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LEADERSHIP IN CANADA PAGE 14 CANADIAN SOCIETY FOR CIVIL ENGINEERING



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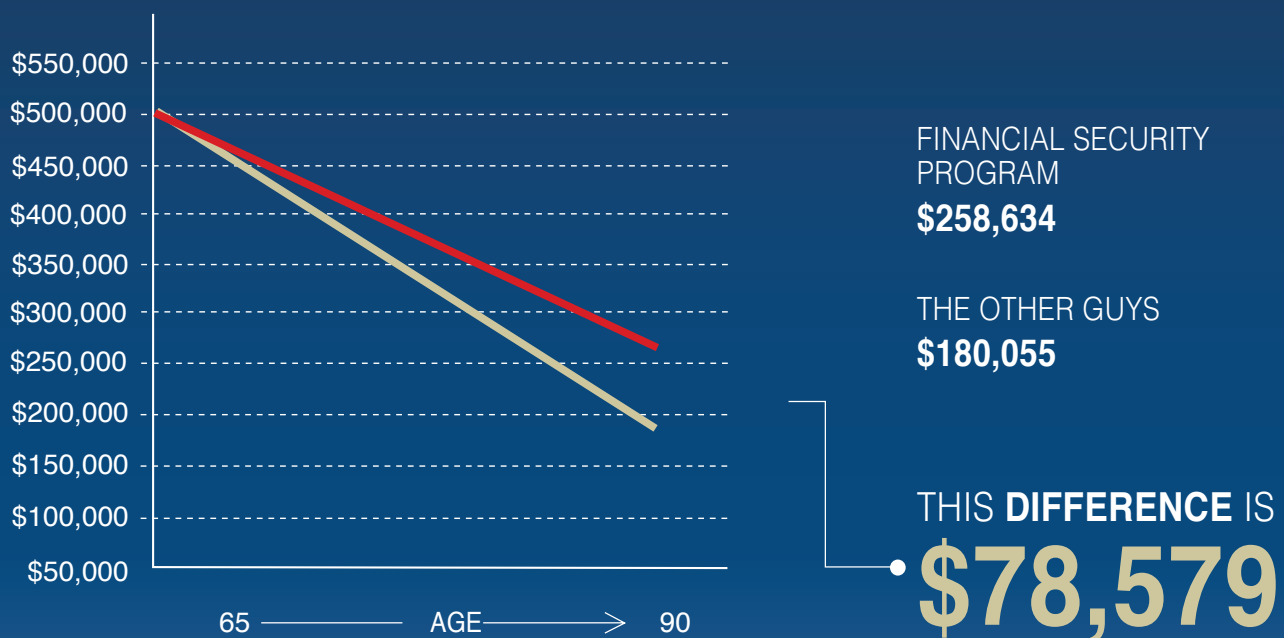
CSCE Annual Conference 2020 – Saskatoon: Tradition and the Future

PAGE 19

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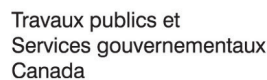
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Civil Engineering



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CSCE COURSE

Design of Aluminum Structures (based on) CSA S157 (2017)

APRIL-MAY 2020

VANCOUVER, EDMONTON, CALGARY, OTTAWA, MONTREAL

This course will include calculation examples based on CSA S157 (2017). For this reason, attendees are strongly encouraged to bring their copy of this design code with them to the course, to get the most out of these examples. The slides for this course have been developed with support from AluQuebec's Aluminum Expertise Centre (CeAl).

Instructor:

Scott Walbridge, Ph.D., P.Eng. (Alberta) Associate Professor at the University of Waterloo.

Highlights:

- Review of aluminum fundamentals, including material properties and particularities related to its application as a structural material.
- Calculation of effective strength and section properties considering the effects of local buckling and welding.
- Strength design of tension members, compression members, bending members, and connections.
- Design for fatigue and serviceability.
- Design examples to support the theory and illustrate key concepts related to these topics.

Who should take this course:

Practicing engineers who are familiar with the topic of structural design using other construction materials, such as steel or concrete.

Learn more or register now @ csce.ca/course



FORMATION DE LA SCGC

Conception des charpentes d'aluminium (BASÉ SUR) CSA S157 (2017)

AVRIL 2020

MONTREAL & QUEBEC

Ce cours comprendra des exemples de calcul basés sur CSA S157. Pour cette raison, les participants sont fortement encouragés à apporter leur copie de ce code de conception avec eux au cours, pour tirer le meilleur parti des exemples. Les diapositives de ce cours ont été développées avec le soutien du Centre d'expertise sur l'aluminium (CeAl) d'AluQuebec.

Instructeur:

Ahmed Rahem, ing., Ph.D. est professeur agrégé à l'Université du Québec à Chicoutimi depuis 2015 et il est membre du Centre de recherche sur l'aluminium - REGAL.

Survol du procédé de production et de la métallurgie de l'aluminium; notions de section efficace; méthodes d'analyse; conception d'élément en tension, en compression, en flexion, en torsion, et des cas de combinaison des efforts; aperçu de la conception des assemblages, de la fatigue et de la conception aux états limites d'utilisation. Plusieurs exemples seront présentés.

Les personnes visées par ce cours:

Architectes, ingénieurs en structure, fabricants de structures, fabricants de murs rideaux, ingénieur d'entreprises d'extrusions, fabricant de remorques.

En savoir plus @ <https://csce.ca/fr/formation-continue/formations>

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CANADIAN CIVIL ENGINEER | L'INGÉNIEUR CIVIL CANADIEN
SPRING | PRINTEMPS 2020 VOLUME 36

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Published by/Publié par:



3rd Floor - 2020 Portage Avenue, Winnipeg, MB R3J 0K4
Phone: 866-985-9780 | Fax: 866-985-9799
Email: info@kelman.ca | Web: www.kelman.ca

Return undeliverable Canadian addresses to:
E-mail: lauren@kelman.ca
Publication Mail Agreement #40065075

Managing Editor: Reba Lewis
Advertising Coordinator: Stefanie Hagidiakow
Sales Representative: Kris Fillion
Layout & Design: Tracy Toutant

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Canadian Society for Civil Engineering  Société canadienne de génie civil

CIVIL is the official publication of the
Canadian Society for Civil Engineering.

www.csce.ca





Michel Khouday, P.Eng., M.Eng.,
PMP, C.Adm., M.B.A., Ph.D.
President, CSCE
president@csce.ca

New Traditions for the Future

Dear friends, members and partners,
At CSCE, we are making strides to break some traditions to make way for a future that is a true representation of the talent that exists in Civil Engineering in Canada. Our professional pool is made up of both academic and practicing engineers, as well as an ever-increasing population of female experts. We are proud to boast that our incoming president this summer will be a female, as will our next in line.

Both, Catherine Mulligan and Brenda McCabe, have already proved to be very effective influencers at CSCE, as you will see with the release of our Vision 2030. With a slight shift in direction, we are working together to build a stronger Canada for all citizens, as well as providing new strategies and opportunities to help women in STEM professions.

After targeting our efforts over the past decade towards improving our member

benefits, growing with youth and providing leadership in sustainable infrastructure, we recognize that our focus has proven to be effective but it's time for us to put our energy into other pressing matters. While we continue to refine our Vision 2030, we can tell you that our sustainability efforts will broaden to include issues outside of infrastructure, as well as educating the younger generations about just how important civil engineering is to the world as we know it – and want it to be in the future.

We also appreciate how important it is to go to the source when it comes to learning about the vision of our members. We are happy to share that we had a strong attendance at our workshop in November, that included; board members, Sections Chairs and members from the local Student Chapters. With a mix of genders, ages, experience and backgrounds at the helm of CSCE, we know that together we are stronger

and wiser – and more ambitious than ever. Get a firsthand glimpse in May 2020 at our 48th Annual Conference.

There's still time to register for CSCE 2020 Annual Conference in Saskatoon, Saskatchewan! Rated one of the most beautiful places to visit. This conference will compare and contrast 'Tradition and the Future' throughout the line-up of technical themes and the general conference. Or give your business the visibility it deserves by booking a booth or sponsoring one of the many activities, lunches or conferences.

Stay tuned for more about our Vision 2030, and I look forward to seeing you in May.

As always, "Be Seen. Be Heard. Be relevant."

Best regards,
Michel Khouday, P.Eng., M.Eng.,
PMP, C.Adm., M.B.A., Ph.D.
President, CSCE/Président, SCGC
President@csce.ca ■

“

After targeting our efforts over the past decade towards improving our member benefits, growing with youth and providing leadership in sustainable infrastructure, we recognize that our focus has proven to be effective but it's time for us to put our energy into other pressing matters.

”



Michel Khouday, ing., M. Ing.,
PMP, Adm. A., MBA, Ph. D.
Président de la SCGC
president@csce.ca

De nouvelles traditions pour l'avenir

Chers amis, membres et partenaires,

À la SCGC, nous nous efforçons de briser certaines traditions pour faire place à un avenir véritablement représentatif du talent en génie civil au Canada. Notre bassin professionnel se compose d'ingénieurs universitaires et praticiens, ainsi que d'une proportion toujours croissante de femmes. Nous sommes aussi très fiers d'annoncer qu'à compter de cet été, notre présidente sera une femme, tout comme la prochaine présidente en ligne.

Catherine Mulligan et Brenda McCabe se sont toutes deux révélées d'excellentes bâtisseuses très efficaces à la SCGC, comme vous le verrez à la publication de notre Vision pour 2030. En opérant un léger changement de cap, nous travaillons ensemble à bâtir un Canada plus fort pour toute la population et à offrir de nouvelles stratégies et occasions pour aider les femmes dans les carrières en STIM.

Après avoir ciblé nos efforts des dix dernières années à bonifier nos avantages pour les membres, à évoluer avec les

jeunes et à faire figure de chef de file des infrastructures durables, nous reconnaissons que notre travail a été efficace, mais qu'il est temps de se consacrer à d'autres enjeux urgents. Tout en continuant de peaufiner notre Vision pour 2030, nous pouvons vous dire que nos efforts de développement durable ne se limiteront plus aux infrastructures et porteront également sur la sensibilisation des jeunes générations à l'importance du génie civil pour le monde tel que nous le connaissons – et tel que nous le voulons pour l'avenir.

