speak, but I want to offer you three other aspects of communication that are just as important:

- Listen to what is being said;
- Understand your audience;
- Determine the best medium.

Listening Skills

In his TED Talk *Five Ways to Listen Better*, Julian Treasure states we are losing our ability to listen. The noise around us has made us immune to the conversations. To avoid this, we use earbuds to remove the distraction, which isolates us and further hinders our listening skills. Just like the muscles in our body, we must exercise our listening to improve. Simply practising being quiet or noticing the noises or conversations around us can fine tune our listening.

We can also adapt or flex the way we listen. For example, consider these five types of listening:

- Listening to Learn: Informational;
- Listening to Understand Emotions: Empathetic;
- Listening for Pleasure: Appreciative;
- Listening for Evaluation: Critical;
- Listening to Build Relationship: Rapport.

Different situations and personalities require us to listen differently. Informational and critical listening are required in technical environments but to truly understand your audience (which is our next key skill) you need to learn empathetic and rapport listening. When you exercise empathetic listening, you pay attention to your audience's emotions: frustration, disappointment, excitement. When solving a problem (which often is the scope of work for technical professionals) the best way to succeed is to resolve a pain. You can't just listen to collect facts.

Your ability to listen is an asset to your research phase, your conflict resolution skill and your reputation as a team player.

Understand your audience

Too often technical professionals don't distinguish between need to know and nice to know details and end up overwhelming their audience. Only include what your audience needs to be able to decide, understand, or act. The rest of the facts can be left out. To determine what to include, analyze who you are communicating with:

- What is my purpose for communicating?
- How much does my audience know about this subject?
- What do I expect the audience to do with this information?
- Is this audience technical or non-technical?
- Is there more than one person?
- What questions will my audience have about this topic?

Now all you need to do is make sure you have answered the questions. For example, if you are writing a proposal, I'm confident your audience will ask: What are you going to do? When will you do this? How much will this cost?

Remember, although you are originating the communication, it is all about the audience. If they don't understand your message, the whole effort is wasted.

Determine the best medium

We have several communication tools to choose from but some work better in certain situations. Just because you are comfortable with one doesn't mean it is the best for the situation or for your audience.

Here are some considerations:

Email

- This is the most used tool and I'm not sure we can function without it.
- We can send to multiple people and send large attachments.
- It keeps a history which can be handy if we forgot what was decided.
- Because we read it when we want to, it is easier to manage our time. This also allows us time to think about our response.
- Some messages require voice and facial expressions to be fully understood and we lose that with email.
- Email can be placed in the wrong hands and may cause conflict or hurt feelings.
- There are some facts that you might not want kept as a history and email holds us accountable.

Text Messages

- A text is useful when the message is short and you don't have time or desire for a email or phone call.
- People working in remote locations are more likely to receive a text than an email or call.
- Photos and videos can be quickly sent to help explain conditions.
- Be careful with the auto correct tool because the wrong message could be sent.
- Tone is lost in cryptic text messages and may cause misunderstandings.
- Make sure that the people you are texting are comfortable with this tool; it can be frustrating if the speed varies between parties.

Phone Calls

- If a topic leads to multiple questions and other topics, a phone call is much more efficient.
- Sometimes a message requires tone of voice which the phone allows.
- If building relationships (empathetic listening) a phone call is best.
- People may avoid the phone because a phone call may be unexpected, a person may be caught off guard and not know the answers.
- If not managed well, a conversation can go off topic and take too much time; another reason people avoid this tool.

So, do I think communication is important to technical professionals? Absolutely. A technical person who cannot share or exchange ideas, opinions, and information will end up crunching numbers in the basement. However, a technical person who communicates by listening, understanding the audience and selecting the right medium, will be a valuable team member and be invited into boardrooms.

Because communication is a skill, you can learn the concepts and practice techniques.

Keeping Up With Friends
Social Media In The Professional World

BY MARTIN CHARLTON COMMUNICATIONS

Engineers and geoscientists like situations that they can control. So, it's little wonder that some APEGS professionals are wary of social media which can easily be described as the most chaotic media yet invented.

But as APEGS Executive Director and Registrar Bob McDonald pointed out at last year's annual meeting, the issues surrounding social media are nothing new.

"Essentially, all forms of media – from the earliest cave paintings to the invention of the printing press – are social media to one degree or another. Professionals have always had to be cautious about what they say or write in public in case their words are interpreted as defamatory or unprofessional," McDonald said.

The distinguishing factors of today's online electronic social media, McDonald noted, are their speed and abundance. Reputational damage happens faster through social media and can be much harder to fix.

Yet, despite these risks, no organization in the 21st century can afford to ignore social media. The new APEGS strategic communications plan includes a goal to develop social media channels for the association.

As the association prepares to take this step, members can take comfort in the fact that this is a well-worn path. A number of other engineering and geoscience associations have taken the leap into the social media world.

APEGA

The Association of Professional Engineers and Geoscientists of Alberta took a staged approach to social

media. They began using Twitter and LinkedIn in 2010 but only moved on to Facebook in 2017. The association also occasionally uses YouTube, primarily for election videos. Most recently, they have started an Instagram account but, according to APEGA Assistant Director, Communications Gisela Hippolt-Squair, they have yet to use it much.

"We're hiring a social media specialist this year. That will help us better leverage Instagram and other platforms," Hippolt-Squair says.

The association's content rules to this point have been straight-forward.

"We mainly promote APEGA events, volunteer opportunities and initiatives such as council election, AGM, awards and professional development sessions. Our communications department manages all of our social media, but we work with our other departments for content."

Hippolt-Squair says the channels have met a need that came from members and have been quite popular.

"More and more, our members expect a social media presence and want to communicate with us this way. Our LinkedIn discussion group has always been popular. We have 19,500 members who actively discuss engineering and geoscience. We lightly monitor this group for appropriateness. The goal is for those interested in the professions to have a forum. We don't allow any marketing, sales or recruiting on that channel."

Overall, APEGA has encountered many positives from its expanding menu of social media and few downsides.

"As with all social media, we get the occasional troll, but otherwise engagement has been healthy and productive. But doing social media effectively is labour intensive. That's why we're hiring a social media specialist."

Professional Engineers Ontario

Professional Engineers Ontario also uses social media. It has a presence on Twitter, Facebook, LinkedIn and YouTube.

According to Communications Manager Duff McCutcheon, the association's content is quite matter-of-fact.

"We limit our content to PEO news and updates. Most of it is regulatory in nature," McCutcheon says.

McCutcheon feels the association reaps a number of benefits from social media use.

"The two main benefits are that it's basically a free communications medium, with the only cost being the time to post content. It's also a great tool for establishing two-way communication with our stakeholders. We use social media to inform our followers, listen to what users are talking about, look for trends and engage with our audience on PEO initiatives and engineering regulatory subjects. And it's all in real time."

Even the commonly-cited downsides of social media provide positives, according to McCutcheon.

"Because it's a two-way communications medium, people will sometimes use it to voice their complaints and grievances. However, that's not always a bad thing as it gives us an opportunity to learn more about users' complaints and to publicly address them when necessary. Oftentimes, we can use the opportunity to clear up misconceptions."

ENGINEERS GEOSCIENTISTS New Brunswick
INGÉNIEURS GÉOSCIENTIFIQUES Nouveau-Brunswick

The Association of Professional Engineers and Geoscientists of New Brunswick (APEGNB) moved into social media in 2011 and now uses three channels: Twitter, LinkedIn and Facebook. To effectively reach its audiences, the association uses each channel in a slightly different way.

"I have actually just finished an audit of our public facing channels and as a result, we will be making minor adjustments to our approach and establishing a playbook. This will provide great efficiencies, consistency and enable anyone on the team to leverage social media with confidence," says APEGNB Chief Communications Officer Heather MacLean.

In terms of benefits, MacLean notes that it is critical to think about your audience – who they are and how they like to consume information and where.

"As demographics change, we need to adjust our channels so that we continue to reach our primary audience. In terms of uptake, social media is really another expected channel to receive and share information and we are pleased with our growing engagement."

A Part of Doing Business

A recurrent theme in responses gathered from other associations is that social media is an expectation and a requirement in modern communication, both for associations and for their members.

