

2021

ANNUAL REPORT



ONTARIO
SOCIETY OF
PROFESSIONAL
ENGINEERS

About

The Ontario Society of Professional Engineers 2021 Annual Report

The Ontario Society of Professional Engineers (OSPE) is the voice of the engineering profession in Ontario. We represent the entire engineering community, including professional engineers, engineering graduates and students who work or will work in several of the most strategic and influential sectors of Ontario's economy.

OSPE elevates the profile of the profession by advocating to government, offering valued member services, and providing opportunities for ongoing

OSPE's 2021 Annual Report provides an overview of the association's work and impact on behalf of Ontario's engineering community from January 1 through December 31, 2021. This report was prepared for OSPE's Annual General Meeting on May 9, 2022 and outlines how the organization's initiatives and activities met the tactical goals laid out in Engineering the Future Together, our 2019-2022 Strategic Plan.



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Message from the CEO

Last year was our second year living with COVID-19 and engineers continued to innovate solutions despite the emergence of new variants. With distanced collaboration and exemplary work, engineers have built a multitude of solutions as well as a pathway for continued advocacy for public safety and a thriving community. OSPE is proud to be a platform for engaging discourse and a gateway for effective advocacy.

Our signature events, including the Engineering Conference and the Ontario Professional Engineers Awards ceremony, remained virtual but the connections made among the attendees exceeded expectations. The Engineering Conference attracted over 2,000 likeminded professionals, interested in advancing engineering in Ontario. Also, to replicate the conversations between engineers, OSPE launched our Engineering The Future podcast, with OSPE Board Member Jerome James, P. Eng., as the host. This podcast hosted amazing conversations about engaging topics including engineering innovation, new emerging research, diversity and allyship, and it found ways to encourage our members, as well as the broader engineering community, to get involved in these important conversations.

The engineering community's longstanding history of evidence-based action and practical problem solving allowed the industry to continue to adapt to the rapid changes of COVID-19-related restrictions. Within the engineering community, brilliant minds came together for the safety of our children, teachers, elders, medical professionals and staff by advocating for proper ventilation in schools and long-term care homes. Engineers have proven themselves to be vital in combatting not only the spread of COVID-19, but proactively protecting communities against emerging threats.

As our members have focused on what they could contribute to the community, they have often ignored the importance of their own mental health and the need for allyship, education and a sense of community. OSPE's response was to host a panel discussion that gave engineers the opportunity to pause and reflect on their own personal health. OSPE has always, and will continue to, advocate for the health and well-being of our members. On top of our advocacy efforts to achieve an equitable future for all engineers, OSPE also created a platform to highlight the remarkable engineering community and the talent that lies within it. Our ENGpath career portal, launched this year, creates a space for engineers to connect with industry leaders and potential employers. It also provides access to career-related interactive programs and virtual workshops. Our Ontario Engineering Academy (OEA) supplements this offering with defined learning streams that allow our members to develop and grow, both personally and professionally.

Of course, none of this would have been possible without the valued contributions and support of our volunteers, members, staff and partners. I can't thank you enough for believing in our mission and working with us. I am excited to ring in 2022 with a dynamic new Strategic Plan, developed in consultation with you, our members, and with the oversight of our elected Board of Directors. Stay tuned!

A handwritten signature in black ink that reads "Sandro Perruzza". The signature is fluid and cursive.

Sandro Perruzza, B.Sc., CRSP
Chief Executive Officer



Message from the President & Chair

Reflecting on the accomplishments engineers achieved in 2021 during these trying times is inspirational. Globally, engineers used their skills and creative minds to problem solve and come up with solutions for schools, hospitals, workplaces, and communities. In doing so, our chosen profession continues to demonstrate that we are leaders in the actions to mitigate and adapt to the impact of COVID-19 on society.

OSPE members perpetually show their passion for the work they do, and our advocacy and engagement efforts expanded in 2021. Engineers in Ontario strive to solve problems and improve circumstances for everyone, and they need an environment that enables these efforts. In recognition of that, OSPE members and staff collaborated to author a letter to the Attorney General with recommended changes to the Professional Engineer's Act. The recommended changes advocated for engineers through every career stage and included international engineering graduates. In 2021, we celebrated that Ontario has proposed legislation to make the licensing process less strenuous and more inclusive. Our team has made the greatest effort in keeping the advocacy energy alive and, despite the uncertainty of these times, OSPE continues to make beneficial impacts in advocacy spheres for our profession and society.

Engineers at the start of their career or nearing retirement are inspiring individuals and show what it is to be a Navigator instead of a victim. Our focus this year included our push for officials in Queen's Park to adopt a Qualifications Based Selection (QBS) framework, providing better opportunity to all engineering firms to be selected to execute quality projects based on credentials, ability, and capacity, instead of the lowest price. In line with our vision, OSPE continues to push for an equitable and inclusive future for all engineers.

Serving as OSPE's President these past months has provided me with a learning experience that I will cherish. I encountered diverse opinions. I enjoyed numerous arguments and debates. I experienced so many "WoW" moments. I felt elation when successes were celebrated, exhaust after a long meeting, and deep sorrow when death impacted my family and friends. The spectrum of emotions that I felt and encountered with others at OSPE as we brainstormed, solved problems, advocated for each other, and lived our lives, showed me that the faith I put in humanity is not misplaced. My closing words for 2021 is that at OSPE I have found a place where I feel I belong. Come join me.

A handwritten signature in black ink that reads "Mark Frayne". The signature is fluid and cursive.

Mark Frayne , P. Eng.
President and Chair

OSPE's 2021-2022 Board of Directors

OSPE could not reach its strategic goals without the continued support of our Board of Directors.
Thank you for committing so much time and energy to advocating for and giving back to your profession.



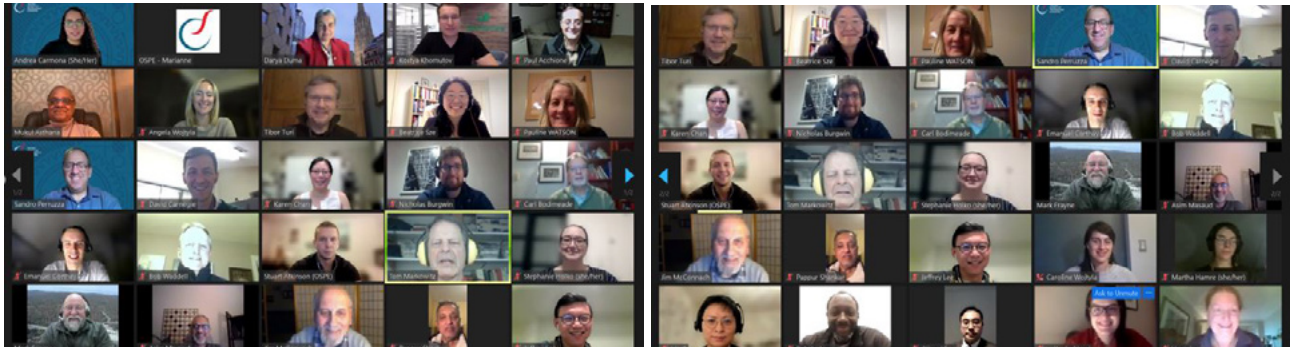
Top row: Réjeanne Aimey, P.Eng. (Past Chair), Mark Frayne, P.Eng. (President and Chair), Peter Marcucci, P.Eng., David Carnegie, P.Eng.