Nous reconnaissons à quel point il est important de retourner aux sources pour connaître la vision de nos membres. À notre grand bonheur, notre atelier de novembre a connu une forte participation, notamment de membres du conseil, de présidents de section et de membres des sections étudiantes locales. Compte tenu de la diversité de genre, d'âge, d'expérience et de parcours à la barre de la SCGC, nous savons qu'ensemble, nous sommes plus forts, plus sages, et plus ambitieux que jamais. Vous pourrez découvrir

les grandes lignes de la Vision 2030 en mai 2020 à notre 48^e congrès annuel.

Il est encore temps de vous inscrire au congrès annuel 2020 de la SCGC à Saskatoon, en Saskatchewan, un endroit classé parmi les plus beaux à visiter. Sous le thème « La tradition et l'avenir », ce congrès comparera et opposera ces deux notions autant dans les séances techniques que dans le programme en général. Vous pouvez aussi donner à votre entreprise la visibilité qu'elle mérite en réservant un kiosque ou en parrainant l'une des nombreuses activités, un repas ou une conférence.

Restez à l'écoute pour en savoir davantage sur notre Vision 2030. Au plaisir de vous voir en mai!

Et, comme toujours, « soyez vus, soyez entendus, soyez pertinents. »

Cordialement,
Michel Khouday, ing., M. Ing.,
PMP, Adm. A., MBA, Ph. D.
President, CSCE/Président, SCGC
President@csce.ca ■



Après avoir ciblé nos efforts des dix dernières années à bonifier nos avantages pour les membres, à évoluer avec les jeunes et à faire figure de chef de file des infrastructures durables, nous reconnaissons que notre travail a été efficace, mais qu'il est temps de se consacrer à d'autres enjeux urgents.



In 2020 the Champlain Bridge deconstruction begins!

En 2020 s'amorce la déconstruction du pont Champlain!

In 2020, the Champlain Bridge deconstruction will be a milestone for not only The Jacques Cartier and Champlain Bridges Incorporated (JCCBI), but also the entire Greater Montreal area. While deconstructing a 3.4-km structure over the St. Lawrence River is, in itself, a colossal civil engineering challenge, JCCBI also wants to adhere to exemplary practices and carry out the project according to major sustainable development principles.

Motivated by this ambitious goal, the JCCBI team has developed tailored programs that include making the project carbon neutral, creating aquatic and terrestrial wildlife habitats, reusing materials to promote a circular economy, and having research bodies carry out R&D projects.

287,000 tonnes of materials

To reduce the environmental and social impact of the bridge materials, the Corporation is aiming for reuse over recycling, for example, by encouraging the use of components as art materials or having significant amounts reused in construction projects in the region.

10 R&D projects

A distinctive feature of the deconstruction is that it will include R&D projects carried out on full-scale components; the project represents in fact a unique opportunity to significantly improve our knowledge of infrastructure performance and sustainability. The R&D projects will study things like the premature deterioration that affects the longevity of Quebec's infrastructure as well as the reinforcement techniques applied to this structure.

7 hectares of land

After the original Champlain Bridge is deconstructed, seven hectares of land will be freed up and developed by JCCBI. The public was invited to participate in a process to help JCCBI better understand their needs.

JCCBI is implementing these different initiatives to obtain Envision recognition, which evaluates infrastructure projects based on sustainable development criteria related to quality of life, leadership, resource allocation, and the environment.

La déconstruction du pont Champlain marquera l'année 2020 pour Les Ponts Jacques Cartier et Champlain Incorporée (PJCCI) ainsi que pour la grande région de Montréal. Si déconstruire un ouvrage de 3,4 km situé au-dessus du fleuve Saint-Laurent constitue en soi un défi colossal de génie civil, PJCCI souhaite également que ce projet soit mené de façon exemplaire suivant les grands principes de développement durable.

Animée par cet objectif ambitieux, l'équipe de PJCCI a élaboré des programmes sur mesure pour ce projet incluant notamment la carboneutralité, la création d'habitats fauniques aquatiques et terrestres, le réemploi de matériaux favorisant une économie circulaire ainsi que des projets de recherche et développement.

287 000 tonnes de matériaux

Dans un souci de réduire l'impact environnemental et social de ces matériaux, la Société souhaite privilégier le réemploi plutôt que le recyclage, notamment en favorisant l'usage de pièces à des fins artistiques, ou encore le réemploi de quantités significatives dans des projets de construction de la région.

10 projets de recherche et développement

Le projet de déconstruction se démarquera également par ses projets de recherche et développement qui seront réalisés à échelle réelle. Il s'agit d'une chance unique de faire évoluer la connaissance en lien avec la performance et la durabilité des infrastructures. Ces projets porteront entre autres sur la dégradation prématurée qui affecte la durabilité des infrastructures du Québec, en plus d'étudier les techniques de renforcement appliquées sur cet ouvrage.

7 hectares de terrains

À la suite de la déconstruction du pont Champlain d'origine, sept hectares de terrains seront libérés et aménagés par PJCCI. La population a d'ailleurs été invitée à prendre part à la démarche participative visant à mieux comprendre ses besoins.

Enfin, par ces différentes initiatives, PJCCI vise l'obtention de la reconnaissance Envision qui évalue les projets d'infrastructures suivant différents critères de développement durable dont la qualité de vie des communautés, le leadership, l'utilisation des ressources et l'environnement.

Le point sur la Région du Québec



Frédéric Brunet,
V-P. Région Du Québec, SCGC

En juin dernier, près de 700 ingénieurs, professionnels, étudiants et bénévoles se sont rassemblés à Laval, dans la grande région de Montréal, pour le congrès annuel 2019 de la SCGC. Cet événement, organisé conjointement par les trois sections de la région (Montréal, Québec et Sherbrooke), avait pour thème « Croître avec les jeunes ». Le comité organisateur local avait pour objectif de créer un événement inclusif et de mettre de l'avant les jeunes professionnels et les étudiants. Pour ce faire, ceux-ci étaient invités à prendre part à toutes les activités du congrès, par exemple le banquet des prix de la SCGC. Cette attention a été particulièrement appréciée, tant par les jeunes professionnels et étudiants que par les membres chevronnés de la société. De plus, un programme technique riche et varié, composé de plus de 500 articles scientifiques, avec des conférenciers invités de renom a été offert aux participants, faisant de ce congrès un événement mémorable.

En plus de participer à l'organisation du congrès annuel, les trois sections ont tenu, tout au long de l'année, une grande variété de conférences, d'activités de réseautage et de visites techniques. Parmi les conférences, plusieurs aspects ont été abordés, notamment la gestion de l'ingénierie, les aspects légaux en génie, la vision entrepreneuriale, l'utilisation de matériau innovant tel que l'aluminium, l'application de l'intelligence artificielle en génie civil et bien d'autres. On peut donc dire que la dernière année a été bien remplie et que les sections ont toutes offert un excellent service aux membres.

Il convient de souligner plus particulièrement le travail remarquable que le comité de Sherbrooke a fait durant la dernière année. Rappelons que depuis 2015 le chapitre étudiant de l'Université de Sherbrooke ainsi que la section professionnelle ont été combinés pour ne créer qu'un seul comité. Cette décision

avait été prise puisque la section était peu active et que la meilleure façon de la relancer était de jumeler ses efforts à ceux du chapitre étudiant. À titre de présidente de ce comité, Zohra Alaoui, étudiante à l'Université de Sherbrooke, a organisé un nombre impressionnant d'activités, tant pour les étudiants, que les professionnels, avec en moyenne une cinquantaine de participants par événements. Son dévouement et ses efforts ne sont pas passés inaperçus. En



De gauche à droite:
Michel Khouday, Zohra Alaoui, Frédéric Brunet.

effet, lors de la dernière réunion du Conseil d'administration de la SCGC nationale, Zohra s'est vue remettre un certificat d'excellence de la part du président de la SCGC.

« Ce que j'ai le plus apprécié des activités organisées lors de cette année, c'est le retour positif des participants, étudiants et professionnels, ainsi que les contacts qui ont pu être établis entre participants. Je suis d'autant plus ravie que tous ces efforts, en plus d'être enrichissants au niveau personnel et professionnel, soient reconnus par la SCGC. »

– Zohra Alaoui, *finissante en génie civil à l'Université de Sherbrooke.*

En somme, les sections du Québec continueront cette année de travailler à bonifier les services aux membres, d'augmenter la visibilité des partenaires et de dynamiser l'expérience de ses bénévoles. Si vous avez des suggestions ou êtes intéressés à en savoir plus sur nos activités et nos événements, n'hésitez pas à me contacter: vice-president-region@scgcquebec.ca. ■

R.V. Anderson Associates Limited New Principal Appointments



RVA has appointed Vince Grande to the position of Principal.

Vince is the Regional Manager of our Niagara office, leading a team of professional staff with investigations, design and contract administration services for projects involving wastewater systems, water supply, municipal infrastructure, and related facilities.

He also leads Business Development for the Niagara office.

RVA has appointed Moe Latif to the position of Principal.

Moe has over 23 years of experience in architectural design, urban design, technical architectural/engineering, construction administration and project management. He has coordinated and managed mega projects on budget and on schedule with construction costs up to and exceeding \$1 billion U.S.



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CSCE is growing with youth, more than ever.

Over the last few years there have been more Young Professionals filling positions across CSCE than ever before - including executive roles with our governing board.

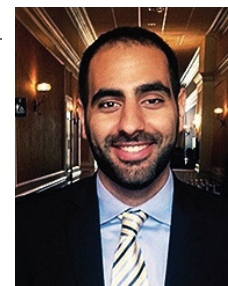
From Section Chairs to Committee Chairs and Regional Vice-Presidents - we're working with the next generation of Civil Engineering Professionals so that we can understand their vision of the future and provide them opportunities to grow their experience.

In 2018, the CSCE Annual Conference was hosted by two YPs for the first time ever - as is our current National Lecture Tour about climate change. See more at csce.ca/events.

Join the CSCE Young Professional Committee today to learn more about these and new opportunities to expedite your corporate and technical development.