"It would be hard to fathom organizations who communicate with members or the public not leveraging social media in some capacity in 2019. It really is a course of normal business communications," MacLean says.

The Ron and Jane Graham School: A Pioneer In Professional Communication

BY MARTIN CHARLTON COMMUNICATIONS

The Engineering Management Institute in the US recently published the results of a survey that showed that communications skills are at the top of the list for soft skills employers look for in an engineer. While that may seem obvious, yet every year John Moffatt, associate professor at the Ron and Jane Graham School of Professional Development, notes some resistance from students.

"Most of them don't want to be here. They assumed that, when they went into engineering, they would never have to deal with 'soft studies' people like us again. Some imagined they would never again have to struggle to write a sentence and that they would be able to rely on spell-check for the rest of their careers. Yet, when they start to see the results, they usually come around," Moffatt says.

History

As the name suggests, the school was founded in 2012 at the University of Saskatchewan through the sponsorship of distinguished engineering alumni Ron Graham, P.Eng. of Graham Construction and his wife Jane, who donated $3.27 million to the creation of the school. But the roots of the school go back much further, Moffatt says.

"Our unit got its impetus back in 1998 when D.K. Seaman provided funding for the D.K. Seaman Chair in Technical and Professional Communication. Dr. Jennifer MacLennan was hired as the first (and to date, only) Seaman Chair, and she created GE (General Engineering) 300 course, which subsequently became RCM 300, with a new emphasis on the persuasive and relational dimensions of professional communication practice."

Today, the school's entry-level class (RCM 300: Effective Professional Communication) is a required part of engineering students' studies. Upper-level classes can be taken either as part of a student's humanities electives or as part of the Certificate in Professional Communication.

Building Trust

The upper-level classes are capped at a class size of 25 and that they tend to fill comes as no surprise to Moffatt.

"What our program has been very successful at conveying to students is that their future jobs will not just be about transmitting data. They're establishing their credibility. Your data, math and science are only as good as your ability to convince the audience to trust what you're saying."

"It's a common misconception, even among some experienced engineers, that the audience will have to listen to you just because you're the experts, but that isn't necessarily true. You have to build a relationship with the audience. After all, when you are talking about infrastructure projects that cost millions or even tens of millions of dollars, the audience needs to be completely comfortable that the project is going to suit their needs. The Grahams recognized this was a skill they wanted in the people they hired - professional citizenship."

Educating the Whole Person

The school's courses don't just focus on building audience trust.

"For example, I teach a course in rhetorical editing. Again, you might wonder how you get a bunch of engineering students excited about a course in grammar. Ultimately, it appeals to that most basic instinct in engineers – problem-solving. When you are communicating with different audiences, you are fighting a constant battle with ambiguity. How do you ensure that no one can possibly take a different meaning from what you are saying? By focusing on grammar as a problem-solving tool in the use of language, the students can relate to its importance in their future professional lives."

The school also offers courses in rhetorical leadership.

"How do you develop messages to create and motivate a team? That's obviously something that's very useful in the workplace."

The school has integrated into its program components of the existing Engineering Entrepreneurship Option delivered by the Edwards School of Business.

"Ron Graham has said that the courses in the school should educate the entire person and that's something we take seriously. While we do teach good grammar and spelling, our course goes beyond simply being a 'speak and spell' course."

The results of the school's efforts have been encouraging for everyone involved.

"Anecdotally, students have told us that the courses have helped them get hired faster and that employers have indicated to them that they don't have to train new hires on communications issues like they used to. Employers and professors alike have noted that the professionalism of fourth-year capstone projects has gone way up."

Moving Forward

The Graham School has the distinction of being the first academic unit in Canada to offer these sorts of courses to engineering students.

"Nobody else in Canada, or anywhere else that we know of, is taking this specific approach. Engineering students at U of S are learning that workplace communication occurs across a wide range of professional, social, cultural, and interpersonal contexts. Learning to analyse communication situations and assess the relationship with an audience at any given moment is critical for effective and ethical professional practice," Moffatt says.

The school is, therefore, looking at ways to expand its techniques beyond the University of Saskatchewan campus.

"We're looking at branding the 'Graham School Method' and use that as a launching point to develop courses to train the trainers in collaboration with industry partners"

This may involve expanding the courses. Moffatt is particularly interested in seeing the methods moved out into the workplace.

"We've developed short courses that we can take out to companies and government agencies. We have, for example, developed some modules for the City of Saskatoon. Our main problem, to date, in delivering these modules is manpower – we don't have enough instructors in the school to fill the demand for workplace courses while meeting the needs of our undergraduate students. We're hoping that our 'train the trainers' approach will help alleviate that.

The school is also looking to expand its offerings to post-graduate students by providing communication input for master's and Ph.D. projects. In the long run, the school also hopes to provide more coaching for working professionals coming back to the university for professional development.

"We're looking at improving our offerings in every way we can. We want to raise both the floor and the ceiling".

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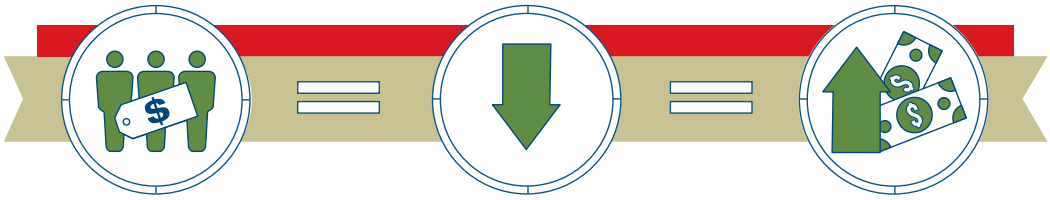

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Member Profile

This month *The Professional Edge* chats with Albert Engel, P.Eng., a semi-retired civil engineer from Regina.

Tell us about your personal and professional background.

I grew up on a farm in southwest Saskatchewan not far from Swift Current. I attended school in Wymark and Swift Current. I studied for three years at the University of Regina during the time when it was still part of the University of Saskatchewan, but ultimately graduated from the U of S in Saskatoon.

Why did you choose to go into engineering?

In high school, I had originally planned to go into chemistry, but my high school teacher and principal at Wymark had an engineering degree and convinced me that engineering would have more job opportunities. That proved to be good advice. I'm not knocking chemistry. I just think there are fewer jobs in the field. I ultimately decided not to become a chemical engineer because of my interests in water conservation.

What was your biggest challenge in college?

I was lucky to have a number of scholarships and support from my parents, so I never had financial challenges. But, coming from a small-town high school, I had never taken calculus so that baffled me when I took it in college. We were also required to take a bit of electrical engineering, but that wasn't my schtick. I never really took to that.

What was your first job after college?

I started working with the Prairie Farm Rehabilitation Administration (PFRA) right after college and stayed with them for 34 years. I know that's abnormal these days when most people work two or three careers in their working lives. Looking back, there were hassles with government work, especially the politics, but I enjoyed my career with PFRA.

What do you feel was your single greatest accomplishment as an engineer?

PFRA periodically seconded staff to the Canadian International Development Agency which led me to assist in the engineering of small dams and irrigation projects in Ethiopia. I took 10 trips there and spent about a year in total in the country.

Ethiopia is relatively stable politically. It is a beautiful country with a nice climate. It has a great but mostly undeveloped tourist potential.

Its infrastructure made great strides while we were there. The people were extraordinarily friendly – not just those we worked with but also people on the street we encountered. By African standards, it is a very safe country. I wouldn't want to walk around at night in the capital Addis Ababa, but during the day I felt perfectly safe.

This is not to say they don't have struggles. After our first trip in 1998, the project was postponed until the 2000s because a war broke out between Ethiopia and Eretria.

The country is rich with history. Ethiopians are very proud of the fact they were the only African country never to have been colonized. It is full of many historic sites, including a place that they contend is the resting place of the Arc of the Covenant.

We were treated so well that my wife Laura joined me on three trips and did some volunteer work there. We've often talked about returning for a vacation.

What are your interests outside of work?

I don't have hobbies! One of the reasons I'm only semi-retired is to keep busy. My wife and I are involved with our family and our church and we enjoy travelling.

I've also travelled through my work with an organization called Engineering Ministries International, in which engineers volunteer to assist with overseas mission work. This has taken me back to Africa to work in places like the Democratic Republic of Congo and Kenya.