Middle row: Jerome James, P.Eng., Nicholas Burgwin, P.Eng. (Treasurer), Anna Gkalimani, P.Eng., Dr. Marilyn Powers, P.Eng. (Vice Chair)

Bottom row: Irene Sterian, P.Eng., Sue Tessier, P.Eng. (Secretary), Stephanie Holko, P.Eng., Ron Clifton, P.Eng.

OSPE Volunteers

Thank you to our dedicated members who contribute their time and expertise to volunteer with OSPE. Your camaraderie and collaboration make this engineering community so welcoming and impactful.



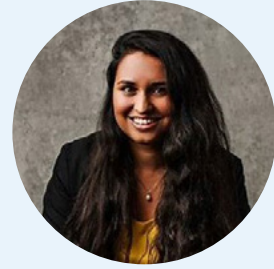
2021 President's Award Winners



Emanuel Corthay, P.Eng.
Professional Engineer Category,
2021



Emily Thorn Corthay, P.Eng.
Professional Engineer Category,
2021



Vanessa Raponi, EIT
Young Professional Category,
2021

OSPE Committees

Audit and Finance Committee

Chair

Nicholas Burgwin, P.Eng., Treasurer

Members

David Carnegie, P.Eng.

Ron Clifton, P.Eng.

Anna Gkalimani, P.Eng.

Stephanie Holko, P.Eng.

Board Development and Strategic Planning Committee

Chair

Dr. Marilyn Powers, P.Eng.

Members

Réjeanne Aimey, P.Eng.

David Carnegie, P.Eng.

Peter Marcucci, P.Eng.

Canadian Society of Professional Engineers Representatives

Sue Tessier, P.Eng., President

Daniel Young, P.Eng.,

Vice President/Secretary

Jonathan Hack, P.Eng., Treasurer

Executive Committee

Chair

Mark Frayne, P.Eng., President and Chair

Members

Dr. Marilyn Powers, P.Eng., Vice Chair

Nicholas Burgwin, P.Eng., Treasurer

Sue Tessier, P.Eng., Secretary

Réjeanne Aimey, P.Eng., Past Chair

Sandro Perruzza, CEO

Hamilton Halton

Engineering Week Committee

Chair

Sandro Perruzza

Members

Anthony Chryssafis

Jennifer Clarke, P.Eng.

Frank Lasowski, P.Eng.

Umar Malik, P.Eng.

Gary Moore, P.Eng.

Ron Scheckenberger, P.Eng.

Ian Shaw, P.Eng.

Anita Sparre, C.E.T.

Human Resources Committee

Chair

Mark Frayne, P.Eng.

Members

Peter Marcucci, P.Eng.

Dr. Marilyn Powers, P.Eng.

Joint Relations Committee

Representatives

Réjeanne Aimey, P.Eng.

Mark Frayne, P.Eng.

Jerome James, P.Eng.

Dr. Marilyn Powers, P.Eng.

Sandro Perruzza

Engineers Foundation For Education

Representatives

Jonathan Hack, P.Eng.

Baijul Shukla

Membership Advisory Committee

Co-Chair

Nicholas Burgwin, P.Eng.

Baijul Shukla

Members

Behrooz Abbaszadeh, EIT

Eman Al-Ali, P.Eng.

Nicholas Burgwin, P.Eng.

David Carnegie, P.Eng.

Lawrence Chen, P.Eng.

Charles Chettiar, EIT

Jonathan Hack, P.Eng.

Siva Kanaganathan, P.Eng.

Arvin Fradly Lobo, EIT

Shahan Shaikh, P.Eng.

David Wong, P.Eng.

Nominations Committee

Chair

David Carnegie, P.Eng.

Members

Ron Clifton, P.Eng.

Jonathan Hack, P.Eng.

Christina Visser, P.Eng.

Ontario Engineering Academy Steering Committee

Chair

Laura Yu, P.Eng.

Members

Nick Burgwin, P.Eng.

Dave Carnegie, P.Eng.

Dr. Marilyn Powers, P.Eng.

Irene Sterian, P.Eng.

OSPE Task Forces & Working Groups

Energy Task Force

Chair

Steve Pepper, P.Eng.

Members

Matthew Cable, P.Eng.
Emily Thorn Corthay, P.Eng.
Brent DeBow, P.Eng.
Anita Eisakhani, P.Eng.
Ali Hoss, P.Eng.
Frank Lasowski, P.Eng.
Michael Loken, P.Eng.
Jim McConnach, P.Eng.
Pappur Shankar, P.Eng.
Handan Tezel, P.Eng.
Bob Waddell, P.Eng.

Subject Matter Experts

Paul Acchione, P.Eng.
Ismail Barakat, P.Eng.
Kostyantyn Khomutov, MASc
Tugrul Kodaz, EIT
Sushma Narisetty, P.Eng.
Ramtin Rasoulinezhad

Environment Task Force

Chair

David Carnegie, P.Eng.

Members

Bob (Robert) Awharen, EIT
Carl Bodimeade, P.Eng.
Jeffrey Lee, P.Eng.
Tom Markowitz, P.Eng.
BR Ravishankar (Ravi), P.Eng.
Pauline Watson, P.Eng.
Caroline Wojtyla

Subject Matter Experts

Vera Belousova, P.Eng.
Franco DiGiovanni, LL
Martha Hamre, EIT

Infrastructure Task Force

Chair

Oliver Xiao, P.Eng.

Members

Veronica Bergs, P.Eng.
Darya Duma, P.Eng.
Stephanie Holko, P.Eng.
Dan Lahey, EIT
Cassandra Lee Taha, P.Eng.
Asim Masaud, P.Eng.
So Ming Chiang, P.Eng.
Nelson Su, EIT

Research and Innovation Task Force

Chair

Nicholas Burgwin, P.Eng.

Members

Mukul Asthana, P.Eng.
Eric Blaise
Emanuel Corthay, P.Eng.
Duncan Stewart
Jeremy Wang, EIT
Laura Yu, P.Eng.

Subject Matter Experts

Sujoy Chatterjee
Gustav Rodricks, P.Eng.
Beatrice Sze, P.Eng.
Dr. Tibor Turi, P.Eng.
Ivette Vera-Perez
John Wang, P.Eng.

Professional Engineers Act Working Group

Chair

Mark Frayne, P.Eng.

Members

Réjeanne Aimey, P.Eng.
Annette Bergeron, P.Eng.
David Brown, P.Eng.
Bernard Ennis, P.Eng.
Jerome James, P.Eng.
Bruce Matthews, P.Eng.

Diversity and Inclusion Task Force

Chair

Angela Wojtyla, P.Eng.

Members

Jenan Abderrahman
Réjeanne Aimey, P.Eng.
Lauren Anne Briens, P.Eng.
Joy Chianu, EIT
Anna Gkalimani, P.Eng.
Janelle Hinds
Tiffany Joseph
Nazli Kaya
Shivani Nathoo, EIT
Manraj Pannu, P.Eng.