Learn more @
csce.ca/benefits

The Importance of Support Networks for Young Professionals



Rami Mansour, M.A.Sc., P.Eng.
 Bridge Designer, SYSTRA-IBT Chair, National Young Professionals Committee, CSCE

One of the most difficult challenges for young engineers is successfully transitioning from student to working professional. At university, students have access to a diverse support network designed to help them succeed academically and socially. This support network is no longer accessible after graduation, so young engineers must deal with this transition with minimal guidance and support.

The transition to working professional takes many years, and requires the development of knowledge and experience to successfully work in an engineering capacity. During this time, it is important that young engineers surround themselves with a strong system of support from family, friends, and industry colleagues. Having a strong, diverse support system will help ensure a successful transition into the engineering profession.

The Canadian Society of Civil Engineers (CSCE) was created in 1887 to provide a strong support system to civil engineers at all stages of their careers. This support system has helped make the Canadian civil engineering community one of the strongest in the world. Currently, the CSCE provides numerous forums that young engineers can use for support. These forums include opportunities for networking, professional development and volunteering.

Building a strong social and professional network is one of the most important steps in transitioning into a senior engineering role. The strength and diversity of an engineer's professional network provides new employment opportunities, professional development opportunities, the ability to gain diverse perspectives on each major decision, exposure to new ideas, and exposure to different facets of the civil engineering profession. The CSCE provides numerous opportunities for young professionals to build their professional networks through local section events and conferences. Attending local section events provides exclusive access to local civil engineering community leaders and engineers with diverse backgrounds. The CSCE annual conference, being held in Saskatoon this year, provides young engineers with the opportunity to meet civil engineers from across the country, and take part in discussing the critical topics related to civil engineering.

The transition from student to working professional also requires that engineers develop inside and outside their workplace. Local section events and conferences provide young professionals with the opportunity to gain knowledge in various facets of engineering, most of which will be directly applicable in practice. The CSCE National Lecture Tour highlights the most important topics in civil engineering each year. The CSCE also provides access to technical conferences and courses that are tailored to specific industries. Attending these events provides a means to learn about the state of the art in each specific aspect of civil engineering.

For young engineers, volunteering is one of the most rewarding experiences, and provides a forum to develop skills that may not be developed at work. Volunteering improves soft skills such as leadership, financial management, event planning and presentation skills. Gaining this experience early in an engineer's career can make a significant impact on future opportunities. The CSCE provides numerous volunteer roles, through local sections, technical committees, and more.

To learn more about how you can develop a strong support network, visit the CSCE website (www.csce.ca/en/benefits), or social media pages and sign up for local and national newsletters. If you are interested in learning more about the CSCE National Young Professional committee, please feel free to contact me at the address below.

Rami Mansour, M.A.Sc., P.Eng. , CSCE Young Professionals Committee Chair
rmansour@systra.com ■

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- NEW professional development opportunities with corporate projects
- NEW roles in the Technical Divisions
- NEW opportunities to support our sustainability efforts
- Chair a Committee or Section



Positions de bénévolate avec la SCGC

- NOUVELLES opportunités de développement professionnel avec des projets d'entreprise
- NOUVEAUX rôles dans les divisions techniques
- NOUVELLES opportunités pour soutenir nos efforts de développement durable
- Présider un comité ou une section



Find out more!
En-savoir plus!

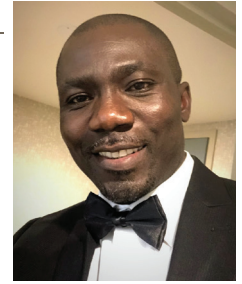
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Sneak Preview into Student Participation at Saskatoon 2020



Charles-Darwin Annan, Ph.D., P.Eng.,
Chair, CSCE Student Affairs Committee
Professor of Civil Engineering at
Université Laval, Québec City

The Local Organizing Committee for this year's CSCE Annual Conference in Saskatoon (May 27-30, 2020) is getting ready to deliver a memorable event on the theme *Tradition and the Future*. CSCE Student Affairs is working with the Young Professionals (YP) team to put together a stimulating program for students and YPs. Below is a sneak peek of some major events for students:

National Student Chapter Leaders Workshop – This workshop will provide a stimulating platform for incoming CSCE Student Chapter leaders from across Canada to interact and exchange ideas. The workshop will address topics such as keys to running a dynamic student chapter, member recruitment and retention strategies, finances and fundraising strategies, member and faculty participation, setting SMART chapter goals and action plan, and the roadmap to becoming the best student chapter.

National Civil Engineering Design CAPSTONE Competition – The CAPSTONE project is the cornerstone of many accredited undergraduate civil engineering programs in Canada. Each civil engineering program will be invited to submit a nomination for a single entry into the competition in any specialty area. Two students from each nominated team will attend the conference and present their project in a poster session before a jury. The winner and runners-up will be announced at the Awards for Civil Engineering Excellence program.

Student Paper Competitions – This competition presents an opportunity for students to share the results of their research projects. This year, the competition will be held on a specialty conference basis. Meaning each of the specialty conferences will be recognising their top student papers. Student membership is required for eligibility, and student membership is FREE.

“

CSCE Student Affairs is working with the Young Professionals (YP) team to put together a stimulating program for students and YPs.

”

Student Awards – Similar to last year, the student awards program will be held together with the main CSCE Awards for Civil Engineering Excellence. This event will celebrate the achievements of our students from across the country. It also offers an excellent networking opportunity for students. Some of the awards to be given out on the night will include the President's Awards for Outstanding Student Chapters, Best National Capstone Design Awards, Best Student Paper Awards, and Awards for the Canadian National Concrete Canoe and Canadian National Steel Bridge Competitions.

Dr. Charles-Darwin Annan
Professor of Civil Engineering at Université Laval
charles-darwin.annan@gci.ulaval.ca ■



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LEADERSHIP IN CANADA

CANADIAN SOCIETY FOR CIVIL ENGINEERING



Brenda McCabe,
PhD, PEng, FCSCE, FEIC

“In civil engineering, we see that many of the problems presented to us are not solved in isolation, but instead require teams where we build partnerships not just with other engineering disciplines, but with broad professional specializations such as computer programming, environmental science, or psychology.”

Equity, diversity, and inclusivity (EDI) are current and important topics in the workplace, whether in industry or academia. EDI's foundation resides in the ample evidence that our decisions and practices benefit from varied perspectives and enable us to meet the immense challenges we face today and in the future.

In civil engineering, we see that many of the problems presented to us are not solved in isolation, but instead require teams where we build partnerships not just with other engineering disciplines, but with broad professional specializations such as computer programming, environmental science, or psychology.

Although we are a society focused on civil engineering, diversity within the leadership team remains important to ensure that we are benefiting from some of these potential gains. I will look at two dimensions, namely sector and gender, and how they've changed in the last 10 years. But first, a review of the leadership structure.

CSCE's leadership structure is quite lean and comprises three levels (please refer to our website for the organizational chart). The Executive involves the top four positions: the president, past president, president elect, and senior vice president, who represents the regional VPs. The National Management Committee (NMC) includes the Executive plus three vice presidents. The VP Administrative Coordinating Committee

| | Executive | NMC* | Board |
|--|-----------|------|--------|
| President | X | X | X |
| Past President | X | X | X |
| President Elect | X | X | X |
| Senior Vice President and Chair, Regional Coordinating Committee | X | X | X |
| Vice President Administrative Coordinating Committee | | X | X |
| Vice President Technical Divisions and Committees | | X | X |
| Vice President Technical Programs | | X | X |
| 6 Regional Vice-Presidents (Atlantic, Quebec, Ontario, Prairies, Western, and International Regions) | | | XXXXXX |
| 2 Members at Large (1 industry and 1 academia) | | | XX |

* National Management Committee

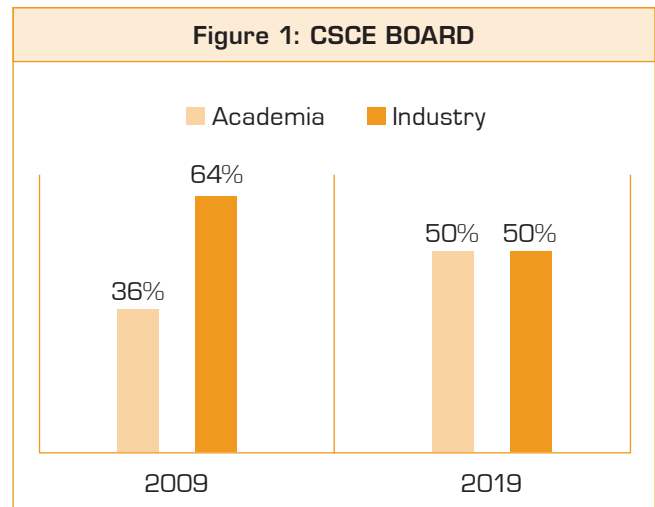
“ Just a few years ago, Engineers Canada challenged our community to bring the percentage of newly licensed female engineers to 30% by the year 2030.”

(ACC) represents nine administrative committees; the VP Technical Divisions and Committees (TDC) represents 10 technical groups; and, the VP Technical Programs represents six program committees. Finally, the full board brings to the table six regional VPs representing 16 sections, and two members-at-large. In the overall structure, we also have 30 student chapters associated with universities across the country.

With respect to the proportion of academic and practicing engineers on the Board, we have done well, going from 64% industry in 2009 to 50% in 2019 (Fig. 1). This provides the Board with important perspectives during discussions of education, policy and practice.

Just a few years ago, Engineers Canada challenged our community to bring the percentage of newly licensed female engineers to 30% by the year 2030. Most or all of the provincial licencing associations joined the initiative. Given we have just 10 years left to achieve this goal, we thought that this would be a good time to see how the CSCE leadership is doing with respect to gender diversity. Unfortunately, we do not have statistics on the membership gender balance, but we know that the undergraduate classes in Canada’s civil engineering programs now comprise 29% women on average! So, how is CSCE doing relative?

Figure 2 shows that on the Executive, we’ve gone from all men to a balance of two and two; in fact, **this is the first time in the history of CSCE that we have two consecutive female incoming presidents.** It’s quite humbling to be a part of this point in history. We’ll aim to maintain diversity in the Executive going forward. On the Board, we’ve made some inroads, but there is a way to go. Our Board members will look to diversify as VPs approach the ends of their terms and start their succession planning. The gender balance of Section and Committee Chairs is steady at 25% women, which reflects our



graduating classes and to some degree, our membership. So, all in all, we are headed in the right direction. The key is to maintain diversity over time. We’ll be better for it.