Here at home, I continue to do engineering consulting work for various jurisdictions and farmers. This included the engineering design and construction supervision for the Wakamow Valley Authority pedestrian suspension bridge across the Moose Jaw River shown in the picture on page 18.

Have you ever met anyone famous?

I didn't meet them face to face but, when I was working in Ethiopia, the CBC celebrity Rick Mercer and then-federal MP Belinda Stronach toured our project.

What is your favourite vacation spot?

In summer places in southern BC like Fernie and Cranbrook are my favourite and in winter it's Arizona.

What is your favourite book?

I enjoyed Romeo Dallaire's *Shake Hands with the Devil.* It was an eye opener and resonated with my experiences in Africa, even though I was never in a conflict zone. The recurrent turmoil that affects those societies is very sad.

What do you do for professional development?

The continuing work I do in varied civil engineering projects helps me keep on top of things. Recently, I did work that involved the Water Security Agency through which I took a course on the province's new management strategy for drainage. Over the years, I've attended conferences and workshops in my field.

Who had the greatest influence on your life and career?

In terms of life, my parents. They gave me a strong work ethic and instilled in me the importance of a strong faith.

As for my career, I'd say Gerry Wetterstrand, P.Eng. who encouraged me to get involved in international work. He led a number of expeditions I was on starting in the 1980s.

The most recent time I worked with him was in 2007 on a CIDA mission to Afghanistan where we provided engineering input for a dam near Kandahar – a project ultimately taken over by the US Army Corps of Engineers. That was an interesting trip.

When we were in Kabul, the Canadian embassy arranged meetings for us. Once we prepared to go on site, the Canadian military took excellent care of us. They whisked us around everywhere in well guarded armoured vehicles, military airplanes and Blackhawk helicopters. I have a lot of great memories from my work abroad and I owe that to Gerry.

Signed, Sealed, Safe

Saskatchewan's Professional Engineers and Geoscientists enhance our quality of life, meet the challenges of environmental substantiality and protect public safety. Because of their impact on society, the practice of professional engineers and geoscientists is strictly regulated by the Association of Professional Engineers and Geoscientists of Saskatchewan.

Join over 13,000 members in congratulating our newest members – dedicated professionals who have completed a minimum of eight years of university study and work experience to earn the designation of Professional Engineer (P.Eng.), Professional Geoscientist (P.Geo.), Engineering License or Geoscience License.


Bah, Sulayman, P.Eng.


Bahr, Evan, P.Eng., TransCanada


Beaudette, Colby, P.Eng., Dynamo Electric


Berscheid, Brian, P.Eng.


Clowater, James, D.J. P.Eng., McElhanney


Danoczi, Jane, E., Engineering Licensee Saskatchewan Research Council


Darmitzel, Sarah, L., P.Eng., Burns & McDonnell


Drager, Carla, P.Eng.


Glorioso, Gilbert, E., P.Eng.


Jangda, Shakil, S., P.Eng.


Kulshreshtha, Simone, E., P.Eng.


Lopez, Jaytie, C., P.Eng.


Rahman, Md Ziaur, P.Eng.


Shrivastava, Prakhar, P. Eng. Altus Group


Slugoski, Darren, J., P.Geo.


Toews, Kari, Lyn, P.Eng.

SPONSORED BY: Altus Group, Burns & McDonnell, Dynamo Electric, Husky Energy, McElhanney Consulting Services Ltd., Burnside & Associates Limited, RMIS Engineering, Saskatchewan Research Council, Stantec Consulting Ltd., TransCanada Corp.

APEGS proudly introduces its new members to a diverse audience during Engineering & Geoscience Week and in *The Professional Edge*. You are invited to participate in the announcement by submitting your photo when you become a new professional member. APEGS approved over 800 new members in 2018.

Our Newest Members


Best, Christopher, J., P.Eng.


Bilton, Brenda, P.Geo.


Buckler, Brandon, P.Eng.


Chow, Ariele, C.,P.Eng., Stantec


Felix-Korte, Rhea, L, P.Eng.


Gabriel, Mark, G., J., P.Eng,


Gejdos, Dylan, P.Eng.


Gerger, Stephanie, D., P.Eng.


MacKay, Cameron, P.Geo.


Maier, Jennifer, Lynn,P.Eng., RMIS Engineering


Moazamigoodarzi, Nader, P.Eng.


Ojierenem, Joshua, N., P.Eng.


Walker, Kelsey, C., P.Eng., Husky Energy


Walls, James, R., P.Geo., R.J. Burnside & Associates Ltd.


Wlodarczyk, Vaughn, A., P.Eng.


Zimmermann, Travis, R., P.Eng.

ensuring public safety

A P E G S
Association of Professional Engineers & Geoscientists of Saskatchewan

A P E G S

Association of Professional Engineers & Geoscientists of Saskatchewan

89th

Annual Meeting and Professional Development Conference

Working Together, Engaging Communities

May 2 - 4, 2019

Hotel Saskatchewan, Regina Saskatchewan

Event Schedule

Thursday May 2

Welcome Event - Jersey Night
AGT Lounge Mosaic Stadium. . . . . 6:00 - 10:00 pm
Wear your favourite sports jersey.

Friday May 3

Buffet Breakfast . . . . . 7:30 - 9:00 am

Plenary Session
Keynote: Deanna Burgart . . . . . 8:45 - 9:45 am

Professional Development Streams
Morning . . . . . 10:00 - 12:15 pm

Professional Development Luncheon
Keynote: Christopher Sands . . . . . 12:30 - 2:15 pm

Professional Development Streams
Afternoon . . . . . 2:30 - 4:45 pm

Past Presidents / Council Meeting. . . . . 2:30 pm
President's Reception. . . . . 5:00 pm

Saturday May 4

Buffet Breakfast . . . . . 7:30 - 9:00 am

Annual Meeting (Location: Ramada Plaza)
Registration . . . . . 8:30 - 9:00 am
Business Meeting . . . . . 9:00 am
Kids Camp (Ages 4-6) . . . . . 8:30 am - 4:30 pm
Youth Science Day (Ages 7-140 . . 8:30 am - 4:30 pm
Partners Program . . . . . 10:30 am - 2:30 pm

Recognition Luncheon . . . . . 12:30 - 2:30 pm
Committee Meetings . . . . . 2:30 - 4:30 pm

Awards Banquet
Reception. . . . . 6:00 - 7:00 pm
Banquet . . . . . 7:00 pm

Professional Development Plenary Keynote:

Deanna Burgart

Friday May 3, 2019, 8:45 am - 9:45 am

Self-proclaimed 'Indigeneer', Deanna Burgart dedicates her career to combining engineering principles and commitments, with an Indigenous respect for Mother Earth, to find solutions to today's challenges.

Deanna is passionate about diversity, inclusion and sustainability. She is a highly sought-after expert in uniting diverse communities, through understanding each other and identifying common goals. Her contributions have garnered her many acknowledgements, including the 2018 American Indian Science and Engineering Society (AISES) Blazing Flame Award.

Professional Development Luncheon Keynote:

Christopher Sands

Friday May 3, 2019, 12:30 - 2:15 pm

Christopher Sands is a Senior Research Professor and Director of the Center for Canadian Studies at the Paul H. Nitze School of Advanced International Studies (SAIS), a graduate division of Johns Hopkins University. Professor Sands teaches courses on Federalism in North America and Europe and Middle Power Diplomacy and an annual Policy Consulting Practicum.