Subject Matter Experts

Karen Chan, P.Eng.
Shelly Deitner, P.Eng.
Nigel Fung, P.Eng.

Critical Minerals Working Group

Chair

Mark Frayne, P.Eng.

Members

Nigel Fung, P.Eng.
Ken Kopechanski, P.Eng.
Pierre Labrecque, P.Eng.
Marilyn Spink, P.Eng.
Sue Tessier, P.Eng.
Troy Williams, P.Eng.

We would also like to extend a
special thanks to all the OSPE members
who presented at our 2021 Engineering Conference.

The knowledge and leadership you shared
with the rest of your profession is inspiring.

Paul Acchione, P.Eng.
Peter Darveau, P.Eng.
Arun Dixit, P.Eng.
Dr. Thomas Duever, Ph.D., P.Eng.
Chelsea Elliot, P.Eng.
Phil Fung, P.Eng.
Akira Jones, P.Eng.
Dr. Kim Jones, Ph.D., P.Eng.
Yousef Kimiagar, P.Eng.
Bruce Matthews, P.Eng.

Nick Mocan, P.Eng.
Dr. Emily Moore, Ph.D., P.Eng.
Dr. Marilyn Powers, Ph.D., P.Eng.
Jennifer Quaglietta, P.Eng.
Dr. Farzad Rayegani, Ph.D., P.Eng.
Dr. Douglas Reeve, Ph.D., P.Eng.
Pete Samson, P.Eng.
Wayne Shaefer, P.Eng.
Marilyn Spink, P.Eng.

Partners

Thank you to our dedicated partners for helping us lead critical conversations and shape public policy that will impact the future of the engineering profession.

OSPE Partners

President's Circle



Director's Circle



Influencer's Circle



Leader's Circle



Supporter's Circle



OSPE Event Partners



Government of Canada / Gouvernement du Canada Agriculture and Agri-food Canada / Agriculture et Agroalimentaire Canada	Government of Canada / Gouvernement du Canada Canada Coast Guard / Garde côtière canadienne	Government of Canada / Gouvernement du Canada Canada Border Services Agency / Agence des services frontaliers du Canada	Government of Canada / Gouvernement du Canada Canadian Nuclear Safety Commission / Commission canadienne de sûreté nucléaire
Government of Canada / Gouvernement du Canada Employment and Social Development Canada / Emploi et Développement social Canada	Government of Canada / Gouvernement du Canada Environment and Climate Change Canada / Environnement et Changement climatique Canada	Government of Canada / Gouvernement du Canada Innovation, Science and Economic Development Canada / Innovation, Sciences et Développement économique Canada	Government of Canada / Gouvernement du Canada National Defence / Défense nationale
Government of Canada / Gouvernement du Canada National Research Council Canada / Conseil national de recherches Canada	Government of Canada / Gouvernement du Canada Public Services and Procurement Canada / Services publics et Approvisionnement Canada	Government of Canada / Gouvernement du Canada Transport Canada / Transports Canada	Government of Canada / Gouvernement du Canada Treasury Board of Canada Secretariat / Secrétariat du Conseil du Trésor du Canada



Engineering the Future Together

Through another year of the COVID-19 pandemic, OSPE members remained steadfast in achieving the three strategic pillars of the 2019-2022 Strategic Plan.

Engineers Lead

Solidify OSPE's position as "the voice" of the profession and its reputation as the association where engineers gather, share expertise and provide recommendations on issues facing the profession and society.

Engineers Care

Elevate awareness of the role engineers play in making the world a better place and deepen respect for the engineering profession in Ontario

Engineers Unite

Strengthen and grow OSPE's equitable, diverse and inclusive engineering community and deliver unparalleled value at every stage of our members' careers



Mobilizing to Combat COVID-19

Engineers Advocated for Proper Ventilation in Schools and Long-Term Care Homes to Prevent COVID-19

Ahead of children returning to the classroom in March and September, OSPE called on the government to consult with engineers, scientists, HVAC specialists and other experts to adequately address the airborne transmission of COVID-19, particularly in indoor settings where people gather for long periods of time, such as schools.

OSPE was featured on CTV News, CP24 and CBC News regarding its calls for the government to improve school and long-term care ventilation systems.



“Engineers know that air quality is bigger than COVID-19. Indoor Air Quality (IAQ) affects how many sick days Ontarians take off work, how happy we are and how long we live. Ontario has the opportunity and technology to make the air in buildings where we live and work cleaner than the air outside...The cost of investment is small compared to the benefits we will reap in finance, health and wellness.”

— OSPE letter to the Hon. Stephen Lecce, Minister of Education

Engineers Call for the Adoption of Qualifications Based Selection as a Post-COVID-19 Economic Recovery Tool

OSPE renewed its focus on pushing government officials at Queen's Park to be aware of the benefits of a QBS framework for the procurement of engineering services in Ontario. By adopting QBS as a best practice, the government will select engineering firms based on their credentials, previous performance, and availability to do a project, over low-fee bidding structures.



In May 2021, OSPE hosted a virtual panel discussion introducing the basic processes, mechanisms, benefits and challenges associated with QBS.

In October, engineers, technologists, and architects, discussed the benefits, opportunities, and challenges of implementing QBS in Ontario. The role professional engineers and the engineering community will have in the implementation of this framework was discussed at OSPE's 2021 Engineering Conference. OSPE also had the opportunity of meeting with senior policy advisors from the Ministry of Infrastructure to reiterate the numerous benefits QBS would have for the engineering community and all taxpayers.



Engineers Use Wastewater to Detect COVID-19

One of the ways that engineers made their mark in Ontario last year was through discovery. In Ottawa, it was learned that sewage systems – the arteries under every city, ensuring the steady flow of wastewater to treatment plants – contained ribonucleic acid (RNA) fragments allowing researchers to discover levels of COVID-19. This simple discovery may have long-standing repercussions for pandemic preparation across the globe.

OSPE member Michael Loken, P.Eng., along with the municipalities of Ottawa and Waterloo, are leading the way in this new research.



Engineers Discuss Opportunities and Challenges for Hydrogen in Ontario to Rebuild from the Impacts of COVID-19

In March 2021, OSPE welcomed the Honourable Jeff Yurek, then Minister of the Environment, Conservation and Parks for a keynote address on the development of the government's hydrogen strategy, along with leaders from OSPE's Energy Task Force, including Emily Thorn Corthay, P.Eng., and Bob Waddell, P.Eng.

The virtual event also featured a panel discussion with Rob Harvey, P.Eng., Director of Energy Infrastructure in the Fuel Cells and Hydrogen Technologies group at Cummins, and Andrew Stuart, P.Eng., Co-Founder of Hydrogen Optimized. OSPE's Energy Task Force is focused on Ontario's key technology, regulatory and business opportunities in developing low-carbon hydrogen, the potential for hydrogen to contribute to Ontario's 2030 greenhouse gas emission reduction target, and actions Ontario can take to help local companies get ready to meet expected international demand.

OSPE Receives Funding for Research Projects and Supports for Underrepresented Groups and Women in Engineering to Recover from the impacts of COVID-19

In 2021, OSPE was successfully approved for funding by various agencies for several exciting initiatives.