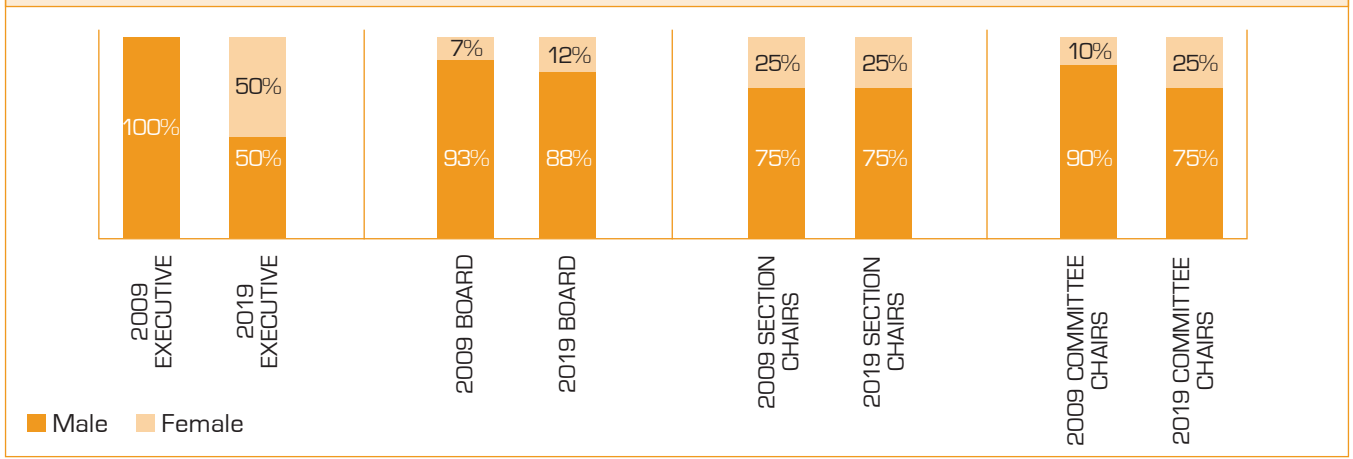
Another high-profile group among our ranks are the CSCE Fellows. Fellowships acknowledge a long-term commitment to the Society and the profession, and generally require that the nominee be a current member of CSCE with five years of continuous CSCE membership, 10 years of professional experience, and typically be at least 45 years of age. Sadly, fewer than 25 of the almost 550 Fellows are women (less than 5%), and only 4% of the 2019 Fellow-eligible members were women. While this is a function of the history of the profession, the rules of the award, and the gradual balancing of the membership overall, this is an area in which we could improve the most. I hope we can work together to start addressing

this issue for the 2020 round of Fellowship nominations.

While CSCE is steeped in tradition and we are working fiercely to make way for change in the future, the magnitude of what this society has accomplished will never be diminished. The strength behind

CSCE comes from the determination behind each of its members; men and women alike. So, don't be discouraged because something has never been done before, be the one who makes it happen – and reach out for support so we can help you get there. ■

Figure 2: CSCE LEADERSHIP GENDER BALANCE



“While CSCE is steeped in tradition and we are working fiercely to make way for change in the future, the magnitude of what this society has accomplished will never be diminished.”



Canadian Society for
Civil Engineering



Société canadienne
de génie civil

CSCE COURSE

Durability and Climate Change of Buildings - NBCC

MAY 27, 2020 SASKATOON

Delta Downtown Hotel, Saskatoon, same as the CSCE 2020 Annual Conference
HALF DAY COURSE

An overview of the recently published CSA, National Standard of Canada: CSA S478:19 Durability in Buildings

Instructors:

Michael A. Lacasse, Ph.D., P.Eng., Director (Acting), Construction Research Centre (CONST), National Research Council Canada

Introduced in the Standard for the first time is the issue of climate change and its potential effects on buildings and building elements. Given that designers will need to factor into their designs the environmental loads and action effects resulting from climate change, the course will also cover the expected changes in climate loads, relevant to the durability of buildings as may occur across Canada.

Who should take this course:

Architects, engineers and building practitioners responsible for the design of buildings, or the selection and specification of building components or the maintenance of buildings.

Learn more or register now @ csce.ca/course

LEADERSHIP AU CANADA

SOCIÉTÉ CANADIENNE DE GENIE CIVIL



Brenda McCabe,
Ph.D, ing., FCSCE, FEIC

L'équité, la diversité et l'inclusion (EDI) sont des sujets actuels et importants dans les milieux de travail, tant dans le secteur privé qu'universitaire. Les fondements de l'EDI reposent à l'évidence sur le fait que nos décisions et nos pratiques bénéficient de perspectives variées et nous permettent de trouver des solutions aux grands problèmes d'aujourd'hui et de demain.

En génie civil, nous constatons que bon nombre des problèmes qui nous sont présentés ne sont pas résolus isolément; ils nécessitent la formation d'équipes et de partenariats non seulement avec d'autres disciplines du génie, mais avec des spécialités professionnelles générales comme la programmation informatique, les sciences de l'environnement ou la psychologie.

Bien que nous soyons une société axée sur le génie civil, la diversité à la tête de l'organisme demeure importante si nous voulons profiter de

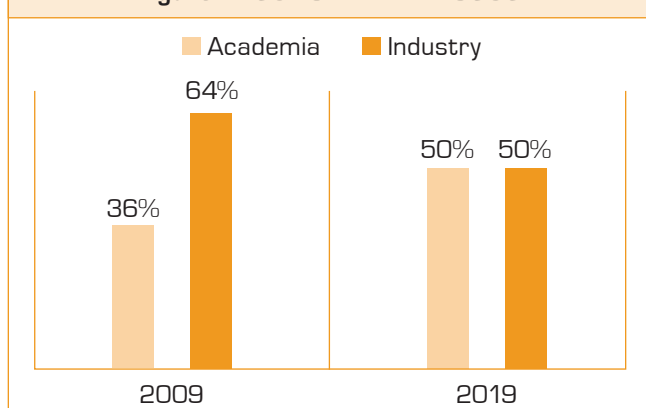
certains de ces gains potentiels. Je m'intéresserai en particulier à deux éléments de cette diversité, soit le secteur et le genre, et à leur évolution au cours des 10 dernières années. Mais faisons d'abord un survol de la structure de la direction de la Société.

La SCGC s'est dotée d'une structure assez simple à trois niveaux (voir notre organigramme sur le site Web). Le Comité exécutif comprend les quatre postes principaux : le président, l'ancien président, le président désigné et le premier vice-président, qui représente les vice-présidents régionaux. Le Comité national de gestion (CNG) comprend pour sa part les membres du Comité exécutif et trois autres vice-présidents. Le vice-président, Comité de coordination administrative (CCA) représente neuf comités administratifs; le vice-président, Divisions techniques et comités (DTC) représente 10 groupes techniques; et le vice-président, Programmes techniques représente six comités de programme. Enfin, le

| | Comité exécutif | CNG* | Conseil d'administration |
|---|-----------------|------|--------------------------|
| Président | X | X | X |
| Ancien président | X | X | X |
| Président désigné | X | X | X |
| Premier vice-président et président, Comité de coordination régionale | X | X | X |
| Vice-président, Comité de coordination administrative | | X | X |
| Vice-président, Divisions techniques et comités | | X | X |
| Vice-président, Programmes techniques | | X | X |
| 6 vice-présidents régionaux (Atlantique, Québec, Ontario, Prairies, Ouest, International) | | | XXXXXX |
| 2 membres sans fonction déterminée (1 du secteur privé et 1 du milieu universitaire) | | | XX |

Comité national de gestion

Figure 1: CONSEIL DE LA SCGC



conseil d'administration est complété par six vice-présidents régionaux représentant 16 sections et deux membres sans fonction déterminée. La structure globale compte également 30 chapitres étudiants associés aux universités du pays.

En ce qui concerne la proportion d'ingénieurs universitaires par rapport aux ingénieurs en exercice au Conseil, nous avons bien progressé : les membres du secteur privé représentaient 64 % du Conseil en 2009 et 50 % en 2019 (Fig.1). Le Conseil compte donc sur un large éventail de perspectives pour discuter d'éducation, de politiques et d'exercice.

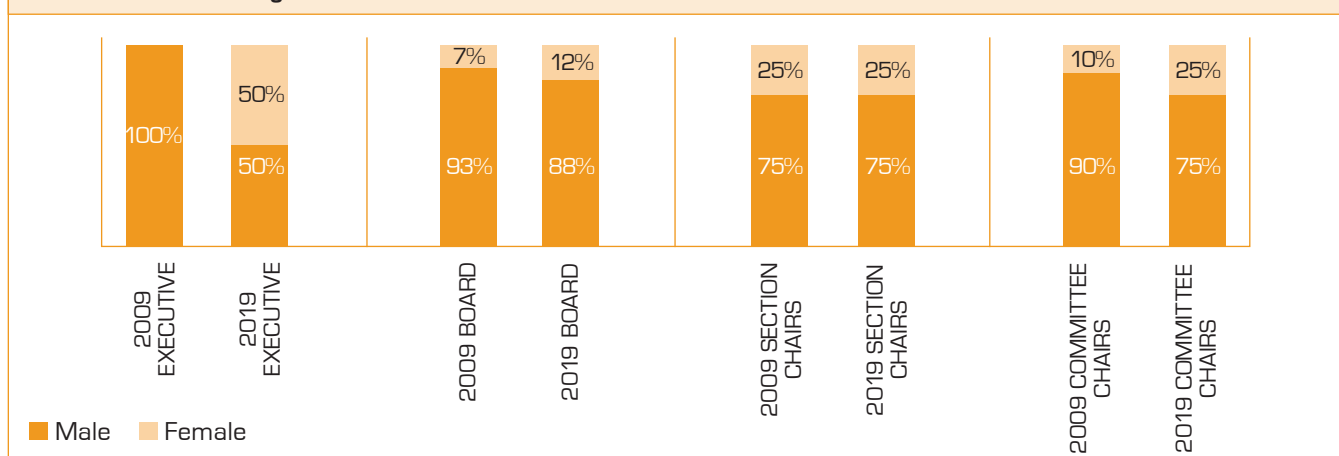
Il y a quelques années à peine, Ingénieurs Canada a mis au défi notre communauté de porter le pourcentage d'ingénieures possédant un nouveau permis d'exercice à 30 % d'ici 2030. La plupart ou la totalité des associations provinciales de délivrance de permis ont accepté de relever ce défi. Comme il ne nous reste que 10 ans pour atteindre cet objectif, nous avons pensé que le moment était opportun d'examiner les pratiques de la SCGC en matière de diversité de genre. Malheureusement, nous n'avons pas de statistiques sur l'équilibre hommes-femmes parmi les membres, mais nous savons que le pourcentage moyen de femmes dans les cours de premier cycle de génie civil au Canada s'élève maintenant à 29 %! Et à la SCGC, comment nous en tirons-nous?