Professional Development Day

Friday May 3, 2019

7:30 - 9:00 am	**Buffet Breakfast** - Regency Ballroom 8:30 - 8:45 Welcome and Opening Remarks			
8:45 - 9:45 am	**Plenary Session Key Note - Deanna Burgart**			
	TRACK 1 **TECHNOLOGY** Saskatchewan Suite	**TRACK 2** **ENVIRONMENT** Wascana Room	**TRACK 3** **WORKING TOGETHER** Victoria Room	**TRACK 4** **APEGS** Oak Room
10:00 - 11:00 am	**Maintenance and Engineering of the CT-114 Tutor Aircraft** Captain K.S.Z. Pilatzke	**Why Price Carbon?** Brett Dolter	**Truth and Recociliation** Leah McDonald Elder Larry Oaks	**Continuing Professional Development** Jolene Arthur Luke Brisebois
11:15 - 12:15 pm	**SaskPower Grid Modernization** Grant Crawford	**ISO Carbon Reporting**	**The Art of Dialogue Having Fun Networking** Lisa Moretto	**Professional Ethics** Shawna Argue
12:30 - 2:15 pm	**Professional Development Luncheon** - Regency Ballroom Key Note - Christopher Sands			
2:30 - 3:30 pm	**5G Networks** Jeremy Gabel	**The International CCS Knowledge Centre** Corwyn Bruce	**Leadership and Culture** Kellie Garrett	**Professional Ethics** Shawna Argue
3:45 - 4:45 pm	**Electronic Signatures** Fred Mazzarello Marc St-Jacques	**Scissors Creek: The First Potash Shaft Successfully Completed in Saskatchewan since 1979** Arnfinn Prugger	**Inclusive Work Environments Exploring Bias** Kyla Christiansen	**Competency Based Assessment** Tina Maki
5:00 pm	**President's Reception** - Regency Ballroom and Conference Level			

A P E G S
Association of Professional Engineers & Geoscientists of Saskatchewan

Business Meeting

Saturday May 4, 2019

Registration: 8:30 - 9:00 am.
Business Meeting: 9:00 am.
Ramada Plaza, 1818 Victoria Avenue
Dress - Business

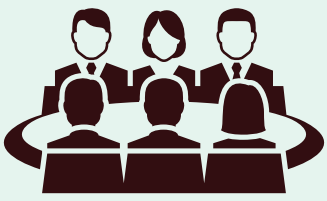
The Engineering and Geoscience Professions Act and Bylaws require that the annual meeting of the Association be held in the first six months of the year at a place in Saskatchewan determined by Council. The 89th Annual Meeting of the Association will be called to order at 9:00 am Saturday May 4, 2019.

The meeting will be held in:
The Oak Room Ramada Plaza,
1818 Victoria Avenue

Members must register between 8:30 and 9:00 am to obtain a voting card.

The agenda for the meeting includes, but is not limited to:

- Minutes from the 2018 Annual Meeting
- Business arising out of the minutes
- Reports from committees
- Audited financial reports
- New business
- Bylaw amendments
- Report of the scrutineers



Awards Banquet

Saturday May 4, 2019

$50/person Regency Ballroom
Reception 6:00 pm **Banquet** 7:00 pm

Dress - Gentleman: Dark Suit or Black Tie
Ladies: Semi-Formal or Formal Evening Wear

APEGS members have played a lead role in public safety and Saskatchewan's economic growth. Professional engineers and geoscientists are making contributions in every sector for the benefit of society, for the protection of the public and for the protection of the environment.

Saturday night we celebrate members whose outstanding contributions have earned them the recognition and respect of their peers. In the Friend of The Professions category we honour the exceptional contributions of non-members to our professions.

Outstanding Achievement Award

Brian Eckel Distinguished Service Award

McCannel Award

Environmental Excellence Award

Exceptional Project Award

Promising Member Award

Friend of the Professions Award

Notes from APEGS Council

The APEGS Council met February 7 - 8, 2019 in Regina. Eighteen of 19 Councillors were present. Ria Clark, Administrative Assistant with APEGS attended as a guest. Council will meet next April 4 - 5, 2019 in Saskatoon.

Council received the following presentations and information items:

- The Executive Director and Registrar lead discussion on the Association's historic cash flows. Background information provided historical cash flows, and both budget deficits and surpluses were reviewed from the years 1985 to 2017. The session provided insight on how the model is used in setting fee increases.
- Activity updates were provided from the constituent society liaisons, the ACEC-SK liaison, the 30 by 30 Task Group liaison and the Sponsorship Task Group liaison.
- The Executive Director and Registrar provided council with an update on staffing.
- The President-Elect provided an update on the Dream Big communications initiative, to be launched during Engineering and Geoscience Week in Saskatchewan.
- The Executive Director and Registrar provided a presentation on the importance of maintaining the privilege of self-regulation. The presentation reinforced the importance of regulating within the Association's objects and the public interest.
- The Director of Special projects updated council on the new member database. The update noted the significant staff time devoted to the project.
- The APEGS Directors to Engineers Canada and Geoscientists Canada reported on the activities at the national organizations.

Council passed motions as follows:

- Approving the updated privacy policy GEN2.0. Staff and volunteers deal with a considerable amount of confidential information and the updated policy will put in place agreements to maintain confidentiality.
- Appointing Rick Kullman, P.Eng., FEC, FGC (Hon.) as the APEGS representative on the University of Regina Senate for a three year term.
- Approving The Guideline on Assessing Highly Qualified Geoscientists-In-Training.
- Approving the updated professional practice exam policy, Policy PPE2.0.
- Appointing Ryan MacGillivray, P.Eng. as the Chair of the Professional Practice Exam Committee for a two year term, Rick Kullman, P.Eng. FEC, FGC (Hon.) as the Chair of the License Admissions Committee for a two year term and Sebastian Walrond, P.Eng. as the Chair of the Continuing Professional Development Compliance Committee for a two-year term.

Approving Life Membership for the following members:

Albion, Stuart T., P.Eng.
Bellows, Derrick E., P.Eng., FEC
Berglof, Bruce K., P.Eng.
Bialek, Rene F., P.Eng.
Bonner, Kevin R., P.Eng.
Boyko, Alexander J., P.Eng.
Callahan, Gordon E., P.Eng.
Carriere, Roger G., P.Eng.
Churko, Bernard M., P.Eng.
Crossley, N. Graeme, P.Eng.
Croteau, Denis R., P.Eng.
Cruz, Godofredo G., P.Eng.
Downes, Kieran M.J., P.Geo.
Driedger, Henry D., P.Eng.
Eichendorf, Roy E., P.Eng.
Fussell, Joh B., P.Eng.
Gould, Charles I., P.Eng.
Hanson, Keith J., P.Eng.
Helfrich, Jerome M., P.Eng., FEC
Henderson, George T., P.Eng.
Hundeby, David R., P.Eng.
Johnson, Russell F., P.Eng.
Kent, Sukhdeep, P.Eng.
Kullman, Rick, P.Eng., FEC, FGC(Hon)
Leckie, Dale A., P.Geo.
Leedham, Glenn E., P.Eng.
Leetmaa, Mart, P.Eng.
Lefebvre, Ronald R., P.Eng.
MacDonald, Colin C., P.Eng.
McKay, Donald G., P.Eng.
McKee, Wilfred C., P.Eng.,
Mepham, Michael P., P.Eng.
Miller, Dennis J., Engineering Licensee
Miller, John A.G., P.Eng.
Nagel, Dennis D., P.Eng.
Omoth, Walter C., P.Eng.
Page, Charles E., P.Geo.
Page, Terry E., P.Eng.
Parker, Robert C., P.Eng.
Partington, Neale E., P.Eng.
Patching, Richard G., P.Eng.
Pelz, Donald T., P.Geo.
Pentland, Raymond S., P.Eng., FEC
Pollock, William L., P.Eng.
Price, David P., P.Geo.
Richards, David R., P.Eng.
Siu, Stephen K-C, P.Eng.
Soveran, Douglas W., P.Eng.
Sparks, Dr. Gordon A., P.Eng.
Spooner, Anthony J.m P.Geo,.
Swagor, Nicolas S., P.Geo.
Thoma, Carl H., P.Eng.
Vaderhorst, Richard HI, P.Eng., P.Geo.
Webster, R. David, P.Eng.
West, Albert F., P.Eng.
Wilhelm, Ralph-Rainer W., P.Eng.
Wong, Jude C-C., P.Eng.
Wright, Lyle M., P.Eng.
Yaremy, Donald J., P.Eng.
Yea, Howard, P.Eng.

- Approving policy documents Awards 1.0 and Awards 2.0, which clarify the eligibility of volunteers and staff to be nominated for an APEGS Award or receive a Member Grant.
- Directing the Awards Committee to review the award criteria with respect to the residency requirement for APEGS Award recipients.
- Appointing Jody Derkach, P.Geo. Chair of the K-12 Committee until July 31, 2019.
- Appointing Brian AuCoin, P.Eng. Chair of the Discipline Committee for a two year term.
- Approving the revised policy HR5.0 Respectful Workplace Policy.