Leveraging Public Sector Procurement Policies to Expand Opportunities for Women in Engineering

Funded by: Women and Gender Equality Canada

This 30-month project will support a feminist response and recovery from the current impacts of COVID-19 through systemic change. OSPE will achieve this by developing and promoting inclusive language for public sector procurement of engineering services, thereby fundamentally expanding career opportunities for diverse women in engineering and the attractiveness of an engineering career to young women.

New Barriers in Engineering and Technology Jobs: The Uneven Impact of Working-at-Home on Recent Graduates, Women and Newcomers

Funded by: Future Skills Centre

This project will study the impact of working-from-home on new graduates, women, and newcomers to Canada in engineering and technology jobs.

Bringing Engineers Together

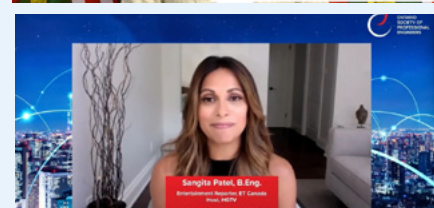
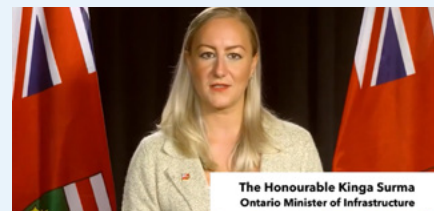
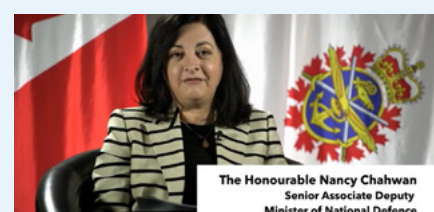
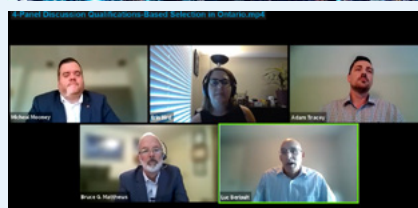
The 2021 Future of Engineering Conference October 6 & 7, 2021

Canada's largest engineering, recruitment and professional development conference.

2000+
Registrants

52
Virtual Booths

80+
Conference Partners



OSPE launches new ENGpath career portal to connect engineers with industry leaders

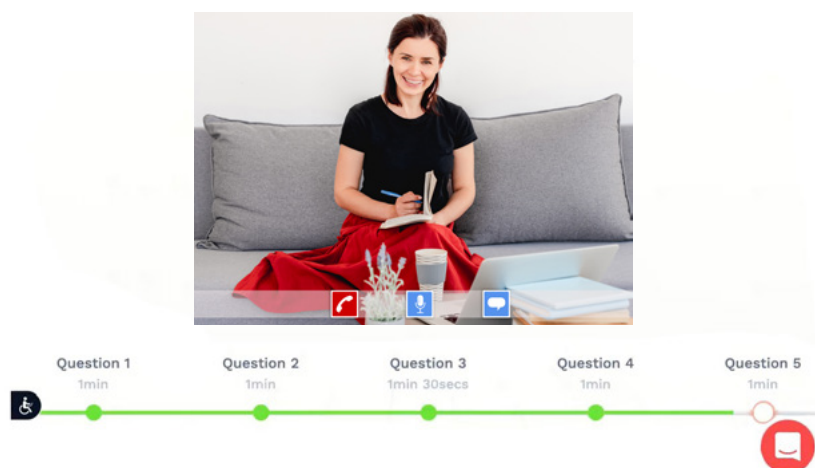
As the pandemic continued into 2021, Ontarians needed to adapt to a new way of navigating the labour market. To fulfill this need, OSPE developed a new series of virtual events and resources to connect engineering talent with some of the top employers in the industry. OSPE's ENGpath career portal ensures Ontario's best and brightest have all the tools to make their mark, and engineering employers have access to a relevant pool of qualified candidates to hire.

In addition, as part of OSPE's commitment to creating a diverse and inclusive profession, the new ENGpath career portal provides engineers and engineering

graduates with a number of fully accessible and interactive programs to connect with some of the best employers in Canada. OSPE has instituted three virtual projects to connect skilled engineers and employers.

They are:

- Virtual Employment Events (VE3s) - applicant screening and interviewing
- Virtual Interview Simulator (VIS) - applicant interview training for video interviewing
- Virtual Job Search Workshops (VJSW)



**Record and submit your answer
to each employer question**

**VIRTUAL ENGINEERING
EMPLOYMENT EVENTS VE3s**

OSPE expands its online network to reach more members of the engineering community province-wide



OSPE launches Engineering the Future podcast with host Jerome James, P.Eng., OSPE Board member.

- Launched in March 2021
- 16 episodes with professional engineers and OSPE members, thought leaders and collaborators about the latest in engineering in Ontario and Canada
- More than 1,000 downloads

Engineers continue to share expertise online through OSPE's ENGTalks

20+
videos
2000+
views



OSPE hosts Conceptualizing Black Experiences virtual panel during Black History Month



In partnership with the University of Toronto and Spin Master, OSPE generated awareness of the barriers facing Black individuals in engineering spaces and challenged the audience to participate in the cultural shift needed to create an inclusive profession.

OSPE Engages On Mental Health

As a profession, engineering has always been characterized by its rigour, emphasis on productivity, resiliency and hard work. Only in recent years, after seeing the impact of this on engineering students and graduates, have institutions acknowledged the importance of mental health.

In collaboration with Spin Master and the University of Toronto, OSPE hosted a virtual panel discussion focused on mental health in engineering, its importance, and the challenges of addressing it in workplace settings or institutions. Shivani Nathoo, EIT, who served as moderator, was joined by Dr. Alison Olechowski, PhD, Assistant Professor, Mechanical Engineering at the University of Toronto, Herman Chan, P.Eng., Director, Product Development at SpinMaster, and Laura Milsom, Director, People and Culture and Modern Niagara Group Inc.

Addressing Challenges within the Profession

Engineers Recommend Changes to the Professional Engineers Act

In 2021, OSPE reinstated its Professional Engineers Act Working Group (PEAWG) to create an initial list of proposed changes to submit to the Ministry of the Attorney General for consideration, as part of the Ontario government's Red Tape Reduction Bill.

Throughout the summer, the PEAWG met to discuss and draft an initial submission for government. The first submission from the group, sent to the Attorney General, the Honourable Doug Downey, as well as Professional Engineers Ontario (PEO), Engineers Canada, the Association of Consulting Engineering Companies-Ontario (ACEC-Ontario), the Attorney General Critics and the Fairness Commissioner on October 4, 2021, included recommended changes to the Act in the following areas:

1. Regulatory Focus
2. Cease Regulating the Consulting Engineer Title
3. Backstopping PEO Accountability through Ministerial Action
4. Time Limits for Licence Application Processing
5. Eliminate the Requirement for 12 Months of Canadian Experience for Licensure
6. Grants, Scholarships, Bursaries and Prizes
7. Employment Advisory Service / Voluntary Retirement Savings Plan
8. Provide a Single Type of Certificate of Authorization (C of A)
9. Joint Practice Board

OSPE also held a virtual panel discussion with members of the PEAWG and member consultation on changes to the Act in November.