La Figure 2 montre que la composition du Comité exécutif est passée de quatre hommes à un équilibre de deux hommes et deux femmes. C'est en fait la première fois de l'histoire de la SCGC que nous aurons deux femmes à la présidence deux années de suite. Faire partie de ce point marquant est pour moi une leçon d'humilité. Nous tenterons de maintenir la diversité au Comité exécutif dans les années à venir. Au conseil d'administration, nous avons fait du progrès, mais il reste du chemin à parcourir. Notre conseil cherchera à se diversifier alors que des vice-présidents approchent de la fin de leur mandat et commencent à planifier la relève. Pour ce qui est de l'équilibre hommes-femmes à la présidence de sections et de comités, le pourcentage se maintient à 25 % de femmes, ce qui correspond au pourcentage dans les cohortes de diplômés et, dans une certaine mesure, de nos membres. Donc, dans l'ensemble, nous sommes sur la bonne voie. Il faut maintenant préserver la diversité au fil du temps. C'est ce que nous tâcherons d'améliorer.

Un autre groupe de membres éminents de la SCGC est celui des fellows. Nos fellowships reconnaissent un engagement à long terme envers la Société et la profession. De façon générale, les candidats sont membres en règle de la SCGC (dont cinq ans d'adhésion continue), ils ont 10 ans d'expérience professionnelle et ils sont âgés d'au moins 45 ans. Malheureusement, moins de 25 des quelque 550 fellows sont des femmes (moins de 5 %), et seulement 4 % des membres admissibles en 2019 étaient des femmes. Bien que cette situation soit tributaire de l'histoire de la profession, des règles d'attribution et de l'atteinte progressive d'un équilibre dans la composition de la Société, il s'agit là d'un des volets où nous pourrions faire le plus de progrès. J'espère que nous pourrions commencer ensemble à aborder cette question en prévision du cycle 2020 de candidatures au titre de fellow.

Comme la SCGC est ancrée dans la tradition et même si nous travaillons avec acharnement à faire place au changement, l'ampleur des réalisations de notre société ne sera jamais diminuée. La SCGC doit sa force à la détermination de chacun de ses membres, hommes et femmes. Je vous invite donc à ne pas vous décourager parce que quelque chose ne s'est jamais fait auparavant; soyez plutôt la personne à l'origine du changement et demandez notre appui pour que nous puissions vous aider à y arriver. ■

Figure 2: ÉQUILIBRE HOMMES-FEMMES À LA DIRECTION DE LA SCGC





TRADITION AND THE FUTURE LA TRADITION ET L'AVENIR

Canadian Society for
Civil Engineering



Société canadienne
de génie civil

FORTY-EIGHTH ANNUAL CONFERENCE

QUARANTE-HUITIÈME CONGRÈS ANNUEL

We are very pleased to extend greetings on behalf of the Local Organizing Committee for the CSCE's 48th annual conference, which will be held in beautiful Saskatoon, May 27-30, 2020. We hope you enjoy the wonderful hospitality that makes Saskatchewan one of the best places to visit in Canada!

The organizing committee and CSCE National Office staff have been working hard to put on a world-class event. We are excited to have you visit our province and to let you in on Our Little Secret, Saskatoon Shines and the land of the living skies awaits you!

Nous sommes heureux de vous inviter au nom du comité organisateur local au 48e congrès annuel de la SCGC qui se tiendra dans la charmante ville de Saskatoon du 27 au 30 mai 2020. Nous espérons que vous aimerez l'accueil chaleureux qui fait de la Saskatchewan l'un des meilleurs endroits à visiter au Canada.

Le comité organisateur et le personnel du Bureau national de la SCGC s'affairent à mettre sur pied un événement de classe mondiale. Nous sommes heureux que vous veniez visiter notre province et avons hâte de vous montrer ce secret bien gardé, un lieu où le ciel s'anime pour vous accueillir!

Patrick Lalach, P.Eng., FCSCE
Partner, Director – Transportation, CIMA Canada Inc.
Conference Co-Chair



Patrick Lalach, ing., FCSCE/FSCGC
Partenaire et directeur, Transport
CIMA Canada Inc.
Coprésident du congrès



Dena McMartin, PhD, P.Eng, FEC
Associate Provost, Institutional Planning and Assessment
– University of Saskatchewan, Technical Program Chair,
Conference Co-Chair

Dena McMartin, Ph. D., ing., FIC
Vice-rectrice associée aux études, Planification et évaluation
de l'établissement, Université de la Saskatchewan



CSCCE is coming to Saskatoon in 2020 and here's what you can expect at the conference, *Tradition and the Future – La Tradition et L'Avenir.*

The conference theme refers to changes we are experiencing in our profession, our country, and globally. Whether these are cultural and social changes, environmental and political shifts, and/or technological and engineering solutions-based, change is grounded in traditions and looking to the future. In support of our theme, the two keynote speakers for the general conference will share their experiences and knowledge about the history of civil engineering in Saskatoon (Mr. Jeff O'Brien, City Archivist) and a history of First Nations peoples in Saskatchewan (Dr. Ernie Walker, USask archaeologist instrumental in the establishment of the Wanuskewin Heritage Centre). We are also planning a cultural tour for both conference delegates and partners who wish to experience the traditions and knowledge of our First Nations Peoples at Wanuskewin.

TECHNICAL PROGRAM

Key civil engineering themes emerging in the general conference include project management and leadership; lifecycle assessment; safety, building information modelling (BIM) and policy; infrastructure and asset management; climate change and sustainability; soils and geotechnical engineering; civil engineering history; and modeling and programming. We will also begin the conference with a diversity panel, focusing on future needs, opportunities, change, and challenges in which civil engineers will play important roles as leaders, community influencers, and change managers.

CSCCE 2020 features the general conference, as well as four specialty conferences. The environmental specialty conference includes a feature track on stormwater engineering. We are also playing host to large speciality conferences in structures and materials engineering, with strong contributions to transportation engineering.

HISTORIC SITE DEDICATION

The South Saskatchewan River Project will be dedicated as a Civil Engineering Historic Site during the conference. The project consists of the Gardiner and Qu'Appelle Dams, the Lake Diefenbaker reservoir, the Coteau Creek power station, several



En 2020, la SCGC se rend à Saskatoon pour son congrès annuel ayant pour thème *La Tradition et l'avenir – Tradition and the Future.*

Ce thème fait référence aux changements que nous vivons dans notre profession, dans notre pays et mondialement. Qu'ils soient culturels et sociaux, environnementaux ou politiques, qu'ils découlent d'avancées techniques ou technologiques, les changements sont ancrés dans les traditions, mais tournés vers l'avenir. Pour approfondir notre thème, deux conférenciers principaux partageront leurs expériences et connaissances sur deux perspectives historiques. Jeff O'Brien, archiviste de la ville, nous parlera de l'histoire du génie civil à Saskatoon et Ernie Walker, Ph. D., archéologue à l'Université de la Saskatchewan et acteur important dans l'établissement du Centre patrimonial Wanuskewin, nous entretiendra de l'histoire des Premières Nations en Saskatchewan. Nous planifions également des visites culturelles pour les délégués et partenaires qui souhaitent faire l'expérience des traditions et des connaissances des Premières Nations à Wanuskewin.

PROGRAMME TECHNIQUE

Les principaux thèmes de génie civil traités dans les conférences générales sont, notamment, la gestion de projets et le leadership, l'évaluation du cycle de vie, la sécurité, les politiques et la modélisation des données du bâtiment, la gestion des infrastructures et des actifs, les changements climatiques et la protection de l'environnement, les sols et la géotechnique, l'histoire du génie civil ainsi que la modélisation et la programmation. Le congrès s'ouvrira avec une table ronde sur la diversité mettant l'accent sur les besoins, opportunités, changements et défis à venir dans lesquels les ingénieurs civils auront d'importants rôles à jouer en tant que leaders, influenceurs dans la collectivité et gestionnaires de changement.

Le congrès de 2020 propose une conférence générale et quatre conférences de spécialité. La conférence de spécialité sur l'environnement comprend un volet sur l'ingénierie des eaux pluviales. Les autres conférences de spécialité porteront sur le génie des structures, sur les matériaux et les transports.

INAUGURATION D'UN SITE HISTORIQUE

Pendant le congrès, le South Saskatchewan River Project sera inauguré en tant que site historique du génie civil. Le projet comprend les barrages Gardiner et Qu'Appelle, le réservoir

du lac Diefenbaker, la centrale Coteau Creek, plusieurs réseaux d'alimentation en eau destinés à l'agriculture et à des fins industrielles ou municipales, ainsi qu'à des installations récréatives.

L'histoire du South Saskatchewan River Project remonte au XIX^e siècle alors que la possibilité de construire un barrage sur la rivière Saskatchewan Sud a été proposée pour la première fois.

water supply systems for agricultural, industrial and municipal purposes, and recreation facilities.

The history of the South Saskatchewan River Project goes back to the 19th Century when the possibility of damming the South Saskatchewan River was first proposed. The drought of the 1930s revived interest in creating a reservoir in southern Saskatchewan. The Prairie Farm Rehabilitation Administration began investigating constructing a dam on the South Saskatchewan River and released a report in 1947. In 1958, a funding agreement was signed by the federal and provincial governments and construction started in 1959. The project was formally opened in 1967, and the last contract completed in 1968.