Council noted and received the following reports:

- Registrar's reports for December, 2018.
- The report on compliance activities for November 1 - December 31, 2018.
- The unaudited financial statements for October and November 2018.
- Executive Committee minutes, Board minutes and the reports from the committees and task groups, Abridged Investigation Committee minutes and Discipline Committee minutes.

2019 Council Election

The individuals listed below have agreed to stand for election in the offices indicated. Group/District Councilors serve a three-year term. The term for members of the executive is one year.

2019 Election Candidates as of February 15, 2019

The Nominating Committee has nominated the following persons for election:

EXECUTIVE

President: (one-year term)

Terry Fonstad, P.Eng., FEC. . . . . Clavet

President-Elect: (one-year term)

Andrew Lockwood, P.Eng., FEC . . . . . Saskatoon

Vice-President: (one-year term)

Ben Boots, P.Eng.** . . . . . Moose Jaw

Kristen Darr, P.Geo. . . . . Deer Valley

Rob Stables, P.Eng., FEC** . . . . . Weyburn

COUNCILORS

Group I (Civil) (three-year term)

Nicholas Kaminski, P.Eng.** . . . . . Saskatoon

Terry Werbovetski, P.Eng., FEC**. . . . . Saskatoon

Group III (Electrical and Engineering Physics) (three-year term)

Leo Niekamp, P.Eng.*. . . . . Saskatoon

Kaylee Puchala, P.Eng. . . . . Regina

Group IV (Geological, Mining, Petroleum,Geophysics and Geoscience (three-year term)

Erin Moss Tressel, P.Eng., P.Geo. . . . . Saskatoon

Monica Tochor, P.Geo.. . . . . Esterhazy

Group VII (Environmental) (three-year term)

Cameron McNaughton, P.Eng. . . . . Saskatoon

Danae Lemieux, P.Eng. . . . . Regina

*denotes incumbent

** denotes nominated by the members

Lisa Moretto (left centre front) presents the Sasaktchewan Gold and Silver Certificate recipients from CTEL 2019

CTEL Wrap Up

The APEGS Professional Development Committee was pleased to offer a second round of CTEL™ (The Centre for Technical and Engineering Leadership) courses on February 28 and March 1, 2019 at the DoubleTree Hotel in Regina.

The courses offered during this two day event included Understanding Personality Types, Building Successful Teams, Managing Conflict and Time Management.

Participants enrolled in the CTEL program could attend individual sessions or could take all four courses to earn a Silver Certificate. Eighteen people earned their Silver Certificate. Two participants with previous CTEL™ experience earned their Gold Certificate for having attended eight courses.

Because of the positive reviews received from the participants, APEGS will be offering the next level of the CTEL program later this year. Stay tuned for more details.

CPD Tip:

Attending Lunch & Learns counts as Informal Activity

CPD

Announcing the Winner Of The iPad Draw

The winner is....

David Kelly, P.Eng., FEC

Congratulations and thank you to all our members and licensees who used APEGS Central for renewals.

All members and licensees who renewed for 2019 by December 31 using APEGS Central, (the new and improved online profile), were eligible for a chance to win a new ipad.

In APEGS Central, you can view and manage the following and more:

- Member information
- Applications
- Subscriptions (communication types)
- Pay fees
- CPD reporting
- Volunteering and Committees

All of your APEGS affairs in one place.

APEGS Central (the new online profile)

Ethics Module Now Live!

APEGS is proud to announce that the

Online Ethics Module is now live.

This module is free for all APEGS members. Obtain your annual ethics credit by taking the Ethics Module.

For more information and to access the module, please visit **www.apegs.ca**

Big Success!

From grooving to the movie's cool and catchy tunes like "On Top of the World" while watching the Falkirk Wheel work or sitting spellbound in silence when a father in Haiti talks of his eight children losing their mother to a swift river because there was no bridge, students and teachers around Saskatchewan were enthralled with *Dream Big: Engineering Our World*.

100 schools
150 volunteers
23,000 students

Volunteers' Views

"It was a great success—very inspirational. I'm very proud to be part of such a great profession and association."

Serena Ward, P.Eng. - Regina

"We had a packed house. I got a very enthusiastic cheer after the show when I asked if the students liked the movie!"

Bob Anthony, P.Eng. - North Battleford

"The kids were very engaged and loved the movie! The school was accommodating and welcoming. It was a great experience!"

Anjaly Baby, Engineer-In-Training - Elrose

"Thanks for the opportunity to be a part of showing for high school students. I thoroughly enjoyed it!"

Dustin Unger, Engineer-In-Training - Regina

"I liked how engineers came together from different countries to help communities in need."
Isabella Ash, Grade 5
St. Gabriel School, Regina

"Taylor Sudak was so excited when I presented him the Lego prize."
Tim Kempton, Teacher
Langenburg Central School

School Buzz

"What a wonderful experience! Our students and staff loved it!"

Jillian Melnyk, Teacher
St. Edward School, Saskatoon

"The volunteers are great role models and deserve a huge thank you!"

Chris Buzinski, Teacher
Bethlehem Catholic High School, Saskatoon

"The kids were so engaged! We appreciate the volunteers sharing their enthusiasm for engineering and inspiring students to "Dream Big."

Lisa Frei, Principal
École W.S. Hawrylak School, Regina

"Our volunteer was fantastic! The kids had fun and we're getting great feedback from parents."

Steve McAllister, Principal
Montessori School of Regina

Kai Li, P.Eng (top, black jacket) and Kent Gauthier, school principal (bottom, right edge) introduce Dream Big to over 100 grade 6-8 students at St. Kateri Tekakwitha School photos in Saskatoon.

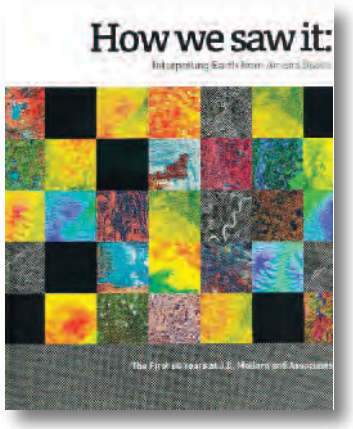
Book Review

REVIEWED BY DOUG VANDINE, P.ENG, .PGEO (BC), FEC, FGC

How we saw it:

Interpreting Earth from Air and Space; The First 60 Years at J.D. Mollard and Associates

BY EDWARD WILLETT



In February 1956, at the age of 31, J.D. (Jack) Mollard started his namesake engineering and geology consulting company in Regina. Jack passed away in September 2017. To celebrate 60 successful years in business, the company started preparing How We Saw It in 2016. Unfortunately, Jack did not live to see the book published.

The initial chapters are about Jack and the early years of J.D. Mollard and Associates (JDMA). The book tells of his early years growing up during the depression on a farm near Watrous, his school years, his graduate work in the United States and his early work with the Prairie Farm Rehabilitation Administration.

Jack Mollard, P.Eng., P.Geo.

In the late 1940s and early 1950s, Jack became skilled in stereoscopic air photo interpretation, which was relatively new at the time.

Through his company, he introduced this skill to Canada and to a wide variety of engineering and geological projects.

The book explores how Jack and his colleagues applied their knowledge and experience to terrain analysis, water resources, linear routing studies and aggregate exploration, with examples of projects to demonstrate their skills and technologies. The last chapter further describes the new technologies adopted by JDMA: satellite imagery, geophysical surveys, ground-penetrating radar, GIS, 3-D modelling, LiDAR, and UAVs (drones).

The book is written by Edward Willet (the author of *APEGS's History of Engineering and Geoscience in Saskatchewan*) and benefited from contributions by JDMA staff. The book was professionally designed and produced by Catharine Bradbury.

I thoroughly enjoyed reading *How we saw it*. It would be an enjoyable read for anyone interested in the history of the geotechnical professional in Canada or why and how JDMA has been so successful (and will continue to be successful). It is available from J.D. Mollard and Associates (2010) Limited, 1720-2002 Victoria Ave., Regina, SK, S4P 0R7 (admin@jdmollard.com).