Supporting International Engineering Graduates

OSPE has long advocated for removal of barriers that prevent many International Engineering Graduates (IEGs) from practicing their profession in Canada. Barriers to licensure keeps many talented engineering graduates from contributing to the Ontario and Canadian economies, and this impacts innovation and economic progress. In 2021, the Ontario government announced it is proposing legislation that would, if passed:

- Eliminate Canadian work experience requirements for professional registration and licensing
- Reduce burdensome duplication for official language proficiency testing, so people would not have to complete multiple tests for purposes of immigration and professional licensing
- Allow applicants to register faster in their professions when there are emergencies (such as a pandemic)
- Ensuring the licensing process is completed in a timely manner



Developing Solutions for Ontario

Combating the Climate Crisis

1 Calling for Radical Change to Ontario's Long-Term Energy Planning Framework

Engineers on OSPE's Energy Task Force met with the Minister of Energy and staff throughout 2021 to reiterate that:

- The current framework is not suited to the new paradigm, structure, technology developments, interdependencies, and market trends happening throughout the energy industry – radical change is required.
- Government must review and change the roles, responsibilities, and accountabilities of the Ministry of Energy, the Independent Electricity System Operator (IESO), and the Ontario Energy Board (OEB) to address the shortcomings of the current framework.
- Long-term planning for the energy industry in Ontario must provide a clean, reliable, resilient, affordable, and sustainable, supply of energy to all customers—residential, commercial, and industrial.

2 Pushing for the Electrification of the Transportation Sector

Engineers on OSPE's Infrastructure Task Force worked with the Ontario government to advocate that the Ministry of Transportation should:

- Work with the federal and municipal governments to allocate specific resources to the electrification of the public transportation system.
- Develop and implement an incentive program for electric vehicles, until a mass adoption "tipping point" is achieved.
- Permit free or discounted access for EVs to all tolled highways in Ontario.
- Establish a robust network of electric vehicle charging stations across Ontario.

3 Ensuring All Infrastructure Projects Are Sustainable

In 2021, OSPE urged the Ontario Government to answer the concerns raised through its plan to build the Bradford Bypass, which would run through Ontario's Greenbelt, as well as cancel its plan to build Highway 413, and maintained:

- All levels of government should retain expert engineering input on transportation infrastructure to guarantee short and long-term planning that best serves the needs of the Greater Toronto Area for the upcoming years.

Response from government regarding the Bradford Bypass:

"The Ontario Ministry of Transportation (MTO) will continue to consult and engage with the public, key stakeholders, regulatory agencies and Indigenous communities to discuss the project and solicit feedback on the design and EA study. The results of these consultation efforts will be taken into consideration in the evaluation of the selection of the technically preferred design and will be presented to the public at the second Public Information Center in the fall of 2022."

- Jennifer Graham Harkness, P.Eng., Assistant Deputy Minister / Chief Engineer

4 Advocating for a Sustainable Minerals sector in Ontario

Engineers have been a key stakeholder group engaged in the development of Ontario's first ever Critical Minerals Strategy.

Engineering input was clear:

- Each step in the supply chain, including exploration, construction, mining and

manufacturing must be a sustainable practice.

- Ontario can play a leading role in supplying leading industries and supporting the low-carbon transition through its critical minerals.

5 Ensuring Engineers Have the Skills Required to Succeed in the Energy Efficiency and Green Building Sectors

Throughout 2021, OSPE called on the Ontario government to invest in green jobs. Engineers maintained that as Ontario and Canada transition towards a low-carbon future, the energy efficiency and building sectors will be at the forefront of change. To accelerate this, it is important to strengthen the capacity of the existing workforce and attract more people to work in these sectors,

especially engineers.

In the next 10 years, targeted investment and policies in support of green buildings can lead to 626,080 direct green building jobs in Canada. Engineers are key to planning and executing the green projects that will provide these jobs. Without engineers these sectors will not flourish.

6 Calling for Ontario's Building Code to be Net-Zero

The building sector accounts for about 22 per cent of Ontario's total greenhouse gas (GHG) emissions. Reducing this sector's carbon footprint is key in achieving Ontario's and Canada's climate targets. The National Building Code (NBC 2020) and the National Energy Code for Buildings (NECB 2020) contain new guidelines for energy efficiency in homes, small buildings, and commercial and institutional buildings.

Provinces have the option to adopt these provisions. Ontario should adopt these sections of the NBC 2020 into the Ontario Building Code O.Reg. 332/12 and define clear steps and deadlines to achieve a Net-Zero Energy Ready (NZER) code by 2030. By doing so, not only would Ontario decrease its carbon footprint, but would also create jobs moving forward, especially under the lens of more energy efficient buildings and retrofits.



Engineers Call on Government to Address Curtailed Energy in Ontario

OSPE's Energy Task Force released updated data on curtailed energy, revealing that Ontario wasted a total of 7 terawatt-hours (TWh) of clean electricity in 2020, enough to power 780,000 homes. OSPE's findings represent a consistent upward trend in curtailed clean electricity, with an 8 per cent increase from 2020 and 94 per cent increase

from 2014. Engineers have been reporting these numbers for seven years, and since that time, little has been done to mitigate this important issue. OSPE met with the Ministry of Energy to share these findings and continue discussions on solutions for Ontario.



Celebrating Engineering Excellence

Engineers gather to celebrate the 2021 Ontario Professional Engineers Awards

Since 1947, the Ontario Professional Engineers Awards (OPEA) have recognized professional engineers in Ontario who have made outstanding contributions to their profession and their community.

In 2021, OSPE proudly honoured the OPEA winners with an in-person awards dinner at the Eglinton Grand in Toronto, in addition to the virtual awards ceremony streamed live for the entire profession to tune in.



Sharing Engineers' Accomplishments Through Storytelling

231

Engineers and EITs featured on OSPE's Society Notes blog

47

Engineers and their perspectives or profiles featured in The Voice magazine

19

Engineers featured on OSPE's Engineering the Future podcast

21


Engineers and EITs featured in OSPE's ENGTalks

#IAmAnOSPEMember




"...because OSPE does important work. It focuses on other aspects of engineering besides the technical component."


- Ashley McKenzie




Jerome James, P.Eng.



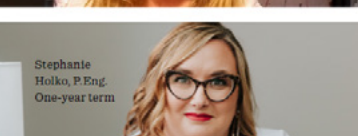
Peter Marcucci, P.Eng.



Dr. Marilyn Powers, Ph.D., P.Eng.




Irene Sterian, P.Eng.