Formal recognition of the South Saskatchewan River Project will take place at Gardiner Dam 100 km south of Saskatoon and will be part of an Extended Technical Bus Tour of various components of the project.

TECHNICAL TOURS

We have arranged Technical Tours around Saskatoon to highlight some of the innovative and technological advances in the area.

Tour 1 – Canadian Light Source and VIDO-Intervac

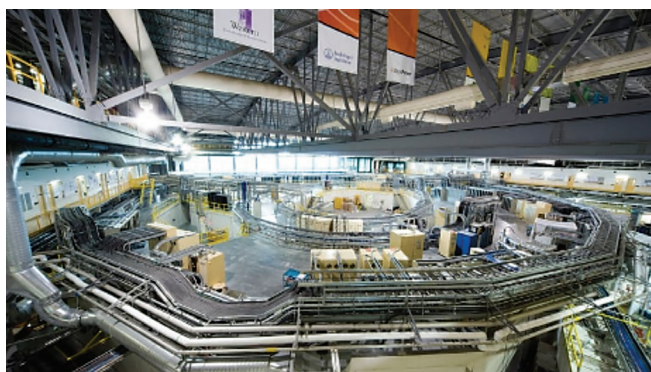
The University of Saskatchewan has built an international reputation in many areas of innovative health, agriculture, environment, and advanced materials research. On this tour, participants will get a first-hand look at two of the world-renowned research facilities located on the campus.

The Canadian Light Source (CLS) produces 'Canada's Brightest Light' enabling research in mine tailing remediation, food security, cancer research, drug development and cutting-edge materials, like semi-conductors and future battery technology.

VIDO-InterVac is dedicated to human and animal infectious disease research and vaccine development, and is home to some of the world's most advanced vaccine research infrastructure. To strengthen Canada's role in responding to infectious diseases, VIDO-InterVac works with international partners to study human and animal pathogens and develop solutions.

Tour 2 – Livestock and Forage Centre of Excellence

The Livestock and Forage Centre of Excellence (LFCE) brings together all aspects of beef cattle research into one entity, providing researchers, faculty, students, industry and producers with a broad-based platform for research and teaching. Research encompasses all aspects of raising livestock on the Prairies, from choosing the proper feed to understanding biology of full-grown cattle.



La sécheresse des années 1930 a ravivé l'intérêt pour la création d'un réservoir dans le Sud de la province. La Prairie Farm Rehabilitation Administration a commencé à évaluer la construction d'un barrage sur la rivière Saskatchewan Sud et a publié un rapport en 1947. En 1958, un accord de financement a été signé par les gouvernements fédéral et provincial. La construction a commencé en 1959. L'ouverture officielle a eu lieu en 1967, et le dernier contrat s'est terminé en 1968.

La reconnaissance officielle du South Saskatchewan River Project se déroulera au barrage Gardiner 100 km au sud de Saskatoon et fera partie des visites techniques élargies se rendant aux divers éléments du projet.

VISITES TECHNIQUES

Nous avons organisé des visites techniques près de Saskatoon pour mettre en lumière des innovations et avancées technologiques de la région.

Visite 1 – Centre canadien de rayonnement synchrotron et VIDO-Intervac

L'Université de la Saskatchewan s'est taillé une réputation internationale dans de nombreux domaines de recherche novatrice en santé, en agriculture, en environnement et en matériaux de pointe. Cette visite permettra aux participants de découvrir deux installations de recherche de

renommée mondiale situées sur le campus.

Le Centre canadien de rayonnement synchrotron (CCRS) produit la « lumière la plus puissante au Canada » utilisée pour de la recherche en assainissement de résidus miniers, sécurité alimentaire, cancérologie, développement de médicaments et matériaux, comme les semi-conducteurs et les technologies des batteries de l'avenir.

VIDO-InterVac se spécialise en recherche sur les infections humaines et animales et en développement de vaccins pour humains et animaux dans les infrastructures de recherche sur les vaccins les plus avancées au monde. Afin de renforcer le rôle du Canada dans la lutte contre les maladies infectieuses, VIDO-InterVac travaille avec des partenaires internationaux pour étudier les pathogènes humains et animaux et élaborer des solutions.

Visite 2 – Livestock and Forage Centre of Excellence (centre d'excellence sur le bétail et les cultures fourragères)

Le Livestock and Forage Centre of Excellence (LFCE) réunit toutes les facettes de la recherche sur le bovin de boucherie en une vaste plateforme de recherche et d'enseignement dont profitent les chercheurs, professeurs et étudiants universitaires, ainsi que les producteurs et autres acteurs de

l'industrie. C'est un lieu de recherche qui englobe tous les aspects de l'élevage dans les Prairies, de la sélection de l'alimentation adéquate

The LFCE focuses on cow-calf, beef-cattle, and forage production, grazing and pasture management. It is designed to be the largest and most comprehensive centre for work on cattle and forage in Canada.

Situated on 27 quarters of land in two locations, the LFCE has a 1,500-head feedlot. To understand reproductive impacts, it also has 300 breeding cows. Facilities include a 24-stall metabolism barn, a cattle-handling area equipped with a hydraulic chute system, 44 pens in the feedlot, and an environmental monitoring unit.

Tour participants will get a personal look at the Clavet site, with hands-on experiences in the metabolism barn, a walking tour of the feedlot, and a presentation of the cow-calf centre.

Tour 3 – Wanuskewin

Heritage Site

Wanuskewin Heritage Park sits above Opimihaw Creek and the South Saskatchewan River near Saskatoon – a window into a part of Canada's history that remains largely undiscovered, and a link to our past unlike any other National Historic Site in Canada. Wanuskewin offers an unbeatable way for you to get to understand the rich history of the park and the Plains Indigenous First Nations people who have lived here for thousands of years. The Wanuskewin area contains some of the most exciting archaeological finds in North America, many of which predate the pyramids of Egypt. There will be opportunities to learn about the importance of these areas to the economy, education, culture, and the environment. The unique cultural experience will only deepen as the park undergoes a \$40 million renewal (thunderingahead.ca), seeks UNESCO World Heritage Site designation, and brings in a small herd of bison.



PROFESSIONAL DEVELOPMENT WORKSHOPS

The conference committee is working hard to develop special workshops and pre-conference professional development opportunities. Changes to the National Building Code are coming into force and better understanding how we engage with Indigenous peoples and communities in our work is increasingly important. Please stay tuned for more information about these hot topics!

SOCIAL EVENTS

Evening events and social activities provide opportunities for networking and visiting some of the city's most interesting locations. We mingle with trade show presenters for the opening evening, enjoying local foods and entertainment. Our plans for Thursday's social evening take us to the rRemai mModern art gallery where the world's largest collection of Picasso linotypes is on display. Two time-limited exhibitions will also be open for your enjoyment, including the *Next Year's Country* exhibition,

à la compréhension de la biologie des animaux adultes.

Le LFCE se concentre sur la production de vaches-veaux, de bovins et de fourrage, ainsi que sur la gestion de la mise à l'herbe et des pâturages. C'est le centre le plus vaste et le plus complet pour les travaux sur le bétail et les fourrages au Canada.

Situé sur 27 quarts de section en deux emplacements, le LFCE comprend un parc d'engraissement de 1500 têtes. Pour étudier les répercussions sur la reproduction, il a également 300 vaches reproductrices. Les installations comprennent un bâtiment à métabolisme de 24 stalles, une aire de manipulation des bovins équipée d'une cage de contention hydraulique, 44 enclos dans le parc d'engraissement et un système de surveillance de l'environnement.

Les participants visiteront le site Clavet et pourront réaliser des expériences pratiques dans le bâtiment à métabolisme. Ils parcourront le parc d'engraissement et auront une présentation du centre vaches-veaux.

Visite 3 – Parc patrimonial Wanuskewin

Le Parc patrimonial Wanuskewin surplombe Opimihaw Creek et la rivière Saskatchewan Sud près de Saskatoon. Il permet d'entrevoir une partie de l'histoire canadienne qui reste encore à découvrir, un lien vers notre passé que vous ne retrouverez dans aucun autre site historique

national au Canada. Une visite à Wanuskewin est une occasion incroyable de comprendre la riche histoire du parc et des Premières Nations des plaines qui y vivent depuis des millénaires. C'est dans la région de Wanuskewin qu'ont été réalisées certaines des découvertes archéologiques les plus intéressantes en Amérique du Nord, dont un bon nombre sont plus anciennes que les pyramides d'Égypte. Les visiteurs ont l'occasion de connaître l'importance de cette région pour l'économie, l'éducation, la culture et l'environnement. Cette expérience culturelle unique est appelée à prendre encore plus d'ampleur puisqu'un projet de 40 millions de dollars (thunderingahead.ca) est en cours de réalisation pour renouveler les installations, obtenir la désignation de site du patrimoine mondial par l'UNESCO et introduire un petit troupeau de bisons.

ATELIERS DE PERFECTIONNEMENT PROFESSIONNEL

Le comité organisateur travaille fort pour planifier des ateliers spéciaux et des activités de perfectionnement précongrès. Parmi les thèmes explorés, des changements au Code national du bâtiment qui seront bientôt en vigueur et l'importance de mieux comprendre comment interagir avec les personnes et communautés des Premières Nations dans le cadre de nos travaux. Restez à l'affût pour en savoir plus sur ces sujets d'actualité.

ACTIVITÉS SOCIALES

Les événements en soirée et les activités sociales sont d'excellentes occasions de réseautage et de découverte des meilleurs attraits touristiques de la ville. À la soirée d'ouverture, les participants et les présentateurs de la foire commerciale pourront découvrir la cuisine et des artistes locaux. La soirée du jeudi se tiendra au musée Remai d'art moderne, où vous pourrez admirer, notamment, la plus grande collection

which features a wide range of Canadian artists showcasing Saskatchewan's history and settler experiences. The second exhibition is a solo exhibition and performance by Canadian artist, Bridget Moser, whose curated show is entitled, *My Crops Are Dying but My Body Persists*.