Doug VanDine is the principal of VanDine Geological Engineering Limited, Victoria, BC.

News Beyond Our Borders

New BC legislation for Engineering Geoscience

Engineers and Geoscientists BC - On November 27, 2018, the *Professional Governance Act* received Royal Assent in the BC Legislature and became law.

The Act represents the culmination of the government's Professional Reliance Review, which examined the current legislation governing qualified professionals and the role their professional associations play in upholding the public interest.

In particular, the new Act consolidates government oversight of the professions of engineering and geoscience, among others, under a new Office of the Superintendent of Professional Governance.

This Office will set consistent governance standards, including common ethical principles, increased public representation on Councils, enabling the regulation of firms and providing whistleblower protection.

The Act suggests that before any engineer or geoscientist takes on any project, they would need to file a declaration of competence and conflict of interest with the regulator.

Engineers and Geoscientists BC has significant concerns with these provisions, their risks and potential for unintended consequences. The association is engaging with government and other stakeholders to articulate its concerns.

Canada still go-to country for robotic space arm

APEGA - The U.S.-led Lunar Gateway – an international space station planned for launch in 2024 to orbit the moon – could be equipped with Canadian technology.

NASA has asked Canada to contribute a new Canadarm, but this version would differ from its predecessors by relying on artificial intelligence instead of humans to guide its movements. If the Canadian government decides to invest, this would be the third Canadarm in the NASA space program.

The first debuted in 1981 and flew on 90 space shuttle missions before its retirement in 2011. Canadarm2 was installed on the International Space Station in 2001, where it helped assemble the orbiting laboratory. The device continues being used there to perform station maintenance, move supplies and equipment and help dock visiting vehicles.

Since the company that designed and built Canadarm2, Maxar Technologies (formerly MDA) is likely to get the contract for Canadarm3, the Canadian Space Agency recently commissioned the company to conduct preliminary studies on how the new robotic system might work.

The AI functionality would add a new level of sophistication to Canadarm. As the federal government mulls over the project, the Canadian aerospace industry and Maxar Technologies are running a public awareness campaign called #dontletgocanada. They want Canada to commit before the opportunity is grabbed by another space agency.

OIQ out from "probation"

OIQ - On February 20, 2019, the Québec government lifted the trusteeship placed on the Ordre des ingénieurs du Québec (OIQ) on the basis of the progress on the performance indicators put forward by the government.

Le Comité de mise sous administration, which reported quarterly to the Office des professions du Québec, believes that, with a new culture of efficiency and collaboration in place and improvements in the application of its protection of the public, the OIQ is on the right track.

The Minister of Justice, Attorney General of Quebec and Minister responsible for the administration of professional legislation Sonia LeBel also requires the Office des professions du Québec to send her a report next year documenting the evolution of the performance indicators.

"The significant progress made by the Ordre des ingénieurs du Québec over the past two years in terms of

governance allows us to believe in a sustainable recovery of the organization. We noted a reduction in the trustee's investigation times, an increase in the rate of professional inspections, as well as a change on the management team and the financial recovery of the Ordre. It is reasonable to believe that the public protection mission will now be fulfilled," LeBel said.

Europe developing standards for Hyperloops

IEEE Spectrum - Hyperloops is a futuristic idea whose fame emerged from the enthusiasm of SpaceX CEO Elon Musk.

The concept involves building an airless tube where a pod can carry people or cargo at near supersonic speeds. But regulatory realities have brought hyperloops down to Earth – a necessary step for any new transport technology.

The European research community, rail companies and regulators are trying to establish standards for fitting evacuated tubes into existing long-distance rail networks before each company and country adopts its own approach, as they did with rail more than a century ago. Spain and France, for example, which neighbour each other and are both members of the European Union, have different rail widths, voltage standards and operating rules.

"Nobody thought the countries that would form the European Union would connect their rail networks in the future," said David Villalmanzo of the International Union of Railways. "So hyperloop startups should be thinking about that now, by way of some European framework, to discuss standardization."

The tension between agreeing on rules and promoting innovation is very much present in these early days for hyperloops. Companies can keep an eye on how the technology – and the standards – evolve while they decide which hyperloop train to catch.

Electric container ships are stuck on the horizon

IEEE Spectrum - Just about everything you wear or use around the house once sat in steel boxes on ships whose diesel engines propel them from Asia, emitting particulates and carbon dioxide.

Why not make electric container ships? Actually, the first one should begin operations this year: The Yara Birkeland, built by Marin Teknikk in Norway is not only the world's first electric-powered, zero-emissions container ship but also the first autonomous commercial vessel.

Most large container ships today carry roughly 18,000 containers and journey at a slow but fuel-saving crawl of 16 knots (for example, a trip from Hong Kong to Hamburg takes 31 days).

The Yara Birkeland will carry just 120 containers, its service speed will be six knots and its longest intended operation

will be 30 nautical miles – between Herøya and Larvik, in Norway. Today's state-of-the-art diesel container vessels thus carry 150 times as many boxes over distances 400 times as long at speeds three to four times as fast as the pioneering electric ship can handle.

To match the speed and distance of diesel ships, an electric ship would need to be loaded with 100,000 metric tons of today's best commercial Li-ion batteries, making up about 40 per cent of the maximum cargo capacity, an economically ruinous proposition.

Mining the moon ready to lift off by 2025

Mining.com - European scientists have announced plans to start mining the moon as early as 2025, though what they'll be extracting is neither gold nor diamonds, but waste-free nuclear energy thought to be worth trillions of dollars.

The goal is to place a lander on the lunar surface to mine and process the lunar surface for water, oxygen, metals and an isotope called helium-3, which may prove useful for fueling future fusion reactors.

Europe isn't the only one getting on board with the lunar mining train. Both India and China have floated ideas about extracting Helium-3 from the Earth's natural satellite. Beijing has already landed on the moon twice in the 21st century, with more missions to follow.

There are an estimated one million tonnes of helium-3 in the moon, scientists estimate only 25 per cent of that could be brought to Earth. But that's enough to meet the world's current energy demands for at least two and maybe as many as five, centuries, said the expert, who estimates that helium-3 is worth almost $5 billion a tonne.

Canada is also eying the moon. Last year, Northern Ontario-based Deltion Innovations partnered with Moon Express, the first American private space exploration firm to have been granted government permission to travel beyond Earth's orbit, on future opportunities in outer space.

News From The Field

Saskatoon engineer named to the Order of Canada

CBC News - A Saskatoon engineer who was a key driver in energy efficiency and conservation in homes has been made a member of the Order of Canada. The Order of Canada is one of our country's highest civilian honours.

Harold Orr, P.Eng. was part of a team that put together the Saskatchewan Conservation House project in 1977 during an acute energy crisis. The team from the Saskatchewan Research Council was tasked with building a solar house that could withstand Saskatchewan's cold winters and hot summers.

The house in Regina was one of the first buildings to combine airtightness, super insulation and a heat recovery system. That house served as a model and led to national energy conservation protocols for Canadian buildings. The building techniques have now been adopted all over the world.

Saskatoon children's museum changes name

CBC News - Saskatoon's Children's Discovery Museum has undergone a name change prior to it reopening in the Mendel Building.

Now known as the Nutrien Wonderhub. Executive director Amanda McReynolds-Doran said the new name captures what visitors will experience when they visit.

"They are really going to get back in touch with that child-like wonder," McReynolds-Doran said.

APEGS has been a significant sponsor and supporter of the project from the outset. The museum combines play with education. It will showcase art, science, technology and Saskatchewan culture through hands-on exhibits, programs and community outreach. It's the only children's museum in the province.

Work on the museum is about 80 per cent complete. McReynolds-Doran said she expects it to open in late spring.

Regina highlights gender gap in women in science

CJME - Roughly 90 teenage girls from Regina's Miller High School got a surge of inspiration from women in science, technology, engineering and mathematics (STEM).

A panel was held at the Saskatchewan Science Centre to mark the International Day for Women and Girls in Science, which brings to light the gender gap worldwide in STEM careers.

The United Nations' latest research shows less than 30 per cent of researchers globally are women. When it comes to female enrollment in post-secondary education in STEM-related fields, statistics are particularly low in information and communications technology (three per cent), natural science, math and statistics (five per cent) and in engineering, manufacturing and construction (eight per cent).