Stephanie Holko, P.Eng.
One-year term

for Artificial Intelligence




Of particular interest to risk management professionals, leaders in STEM and all those with ties to the healthcare industry, will be **Dr. Jeanette Quaglieria, P.Eng.**'s presentation titled "How Organizations Can Prepare Their Leaders, Boards, and Risk Managers for Artificial Intelligence." Dr. Quaglieria works as Digital Innovation Strategist at the Health Insurance Reciprocal of Canada (HIROC) and brings a passion for improving healthcare systems for the benefit of all users. Quaglieria too works at HIROC, as Vice President of Performance Excellence and Information Services. With over 20 years of experience, Quaglieria has developed vast leadership experience in the healthcare sector, working in pharma, Ontario Public Service, acute care, academia, and consulting. In addition to her considerable responsibilities at HIROC, including the management of their cyber security portfolio and advancing HIROC's digital and data analytics capabilities, she is also a proud member of the Board of Trustees for Holland Bloorview Kids Rehabilitation Hospital and the recipient of the 2020 Top 10 Women Leaders in Digital Health Award, Digital Health Canada.



Jeanette Quaglieria, P.Eng.

Audience members will gain practical guidance in the development and implementation of AI applications in healthcare, with a focus on risk identification, management, and mitigation. Engineers know that AI is being increasingly relied upon in healthcare systems to increase safety, improve quality and reduce the burden on increasingly strained systems. This presentation is an opportunity for attendees to learn how AI may be best incorporated into healthcare systems and the impact that AI tools will have on the growing number of patients and families, and potential biases that may be introduced by the way an AI platform was developed and built.


at 2021 Water's Next Awards



Every year, Water Canada's Water's Next awards program honours the innovative achievements and ideas of individuals and companies that successfully work to make a positive change in the water industry in Canada and abroad.


OSPE would like to congratulate **Indra Mahajan, P.Eng.**, on winning the Government Leader award at this year's awards ceremony. Indra is a great example of how engineers care for the environment around them and how engineers can lead within their industry to make impactful change.

Jeanette Southwood, P.Eng., named Honorary Captain by Royal Canadian Navy



OSPE would like to congratulate member, **Jeanette Southwood, P.Eng.**, on being named an Honorary Captain (Navy) of the Fleet Maintenance Facility Cape Scott by the Royal Canadian Navy (RCN). Canadians who receive this an honorary designation are appointed by the Minister of National Defence and are leaders in their respective fields and take on the role of ambassador for the RCN to the Canadian people as a whole.

Dr. Bert Wasmund, P.Eng., receives the Selwyn Blaylock Canadian Mining Excellence Award



OSPE would also like to congratulate **Dr. Bert Wasmund, P.Eng.**, for receiving this year's Selwyn Blaylock Canadian Mining Excellence Award. This award celebrates an individual's distinguished service to Canada through exceptional achievement in the field of mining, metallurgy, or

OSPE Celebrates International Women in Engineering Day

On June 23, OSPE presented a live podcast episode of Engineering the Future featuring the remarkable talents and insights of three OSPE members:

- **Dr. Marilyn Powers, Ph.D., P.Eng., OSPE's Vice Chair**
- **Beatrice Sze, P.Eng., J.D., OSPE Research & Innovation Task Force member**
- **Dr. Lauren Briens, Ph.D., P.Eng., OSPE Diversity & Inclusion Task Force member**



L to R: Marilyn Powers, Ph.D., P.Eng., Beatrice Sze, P.Eng., Lauren Briens, Ph.D., P.Eng.

Pursuing Excellence & Lifelong Learning



Throughout 2021, OSPE continued to develop the Ontario Engineering Academy (OEA) to be a go-to source for engineers in their journey of lifelong learning.

OSPE defined the following learning streams to guide curriculum development:

- Technical Learning

- Leadership & Management
- Project Management
- Business Acumen
- Equity, Diversity, and Inclusion

OSPE is actively working on offerings in each of these learning streams and members can look forward to a robust buildout in the coming months and years.

Thank you to the OEA's 2021 Partners



Ontario Engineering Academy Partnerships Support Life-Long Learning for Engineers

2021 was a year of substantial growth for the OEA. With new certifications and micro credentials, OSPE members can access robust professional development more easily than ever before.



OSPE has partnered with University of Waterloo to help engineers remain agile as the world of work changes.

WatSPEED, the Faculty of Engineering, and OSPE have collaborated to launch an innovative new series of professional development courses designed to help engineering professionals compete in an increasingly digital landscape. These courses will enable engineers, technicians, technologists, leaders, and managers to navigate industry disruption and adapt to rapid changes in technology.

The first offering in this series of professional development courses, Digital Transformation, will begin in the Fall of 2022, and is designed to address the impact that information technology is having on the field of engineering.

During the eight-week course, engineers and those who influence or lead change within their organizations will discover new technologies and plan for their integration into the workplace.

Industry Partners

OEA is working with many industry partners to bring members relevant training across all our learning streams. Examples from 2021 include:

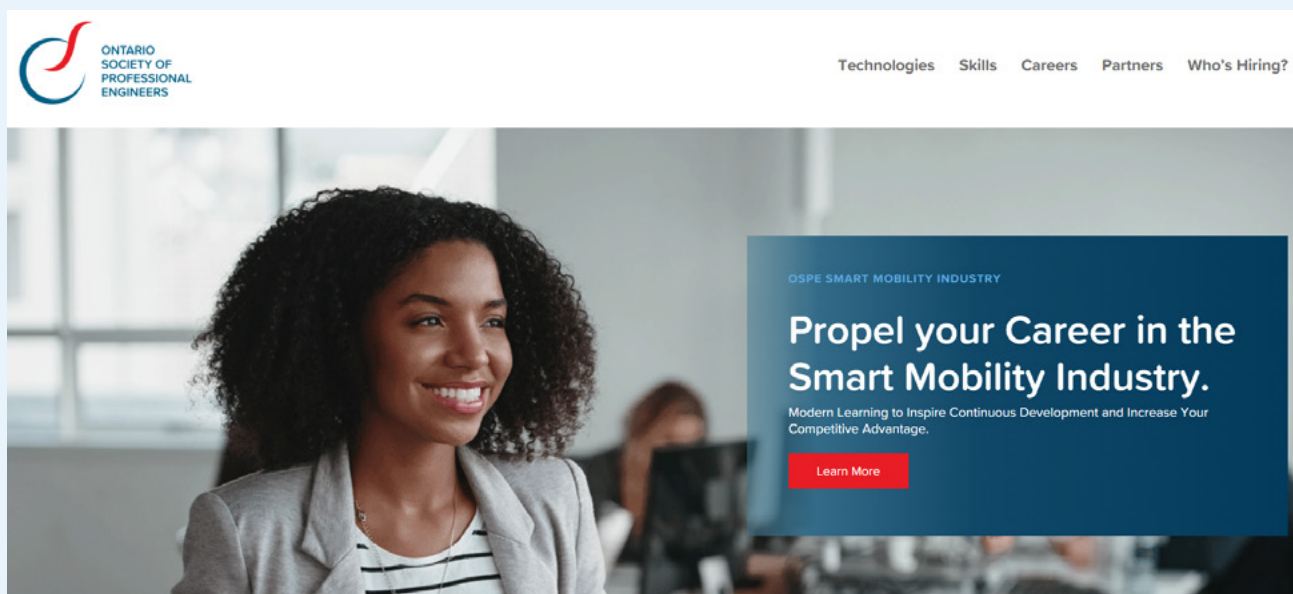
- Emerging Leaders Certificate Program and other leadership & management courses in partnership with Rzultz
- Risk Management from our partners at Procept
- Health and Safety from our partners at Minerva
- Preparatory courses to help individuals in their journey to P.Eng.
- Writing that Sells: Technical Proposals & Pitches Certificate Course in partnership with Christa Bedwin at Sola Rosa

DiversifySTEM

Our DiversifySTEM curriculum was redesigned and updated in 2021, including the addition of new content addressing topics like microaggressions, parental leave, and challenges facing women Engineering Technologists and Technicians. In keeping with OSPE's commitment to promoting diversity in the profession, there's more to come in 2022, so keep checking back.