SPONSORSHIP AND TRADESHOW

Partnership with the CSCE Annual Conference allows your organization to benefit from an internationally recognized and respected organization, while reaching out to prospective clients to:

- Raise awareness of your organization;
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- Access to senior decision-makers and thought leaders in public and private sectors;
- Increased sales of civil engineering products or services;
- Opportunity to test-market a new civil engineering product or service; and
- Increased brand awareness in a targeted market.
- And so much more!

Expected attendance is 400 to 500 total registrants from universities, public sector, large national contractors, suppliers, consultants and students.

Partnership opportunities:

There is still time to register your business as a conference partner or to book an exhibition booth. Several opportunities are still available for all budgets.

Visit csce2019.ca/sponsorships for more details.



de linotypes de Picasso au monde. Le musée prépare également deux expositions temporaires, dont une intitulée *Next Year's Country*, qui présente une vaste gamme d'artistes canadiens illustrant l'histoire et la vie des colons de la Saskatchewan. La seconde exposition est celle de Bridget Moser, une artiste canadienne qui présente en œuvres fixes et animées *My Crops Are Dying but My Body Persists*.



COMMANDITAIRES ET EXPOSANTS

Un partenariat avec le congrès annuel de la SCGC permet à votre entreprise d'être associée à un organisme respecté de renommée internationale et d'avoir accès à des clients potentiels pour :

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Devenir exposant au congrès comporte de nombreux avantages :

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- Occasion de tester un nouveau produit ou service de génie civil
- Augmentation de la notoriété de votre marque dans un marché cible
- Et bien plus encore.

Nous prévoyons accueillir de 400 à 500 participants provenant des universités et du secteur public, employés ou dirigeants de grands entrepreneurs canadiens, fournisseurs, consultants ou étudiants.

Possibilités de partenariat :

Il est encore temps d'inscrire votre entreprise comme partenaire du congrès ou de réserver un kiosque. Plusieurs possibilités sont offertes, pour tous les budgets.

Visitez csce2019.ca/sponsorships/ pour de l'information à ce sujet.

LOCAL ATTRACTIONS

May 19 - 24 NatureCity Festival
May 30 - June 2 Nutrien Children's Festival of Saskatchewan
May 31 Saskatchewan Marathon
June 4 - 7 World Professional Chuckwagon Races

For more information about these and other activities, please visit www.tourismsaskatoon.com.

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OF SASKATCHEWAN



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SASKATOON, SASKATCHEWAN
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MARATHON

PRESENTED BY **Nutrien**



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30 mai-2 juin Nutrien Children's Festival
of Saskatchewan
31 mai Marathon de la Saskatchewan
4-7 juin Courses internationales
professionnelles de chariots (World
Professional Chuckwagon Races)

Pour obtenir de plus amples renseignements sur ces activités et d'autres attraits touristiques locaux, visitez www.tourismsaskatoon.com.

Pour nous suivre, visitez <https://www.linkedin.com/company/36076733> et <https://csce2020.ca>. ■



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SPOTLIGHT ON SPEAKERS AND CONVERSATIONS

Travelling Through Deep Time in the City of Saskatoon

with Dr. Ernie Walker, Department of Archaeology and Anthropology, University of Saskatchewan

Saskatoon, Saskatchewan is a unique community often referred to as the Jewel of the Prairies. It is also a very young city with early settlement beginning in the 1880's as the local history suggests. This is a narrow view, however, and in fact Saskatoon has a continuous pre-Contact archaeological record spanning the past 6,000 years. Centered on Wanuskewin Heritage Park located in the north end of the city, archaeological investigations over the past 40 years have demonstrated the importance of this phenomenal cultural historical record for our First Nations community and beyond.

Travelling Through Deep Time in the City of Saskatoon tells the story of how Wanuskewin came to be and highlights the major themes of the Park and some of the most improbable events that have transpired as part of its developmental history. Wanuskewin is currently on the path to achieving UNESCO World Heritage Site status celebrating the deeper history of the City of Saskatoon and the Northern Great Plains generally with the intent of bringing the world to our doorstep.



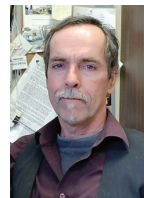
Dr. Ernie Walker is a Distinguished Professor in the Department of Archaeology and Anthropology at the University of Saskatchewan with Associate Memberships in the Department of Geological Sciences, the Department of Anatomy and Cell Biology, and the College of Dentistry. His interests

include North American Prehistory with an emphasis on the Great Plains and American Southwest regions, vertebrate paleontology with an emphasis on Late Pleistocene fauna, and the environmental history of western North America.

Dr. Walker is also interested in environmental conservation and preservation, the development of parks and interpretative facilities, and is a founder of Wanuskewin Heritage Park. For over 40 years, he has worked in a variety of roles towards the establishment of the Park. Dr. Walker is also well known for his work in forensic identification for law enforcement agencies across Canada. He is a Special Constable in the Major Crime Unit of the RCMP F Division and a consultant to the Office of the Chief Coroner, Saskatchewan Ministry of Justice. Dr. Walker received the Saskatchewan Order of Merit in 2001 and the Order of Canada in 2003 for service to law enforcement and the First Nations community.

Building Saskatoon with Jeff O'Brien, City Archivist, City of Saskatoon

Although people have been living around and travelling through this stretch of the South Saskatchewan River for 11,000 years, the first permanent settlement here did not occur until 1883, and for the first 20 years, Saskatoon was little more than a handful of buildings clustered around a non-descript bend of the river. That changed very quickly after 1903, and the next few years the song of Saskatoon was the sound of saws and hammers, of shovels hitting the earth and the voices of those who designed and built Saskatoon. This set the tone for the city's history thereafter, as Saskatoon settled into a cycle of boom and bust; of bursts of frantic activity interspersed with long stretches of [economic malaise]. The result was the city we see around us today, which owes its [character] to the work and ideas of engineers and architects, planners and designers, tradesmen and labourers, from a variety of backgrounds, all of whom brought their own unique perspectives to the job at hand.



Jeff O'Brien was born in Saskatoon and raised in Regina where, despite his best efforts to the contrary, he received an undergraduate degree in Canadian history. He went on to earn a master's degree in archival studies from the University of British Columbia before returning home to Saskatchewan where he eventually settled down

as the City of Saskatoon Archivist in 1997. As the City Archivist, Jeff believes in bringing history out of the archives and into the community. He has written extensively about Saskatoon, including the co-authoring the book *Saskatoon: A History in Photographs* in 2006, and is a regular speaker in city classrooms, at local events and to community groups. As well, he can often be seen and heard on radio and TV talking about the history of his beloved, adopted city.

Building Relationships with Indigenous Communities:

What does true consultation look like? with Dr. Rose Roberts and Dr. Stryker Calvez, University of Saskatchewan.

The fundamentals for building successful, respectful, and meaningful relationships with Indigenous peoples, communities, and organizations are a necessary requirement in this time of Truth and Reconciliation. This half-day workshop scheduled within the general conference program will introduce participants to the Indigenous worldview concepts of wahkotowin and kiyokiwin, and the interaction of both when it comes to relationship building.



Dr. Rose Roberts is Woodland Cree from the community of Stanley Mission, SK and a registered member of the Lac La Ronge Indian Band. Rose has an undergraduate degree in Nursing, masters and doctoral degrees in Community Health and Epidemiology and is a member of the Indigenous Voices team at USask.

Her role as an Educational Development Specialist in Indigenous Engagement and Education is to work with faculty and staff as they progress on their personal and professional paths toward Indigenization, Decolonization and Reconciliation.



Dr. Stryker Calvez is an education specialist, researcher, and evaluator who self-identifies as Michif (Métis; with Cree, Mohawk, French, and Scottish ancestry) from the Red River territory (now Winnipeg). He manages the Indigenous Voices program and supports faculty and staff who are strategizing and engaging in the process

of Indigenization at the University of Saskatchewan. He holds psychology degrees from UBC, USask, and UoGuelph and has applied his knowledge and experiences to help build stronger and more impactful social programs for Indigenous and non-Indigenous people.

Participation in this workshop is limited to 25 delegates, focusing on those conference participants who are working with (or are planning to work with) Canadian Indigenous peoples. For all those interested in learning more, please watch Stryker's TEDtalk available at: https://www.ted.com/talks/stryker_calvez_reconciliation_is_about_relationships.

Specialty Conferences

Environmental Specialty Conference

The 18th International Environmental Specialty Conference (ENV) focuses on the environmental aspect of civil engineering and its importance to a safe, reliable, and sustainable society. The objective of the conference is to bring together academics, researchers and practitioners from around the world in the various fields of environmental engineering to discuss conventional practices, to present recent advancements, innovative solutions, and to share inspirational ideas and visionary thoughts. The 2020 ENV conference topics include many exciting studies on water resource management, wastewater treatment, membrane technology, soil contamination, site remediation, air quality and pollution control, solid waste management, landfill technology, life cycle analysis and sustainability, and environmental impact assessment. Environmental studies with focuses on diversity, inclusion, and climate will also be highlighted.



Your ENV and CSCE Environmental Technical Division chair is **Dr. Kelvin TW Ng**. Kelvin is a Professor and Graduate Coordinator in Environmental Systems Engineering at the University of Regina. His primary fields of interest are in sustainable solid waste management, waste

disposal facility design, and evidence-based waste policy. Kelvin has earned several national and provincial grants and has been recognized through a variety of teaching and research awards for his contributions to civil and environmental engineering.

Engineering Materials Specialty Conference: Emerging materials for sustainable civil infrastructure

The Engineering Materials Specialty Conference has a particular focus on how engineering materials contribute to a sustainable, durable and resilient civil infrastructure. The conference will explore the applications and case studies of traditional and emerging materials in civil infrastructure, studies on durability, repair, service life performance, sustainability and other related aspects of materials in civil engineering.



Dr. Shahria Alam is a Full Professor in the School of Engineering, and the Director of Green Construction Research & Training Center at the University of British Columbia. He is also the Director of the Applied Laboratory for Advanced Materials & Structures (ALAMS) at UBC. He received his PhD in Civil Engineering

from Western University in 2008. His research interests include smart materials and their structural applications in bridges and buildings; seismic isolation devices, seismic rehabilitation of structures; performance-based design; recycle/reuse of industrial wastes. Dr. Alam is currently serving as the Chair of the Engineering Mechanics and Materials Division of the Canadian Society for Civil Engineering (CSCE).