When panelist and chemical engineer Tara Zrymiak, P.Eng., FEC convocated from university in 1985, she remembers being one of three women in her class.

Even though the number of women enrolling in post-secondary STEM-related fields is gradually increasing, not much has changed with regards to the ingrained sexism.

"The problems are there and the problems are real," Zrymiak said, adding oftentimes it comes in the form of off-hand comments."

"The people saying them don't even realize what they're saying and they don't realize that what they're saying could offend. If you're trying to tackle that, then it's hard when people don't know it's even there."

She said the best thing women experiencing sexism in the workplace can do is communicate how they're feeling.

Zrymiak said she hopes they took away from the panel that they have the power to change the world.

"Taking science in high school is a great start, but they can dream beyond that and use it to make society be better," she said.

Engineer among new City of Saskatoon leadership

Saskatoon StarPhoenix - Longtime City of Saskatoon traffic engineer Angela Gardiner, P.Eng. has been named the first leader of a new city hall department.

Gardiner was appointed general manager of the new transportation and construction department.

Her previous permanent post at the city had been director of transportation.

Gardiner began working for the city as a traffic engineer in 2003 after graduating with a master's degree from the College of Engineering at the University of Saskatchewan.

Moose Jaw ponders engineering help for moose battle

Global News - As far as diplomatic missions go, the international moose summit is one of the more unusual ones. But for the people of Moose Jaw, this is serious business.

The iconic "Mac the Moose" was dethroned as the world's largest moose four years ago by a rival sculpture in a small Norway municipality - and the Prairies want the crown back.

"We are having an engineer look at Mac," Moose Jaw Mayor Fraser Tolmie said. "We have to look at his lifespan and make sure what we do is feasible and structurally sound."

The city estimated the engineering work would cost $50,000. A GoFundMe campaign has to date raised roughly $14,000. Moosehead Breweries also donated $25,000 to the campaign.

After weeks of tongue-in-cheek trash talk, Linda Henriksen, the deputy mayor of Stor-Elvdal, Norway, landed in the Friendly City to meet Mac and the locals for herself.

Norway's sculpture stands a mere thirty centimetres taller than Mac.

If that happens, Henriksen says they'll concede defeat and they're fine with that.

"Of course, we would like to have the biggest moose, but there's nothing we can do with our moose as it is a piece of art," she admitted. "We're friendly people and we just want to show the world we are actually happy if Mac becomes the biggest moose."

As a compromise, Tolmie is willing to admit Norway's is better looking than its 30-year-old counterpart.

UNIVERSITIES AND RESEARCH

DOT put through its paces in Arizona fields

Western Producer - DOT is a Saskatchewan-built robotic platform designed to bring autonomous farming to broad acre grain production and Connect is the newly formed company that builds DOT-ready implements, including a sprayer and fertilizer coulter attachment. DOT and Connect have shifted staff to Arizona for the winter to continue research into robotic farming and to prepare to autonomously farm on a broad acre scale this year.

Rick Pattison, president of Pattison Liquid Systems and the newly formed Connect, said the company conducted tests on DOT and the Connect 120-foot sprayer attachment in Arizona from January to March.

"We will have engineers going back and forth through the three months and we'll have people here, both industry people and farmers, who will be coming to see DOT run in sunny Arizona," Pattison said.

Pedro Andrade, an associate professor and a precision ag specialist at the University of Arizona who has worked on navigation systems since the early 2000s, said he's excited to be working with DOT and Connect.

"We are now seeing a new trend moving towards autonomous platforms. I'm an ag engineer myself, I've seen many small platforms for very specialized operations and I think that is great technology," Andrade said.

Nuke centre gets reno funds

L to R: USask VP Research Karen Chad, Canada's Public Safety and Emergency Preparedness

Global News - A facility for nuclear innovation at the University of Saskatchewan is receiving a funding boost from the federal and provincial governments. Renovations at the Saskatchewan Centre for Cyclotron Sciences (SCCS) will create specialized labs for researchers working on new drug treatments using medical isotopes.

The Sylvia Fedoruk Canadian Centre for Nuclear Innovation (Fedoruk Centre) operates the SCCS, a scientific facility for conducting work with nuclear imaging technologies in the treatment of cancers, antibiotic-resistant bacteria and infectious diseases.

The Fedoruk Centre is getting $2.2 million to renovate and equip its innovation wing of the Saskatchewan Centre for Cyclotron Sciences. The new wing is expected to create at least 50 new jobs and attract around $500,000 worth of business in research and development by 2021.

It will house specialized laboratories which will allow researchers to develop new drugs containing medical

isotopes, used to detect and treat cancers and other diseases.

Innovation Saskatchewan is providing $800,000 to support the renovation and equipping of vacant space at the SCCS Innovation Wing.

Provincial government officials said the funding will also support a new imaging lab – the first of its kind in Canada – for studying plants and soil bacteria to improve crop productivity.

Officials said much of the equipment is expected to be in place by spring 2019. The equipment is expected to be commissioned, calibrated and in service by spring 2020.

Located on the campus of the University of Saskatchewan, SCCS supplies radiopharmaceuticals to Saskatoon's Royal University Hospital for the diagnosis and treatment of cancer by nuclear imaging.

ENVIRONMENT

Sask. passes gas regs

Regina Leader-Post - The provincial government has enacted regulations to rein in emissions of methane, a greenhouse gas that traps more heat than carbon dioxide.

The regulations put into action a previously announced Methane Action Plan.

The province says the measures will reduce emissions by 4.5 million tonnes. They address emissions from venting and flaring in Saskatchewan's upstream oil and gas sector and include annual penalties for businesses that fail to comply.

In a press release, the province asserts that the regulations are even stronger than blanket regulations from the federal government.

The Canadian Association of Petroleum Producers expressed its support for the regulations, according to the release.

The province's Methane Action Plan is part of its Prairie Resilience model for addressing climate change, which relies largely upon regulation and reporting requirements aimed at making Saskatchewan better able to adjust to the effects of climate change.

ENERGY

Feds, province reach coal agreement

Global News - The federal government and the government of Saskatchewan have reached an equivalency agreement for carbon dioxide emissions from the province's coal-fired power fleet.

In short, the agreement allows coal power plants like Boundary Dam 4 and 5 to continue operating until 2021 and 2024 respectively. Without the agreement, the Estevan-based power plants would have to shut down at the end of 2019.

Under this agreement, Estevan's Shand Power Station would have to shut down in 2030 instead of its original shutdown date, 2042. If the facility receives a carbon-capture and storage (CCS) retrofit it could continue operating past 2030.

"Our urge to the federal government would be to be our partner, and help us look at ways we can continue to use coal with CCS beyond 2030 and provide some certainty for those communities, so that's our intent now," Saskatchewan Environment Minister Dustin Duncan said.

Boundary Dam 3 will be able to keep operating past 2030 because it has CCS. A decision on whether or not to retrofit Shand with the technology is not expected for another four or five years.

In addition to timelines, there are also emission targets built into the equivalency agreement.

Saskatchewan has agreed to meet a commitment to have at least 40 per cent of the province's electricity generation capacity be from non-emitting energy sources by 2030, by achieving escalating, specified targets.

Drilling quiet in Saskatchewan this year

Estevan Mercury - Saskatchewan's active drilling rig count usually hits a crescendo in the second half of February, but it wasn't a very loud one this year.

On February 27, the Rig Locator (riglocator.ca) listed 49 active rigs in Saskatchewan, down two from a few days earlier.