Propel your Career in the Smart Mobility Industry

Focusing on the technology, skills, and careers in the smart mobility sector, the updated PropelUs site has become one of our most popular resources for engineering professionals starting out, as well as those looking to keep up with this fast-moving industry.

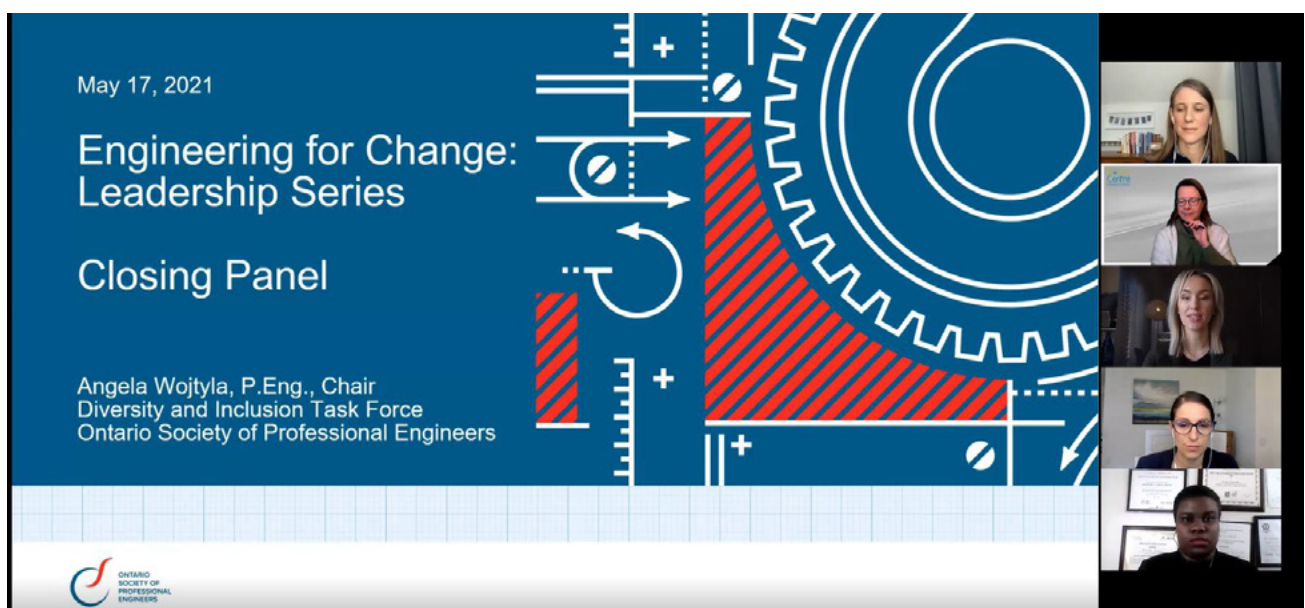


Facing the Future

OSPE hosts Engineering for Change Virtual Leadership Series

Curated by OSPE's Diversity & Inclusion Task Force, this virtual event series provided early to mid-career professionals with tips and strategies on a variety of leadership-related topics. Designed to help OSPE members develop relationships, network, and share knowledge, participants were asked to watch a weekly video and attend a group discussion. The videos covered a wide range of important topics, including building confidence

and influence, negotiation, navigating biases and their resulting barriers, and understanding your identity and approaching balance. The series was followed by a live webinar on May 17, 2021 where all speakers came together for a panel discussion. The series was an excellent example of the engineering community coming together to learn, connect, share and support each other.



OSPE Member Dr. Emily Moore, Ph.D., P.Eng. leads research on Engineering Leadership, sharing insights at OSPE's Engineering Conference

In recent years there has been a call to action for engineers to lead. But what does this really mean? Do engineers feel prepared to lead? Do they even want to? What is standing in their way?

In January 2021 as part of funding received through a grant from the Social Sciences and Humanities Research Council (SSHRC), OSPE members were surveyed to try to answer these questions. The response was fantastic; more than 1,300 individuals responded with good

representation from different disciplines, age groups and industries. Of the respondents, 75% were OSPE members, and 87% had a P.Eng. or EITs.

Those who have always embraced the idea of engineering as a leadership profession saw the technical and leadership aspects as inherently intertwined, while those who resisted the relationship viewed engineering and leadership as mutually exclusive domains.



Strengthening the Engineering Community Through Mentoring

OSPE creates opportunities for members to share expertise and experiences with each other through our mentorship program. In 2021, the redesigned program was updated to connect engineers and engineering graduates in the early stages of their careers with senior engineers who possess the skills and expertise they are interested in honing.

Unlike traditional mentoring relationships that develop over time, OSPE created a “Drop-In Mentoring” system to accelerate the mentoring process.

Mentees can book a 30-minute session with as many mentors as they’d like, which provides access to a much wider knowledge base. OSPE’s many talented mentors are excited to meet and help young OSPE members grow and succeed.



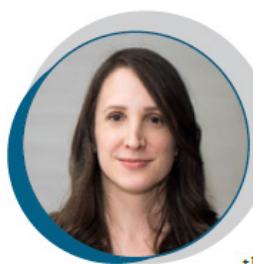
**Michael Liu,
P.Eng.**

Michael Liu is a professional engineer working in the water industry. His focus is on the design and construction of infrastructure projects for municipalities in Ontario. His role as a Regional Discipline Lead for Electrical and I&C allows him to help his clients plan, design, maintain and protect their plants, facilities and personnel.

As a lifelong learner, he has been involved in mentorship activities since university. He knows the value of having proper guidance for professionals on their journeys in becoming the best versions of themselves. He strives to be the help and support that he wishes he had.

“Mentorship is important for all professionals because it is the guidance we need in our careers. There are many lessons from the working world after school, but they are not taught in the classroom setting. Mentorship is the compass and lighthouse as we navigate through our lives. It benefits everyone involved and it helps facilitate life-long learning, relationships, and growth. Mentorship on a person’s journey in becoming the best version of themselves is invaluable, and in turn, it helps in making positive impacts on our world.”

– Michael Liu, P.Eng.



Emily Sabo, P.Eng.

Emily is a Civil Engineer, specializing in transportation planning and engineering. She has worked in BC, Ontario, and Alberta in consulting and at all levels of government. In addition, she worked at PEO, in the EIT Programs department, providing recent graduates and newcomers to Canada guidance on how to meet the requirements for licensure in Ontario. Emily is an avid traveller, and in 2014 took a year off to travel the world. She’s navigated job changes, relocations and returning to work after parental leave. Emily loves to meet new people and, as a mentor, help them attain their professional goals.