Structures Specialty Conference



Dr. Ashraf El Damatty is Professor and Chair of the Department of Civil and Environmental Engineering at Western University. He is a leader in his field, serving as Editor-in-Chief (North and South America) Wind and Structures, International Journal Research Director of WindEEE Research Institute and a member

of the Public Infrastructure Vulnerability Committee (PIEVC) of Engineers Canada. His research has had significant impact on our understanding of the relationship between wind and infrastructure, leading to several invitations for keynote presentations and fellowships. Dr. El Damatty is the Chair of the Structures Division of CSCE and Chair of the Structures Specialty Conference at CSCE 2020 in Saskatoon.

Transportation Specialty Conference



Dr. Gordon Lovegrove is the CSCE 2020 chair for the Transportation Specialty Conference. He is an Associate Professor at UBC Okanagan and an established expert in the field of transportation engineering. His passion for the design and creation of sustainable communities is reflected in his research and teaching, including co-

authorship of the ASCE best practise guide for practitioners and students on 'Engineering for Sustainable Communities'.

Dr. Lovegrove contributes to the development of web-based, empirical safety planning tools, and, field-based, experimental data collection and analysis tools. He and his research team are also heavily involved with the Hydrail (Hydrogen fuel-cell/battery hybrid rail power) technology program that seeks to convert all North American regional passenger and freight rail from diesel to zero-emission electric rail systems.

General Conference Track Sessions

Infrastructure and Asset Management

The Infrastructure & Asset Management track is excited to present the latest research and innovation in the field infrastructure and asset management. As an inter-disciplinary field of study, this track contains a varied range of topics such as identifying and mitigation climate change vulnerabilities, leveraging new technology such as BIM to improve facilities management, improving data standardization for rural municipalities or understanding the adoption of sustainable infrastructure practices in Canada. This track offers great learning opportunities for all delegates and will showcase some of the latest research and work done in this rapidly changing space.

The track is chaired by Mike Benson, a Junior Engineer with R.V. Anderson Associates Ltd. based in Fredericton, NB. Mike currently serves as the national Asset Management Committee chair for the Canadian Society for Civil Engineering (CSCE), the New Professional Network Committee chair for the Canadian Network of Asset Managers (CNAM) and is actively involved with helping guide asset management practices across the country.

Stormwater

Three co-chairs have collaborated to create a special series of presentations about impacts of climate change on storm intensities and volumes, as well as the management of these increases in terms of both quantity and quality of water. Our co-chairs come from USask, SaskWater, AE.



Dr. Kerry McPhedran is leading the Stormwater track. He is an Assistant Professor in the Department of Civil, Geological and Environmental Engineering at the University of Saskatchewan (USask) and a licensed Professional Engineer in Saskatchewan. His research area is environmental engineering with focusses in municipal water and wastewater treatment, industrial wastewater treatment, and Indigenous water-related research.



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#Saskatooning – Why you should come to CSCE 2020 and what to check out while you're here



Roanne Kelln,
CSCE Saskatoon Section Chair

Saskatoon – Toon Town (Toontown?), Paris of the Prairies, or #yxe to many with social media accounts (OK, myself included). I was born and raised in the Queen City, but Saskatoon has been my home for over a decade. My move to Saskatoon was necessitated by my choice of engineering discipline – I knew from high school that I wanted to be a civil engineer – but my indefinite stay here is because of my love of this city.

The local Saskatoon CSCE Section, the local organizing committee, and the CSCE membership in Saskatoon are all really excited to be welcoming guests from around the country and beyond to our pretty prairie metropolis this spring! The conference program promises to offer many enriching sessions and experiences.

The conference hotel is in the heart of Downtown Saskatoon, the Delta (formerly the Radisson, for those familiar with the city). The downtown borders the South Saskatchewan River to the south, and the river front is one of my favourite places in Saskatoon. While you are here for the conference, take the time to walk down 19th St. to Kiwanis Park. If you follow the Meewasin Valley Trail northward, you will see sites like the historic Delta Bessborough Hotel, behold monuments and landscaping along the river front, and traverse the University Bridge, which is one of Saskatoon's many iconic bridges that earned us the nickname of The Bridge City. If you follow the walking trail southwards, you will see

Friendship Park, the amphitheatre area, and the Remai Modern Art Gallery (the site of this year's social evening as part of the conference). The landscape architecture around this area is beautiful. And if you walk by the amphitheatre on a Monday or Wednesday evening, you will hear the sounds of the claves and see the moves of some of Saskatoon's salsa dance community – it's completely free to check it out!

The downtown also boasts many restaurants that have put Saskatoon's culinary scene on the map. Ayden Kitchen + Bar offers dishes with inspired tastes and locally sourced ingredients. The Cornish hen is excellent, and if you are looking for a local favourite, I highly recommend ordering their perogies. The chef behind Ayden is also the mastermind behind Sticks and Stones, a great spot for ramen. And for casual fare and cocktails, I recommend The Rook and Raven on 2nd Avenue.

If you have a bit of time during your visit, we have many other attractions in Saskatoon and the surrounding area, such as the Western Development Museum and Wanuskewin Heritage Park. Tourism Saskatoon has much more information on their website, <https://www.tourismsaskatoon.com>.

We hope to see you in Saskatoon for the 2020 CSCE National Conference! ■



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Caroline Benchetrit BCOMM, MBA, PhD (ABD) has twenty years of experience working with Presidents and their senior teams in global multinationals and medium sized businesses. As an Associate of two internationally based consultancies Caroline has become a subject matter expert in areas of Strategic Planning and Capabilities-Based Partnerships across industries including Pharma, Biotech, Med Device, IT, Telecomm and Aerospace.

Learn more @ csce.ca/course

Dr. Donald Mavinic, FCSCCE, appointed to the Order of Canada

By Lyanne St. Jacques, Director, Marketing & Communications, CSCE

The Canadian Society for Civil Engineering is proud to announce that Dr. Donald Mavinic, a Fellow Member of the Society, has been appointed one of the country's highest honours. On December 28, 2019, Dr. Donald Mavinic was officially appointed as a Member of the Order of Canada.

Dr. Mavinic completed his Bachelor's degree in 1969 at the University of Windsor. While he applied to graduate school and for scholarships, he decided to take the summer off. He ended up looking for work and doing some surveying for the town, but found nothing that 'turned his crank', as they say. Ultimately, he received a Federal Government NRC scholarship for three years, to pursue both a Masters and Doctorate. It was there that he met now Professor Emeritus himself, J.K. Bewtra. Originally from Iowa, Bewtra had settled in Windsor and had started a new program in Sanitary Engineering – with help from none other than Dr. Mavinic. (Sanitary Engineering is better known today as Environmental Engineering and spans a larger array of niche professions).

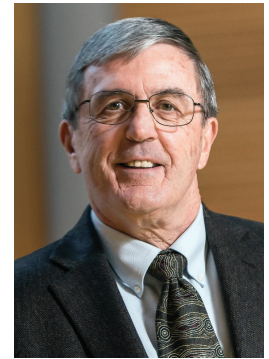
Dr. Mavinic completed his Ph.D. in 1972 and that's when things really took a turn. At that time, it was a challenge to find work, especially as an academic, when one had an education as significant as a Ph.D. But this wasn't the case for very long for Dr. Mavinic. Just before Christmas in 1972, he received a call to attend an interview for the position of a professor at UBC. The offer was confirmed before the holidays and so set into motion a move across the country, but not before taking the road trip of a lifetime. It was July 1973 when Dr. Mavinic and his wife set out across the unbeaten paths of Canada's glorious landscape.

Serendipitously, it was just around that time that CSCE had ventured independently from the Engineering Institute of Canada to start its own member-based society. Dr. Murray Temple, one of the original founders of CSCE, along with John Bell, Jack Priestman, Peter Wright, Denis Mitchel and others were determined to bring engineers together to 'develop and maintain high standards of civil engineering practice in Canada and to enhance the public image of the civil engineering profession.'¹

Dr. Temple introduced Dr. Mavinic to CSCE and he jumped in with both feet. He started and chaired the Student Activities Committee (SAC). He also started the Environmental Division of CSCE, breaking away from the Municipal Division, for which he was the first Chair.

Dr. Mavinic has had an incredibly fascinating and productive career

“I am so very humbled by this recognition and thankful for the attention that it will bring to the great efforts that environmental engineers put into their work every day. I am lucky to work in a profession that I am not only passionate about, but one that with every success will help society, while at the same time – protect our natural environment.”



Dr. Donald Mavinic, P. Eng.,
Professor Emeritus at
UBC, Department of
Civil Engineering

and is internationally known for his work in environmental engineering and his many developments in the field of wastewater management, including the creation of Crystal Green®.

And yet, even on the cusp of his retirement after 44 and a half years at UBC, he would receive yet another life-changing phone call. This time, it would be from the Governor General's office, and once again, just before Christmas. The call was to let him know that he had been selected to join the Order of Canada and it would be announced officially on December 28. Dr. Mavinic was completely stunned and humbled by the recognition. The ceremony will take place next fall and Dr. Mavinic looks forward to travelling eastbound this time to visit some old haunts and some familiar faces.

Dr. Mavinic has been an active volunteer in his community for more than 15 years. Starting with the fire department and their local toy drive, and now sitting on the Advisory Board for the Food Bank, along with a handful of other voluntary commitments. He is certainly not afraid to keep busy. Maybe it's his passion, maybe it's to keep him out of trouble, perhaps it's a little of both.

When asked to share some pearls of wisdom, he didn't cut me short. In fact, I believe these words can apply to all people in all professions. He said:

1. Regardless of your profession, think globally, but act locally.
2. Get involved in networks. The benefits of getting involved in a network like CSCE is the very reason that I have been able to accomplish everything that I have to date. It's access to opportunity, to people, to ideas, and to an occasion that can completely change your life.
3. Never think you know everything – about anything. Learning is a lifelong experience.

Thank you, Dr. Mavinic and once again, congratulations.

¹ www.csce.ca

² <https://www.gg.ca/en>

About the Order of Canada

Created in 1967, the Order of Canada is one of our country's highest honours. Presented by the governor general, the Order honours people whose service shapes our society, whose innovations ignite our imaginations, and whose compassion unites our communities.²



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