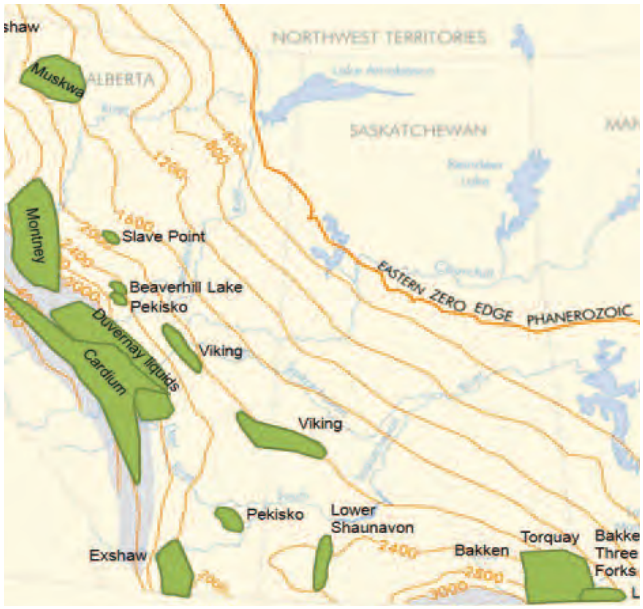
What has usually been the busiest month of the year for drilling activity in Saskatchewan has topped out at half, or less, the level of what it used to be during the boom years. For example, in 2017 there were 72 rigs working at the same time of year.

This is a reflection of the rest of the country, as drilling numbers in Alberta and British Columbia are also markedly down.

In Alberta, the rig count was 145. In 2017, for the same week, it was 226. British Columbia had just 16 rigs working compared to 34 in 2017.

In Saskatchewan, there were 18 oil companies drilling, using 15 different contractors. As usual, Crescent Point Energy Corp. led the nation, with 17 active drilling rigs. All were in Saskatchewan.

Sask. announces $300K for Viking tight oil research



Western Canada Sedimentary Basin and location of tight oil land activity and drilling

JWN News - The Petroleum Technology Research Centre (PTRC) is providing $300,000 in funding to the Saskatchewan Research Council (SRC) for research to overcome challenging geological features of the Viking tight oil play.

The research has been ongoing for a number of years but is entering a new phase with additional industry partners, PTRC said.

Located in west-central Saskatchewan, the Viking is one of the largest oil plays in North America with an estimated three billion barrels of light, sweet crude in place, but the relative shallowness of the resource limits the application of enhanced oil recovery technologies.

Wells in the Viking often produce no more than 5-15 per cent of the oil in place and production has been on the decline since 2012, according to PTRC. The number of wells drilled in the area, however, continues to go up because of the poor recovery rates.

The program will use modeling and imaging technologies for improved field characterization including a newly acquired industrial scale CT scanner that is housed at SRC's energy office in Regina.

Government to hike fees for Crown land leases

Saskatoon StarPhoenix - The Saskatchewan government is dramatically increasing the lease fees paid by oil and gas producers operating wells on Crown land, but insists the change was not motivated by a need for extra cash to balance the budget.

The province says it expects to rake in about $25.7 million in surface lease fees next year, up 82 per cent from the $14.1 million it collected in the 2017-18 fiscal year, the last full year for which data is available.

A government spokesman said the changes were driven by a need to harmonize fees charged by three separate ministries and raise them to fair market value after more than a decade with no increases.

The province is also planning to net an additional $1 million by raising roadside development permit fees and $225,000 by hiking the industrial water use charge by 18 per cent.

Sask backs court ruling on abandoned wells

Rix-Athabasca, Leonard Mine

Discover Moose Jaw - Energy companies will remain responsible for the clean up of inactive oil wells in the event of bankruptcy or insolvency, a decision that may save money for consumers.

The Saskatchewan government is backing a recent Supreme Court ruling which prohibits oil companies from abandoning their environmental responsibilities in the event of bankruptcy or insolvency.

After an Alberta based energy company attempted to walk away from inactive wells following insolvency, recent court proceedings established that environmental regulations are to be the responsibility of the oil company in question.

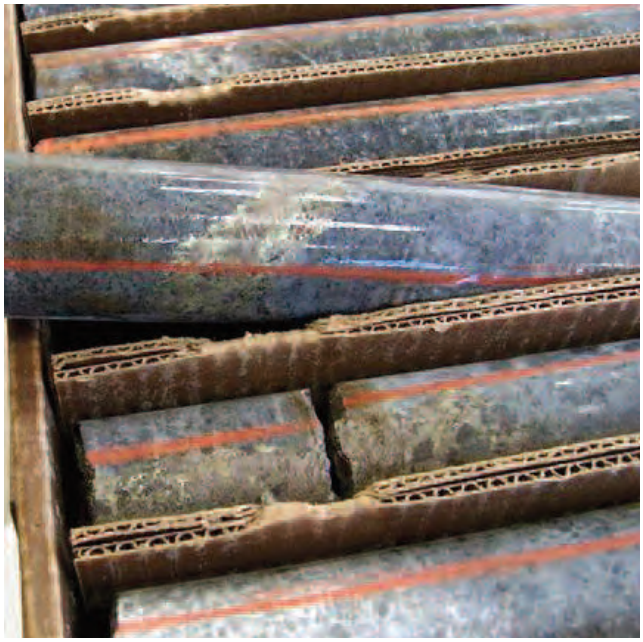
In Saskatchewan, when a well is abandoned, the cleanup and environmental responsibilities are in the hands of the Orphan Fund Procurement Program through the provincial government and funded by a levy within the oil and gas industry. In the current fiscal year, the number of orphaned wells rang in at approximately 249, which is slightly higher than in previous years but still manageable through the program.

The cost to properly decommission an orphan well can range from $50,000 to $1 million, with last year's provincial budget partitioning $4 million for the Orphan Fund Procurement Program.

The Supreme Court may help consumers. If oil companies were able to walk-away from inactive wells and the Orphan Fund Procurement Program saw an increase, that would be reflected back in the levy which would ultimately come out of the pocket of consumers.

MINING

Subsurface resources yield treasure for treasury



Global News

Global News - The first subsurface mineral public offering in Saskatchewan raised $505,000 for the government.

Officials said a single permit block of more than 8,300 hectares north of Francis was successfully bid on by CanPacific Potash Inc.

The public offerings, which will be held three times yearly.

"The introduction of subsurface mineral public offerings makes doing business in Saskatchewan even more efficient, consistent and competitive," said Energy and Resources Minister Bronwyn Eyre.

The holder has the right to explore for all-natural mineral salts and their compounds occurring more than 60 metres below land surface.

Subsurface minerals include boron, calcium, lithium, magnesium, potassium, sodium, bromine, chlorine, fluorine, iodine, nitrogen, phosphorus and sulfur.

The next public offering will take place on April 23, 2019.

INFRASTRUCTURE

Evraz gets $40 million in federal money

Regina Leader-Post - The federal government is contributing $40 million to Evraz's three-year, $112-million investment in its Regina and Red Deer facilities. The contribution will support 2,100 jobs in both communities as the industry grapples with devastating U.S. steel tariffs.

The lion's share of the funding will go to electrical upgrades for an electric arc furnace, which melts down scrap metal. That will allow Evraz to reduce both its costs per tonne of steel as well as its emissions.

Company representatives also emphasized the need for pipeline projects to increase steel demand in Canada. The company has previously warned that halted pipeline projects and notably a stop to the Trans Mountain expansion, could mean layoffs at the Regina plant.

Calendar Of Events

Law & Ethics Seminar
April 12 – 13, 2019
Saskatoon, SK
www.apegs.ca/Portal/Pages/Professional-Practice-Exam

Get to the Point! A Practical Writing Course
May 1 – 2, 2019
Regina, SK
www.apegs.ca

APEGS Annual Meeting and Professional Development Conference
May 2 – 4, 2019
Regina, SK
www.apegs.ca

GeoConvention 2019
May 13 – 15, 2019
Calgary AB
www.geoconvention.com/

The 42nd Canadian Medical and Biological Engineering Conference
May 21 – 24, 2019
Ottawa, ON
www.cmbes.ca/news-events/cmbec-conference/cmbec42

2019 AEC-SK Annual Golf Tournament
May 24, 2019
Moonlake Golf and Country Club
Saskatoon, SK
www.acec-sk.ca/events

Williston Basin Petroleum Conference
May 27 – 29, 2019
Regina, SK
wbpc.ca

Saskatchewan Oil & Gas Show
June 5 – 6, 2019
Weyburn, SK
www.oilshow.ca/events/2019-saskatchewan-oil-gas-show/form

29th PNWER Annual Summit
July 21 – 25, 2019
Saskatoon, SK
www.pnwer.org/2019-summit.html

Law & Ethics Seminar
Sept. 27 – 28
2019, Regina, SK
www.apegs.ca/Portal/Pages/Professional-Practice-Exam

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