OSPE Analyzes Data to Identify What Engineering Disciplines are Most Common at Entry Level Positions

To offer a snapshot of where the jobs are, OSPE analyzed data from the 2019 OSPE/Mercer salary survey containing data from 210 companies representing more than 9,400 engineers and engineering graduates. OSPE broke down data from 10 specific disciplines and produced a report that looks at what types of engineering employs the highest proportions of professionals at an entry level position.

While many factors are at play when deciding which discipline and career to pursue in engineering, the report provides useful observations about the most common engineering positions amongst Ontario companies. With this analysis, OSPE is providing insights for young people in deciding which engineering program to choose, while outlining skill sets needed to show what new graduates should prepare for when pursuing engineering as a career.



Financial Statements

Report Of The Independent Auditor On The Summary Financial Statement

Opinion

The summary financial statements, which comprise the summary statement of financial position as at December 31, 2021, and the summary statement of operations, changes in net assets and cash flows for the year ended, and related notes, are derived from the audited financial statements of the Ontario Society of Professional Engineers for the year ended December 31, 2021.

In our opinion, the accompanying summary financial statements are a fair summary of the financial statements, in accordance with the criteria disclosed in Note 1 to the summary audited financial statements.

Summary Financial Statements

The summary financial statements do not contain all disclosures required by Canadian accounting standards for not-for-profit organizations. Reading the summary financial statements and the auditor's report thereon, therefore, is not a substitute for reading the Society's audited financial statements and the auditor's report thereon.


The summary financial statements and the audited financial statements do not reflect the effects of events that occurred subsequent to the date of our report on the audited financial statements.

Management's Responsibility for the Summary Financial Statements

Management is responsible for the preparation of the summary financial statements in accordance with the criteria disclosed in Note 1 to the summary financial statements.

Auditor's Responsibility

Our responsibility is to express an opinion on whether the summary financial statements are a fair summary of the audited financial statements based on our procedures, which were conducted in accordance with the Canadian Auditing Standards (CAS) 810, *Engagements to Report on Summary Financial Statements*.



Chartered Professional Accountants, Licensed Public Accountants
Oakville, Ontario
April 4, 2022

Summary Statement of Financial Position

Ontario Society of Professional Engineers Summary Statement of Financial Position

December 31	2021	2020
Assets		
Current		
Cash	\$ 1,050,587	\$ 924,481
Short-term investment	1,177,969	714,866
Accounts receivable	689,074	720,883
Prepaid expenses	99,100	39,542
	<u>3,016,730</u>	<u>2,399,772</u>
Long-term investments	435,630	628,139
Capital assets	13,882	15,634
Intangible assets	65,077	93,729
	<u>\$ 3,531,319</u>	<u>\$ 3,137,274</u>
Liabilities and Net Assets		
Current		
Accounts payable and accrued liabilities	\$ 539,867	\$ 408,600
Deferred revenue - government projects	54,879	13,853
Deferred revenue	787,826	783,550
Deferred lease incentives	8,534	8,163
	<u>1,391,106</u>	<u>1,214,166</u>
Net Assets		
Invested in capital assets and intangible assets	78,959	109,469
Internally restricted	1,287,186	1,287,186
Unrestricted	774,068	526,453
	<u>2,140,213</u>	<u>1,923,108</u>
	<u>\$ 3,531,319</u>	<u>\$ 3,137,274</u>

Summary Statement of Operations

Ontario Society of Professional Engineers Summary Statement of Operations

For the year ended December 31	2021	2020
Revenue		
Membership fees	\$ 1,218,720	\$ 1,223,821
Royalties	1,667,016	1,565,338
Government projects	1,081,840	799,145
Sponsorship	426,656	256,540
Professional development	183,134	143,650
Advertising	21,185	31,791
Career services	100,418	85,287
Other revenue	19,411	78,202
Investment income (loss)	(3,510)	53,997
	4,714,870	4,237,771
Expenses		
Advertising and promotion	142,990	64,819
Amortization - capital assets	10,437	10,830
Amortization - intangible assets	28,652	46,128
Annual general meeting and general assembly	2,104	9,953
Audit, legal and professional services	33,388	63,002
Bank charges	77,581	75,865
Consulting	450,060	328,198
Elections	11,052	5,282
Event production	461,180	451,968
Government projects	1,081,840	799,145
Insurance	122,956	121,609
Meetings	18,739	84,618
Office and general	162,948	135,557
Postage	30,151	30,856
Publications	36,482	52,678
Rent	133,634	140,749
Sponsorship	46,666	63,296
Telecommunication	20,854	25,596
Travel and volunteer expenses	51,274	82,435
Wages and benefits	1,574,777	1,151,397
	4,497,765	3,743,981
Excess of revenue over expenses for the year	\$ 217,105	\$ 493,790

Summary Statement of Changes in Net Assets

Ontario Society of Professional Engineers Summary Statement of Changes in Net Assets

For the year ended December 31

	Invested in capital and intangible assets	Internally restricted	Unrestricted	2021 Total	2020 Total
Balance, beginning of year	\$ 109,469	\$ 1,287,186	\$ 526,453	\$ 1,923,108	\$ 1,429,318
Excess (deficiency) of revenue over expenses	(39,195)	-	256,300	217,105	493,790
Purchases of capital and intangible assets	8,685	-	(8,685)	-	-
Balance, end of year	\$ 78,959	\$ 1,287,186	\$ 774,068	\$ 2,140,213	\$ 1,923,108

Ontario Society of Professional Engineers Note to Summary Financial Statements

December 31, 2021

1. Summary financial statements

The summary financial statements are derived from the complete audited financial statements, prepared in accordance with Canadian accounting standards for not-for-profit organizations, as at December 31, 2021 and December 31, 2020 and for the years then ended.

The preparation of these summary financial statements requires management to determine the information that needs to be reflected so that they are consistent in all material respects with the audited financial statements.

Management prepared these summary financial statements using the following criteria:

- (a) the summary financial statements include the summary statement of financial position, summary statement of operations and summary statement of net assets;
- (b) management determined that the statements of cash flows do not provide additional useful information and as such, have not included them as part of the summary financial statements;
- (c) information in the summary financial statements agrees with the related information in the complete audited financial statements including comparative information and all major subtotals and totals; and
- (d) in all material respects, the summary financial statements contain the information necessary to avoid distorting or obscuring matters disclosed in the related complete audited financial statements, including significant accounting policies and the notes thereto.

The complete audited financial statements of Ontario Society of Professional Engineers are available upon request by contacting the management of Ontario Society of Professional Engineers.

2022 Event Dates

OSPE Annual General Meeting

Monday, May 9, 2022

Virtual

OSPE's Golf Tournament

Wednesday, May 18, 2022

Angus Glen Golf Club

Markham, Ontario

OSPE's Annual Engineering Conference

Thursday, November 3, 2022

The Shaw Centre

Ottawa, Ontario

Ontario Professional Engineers Awards Gala

Friday, November 18, 2022

Universal Event Space

Vaughan, Ontario

Visit www.ospe.on.ca for more information

www.ospe.on.ca



ONTARIO
SOCIETY OF
PROFESSIONAL
ENGINEERS