

March 13, 2024

2024 APEGA Summit Award recipients

Centennial Leadership Award Recipient – Dr. William (Bill) Rosehart, P.Eng.

This award is presented to APEGA members who have attained the highest distinction relating to engineering or geoscience through directorship of an outstanding project, original research or inventions, or an exemplary career in teaching.

For professional engineer Dr. Bill Rosehart, these core values have guided him as a professional—first as a researcher and professor, and now as dean of the University of Calgary’s Schulich School of Engineering. Dr. Rosehart joined the University of Calgary in 2001, becoming head of the electrical and computer engineering department in 2010. He served as interim faculty dean for one year before becoming dean in 2014.

He’s led a transformational change to amplify the impact of engineering research and education to meet the demands of a swiftly changing society. “Our mission is to prepare today’s engineering students to be tomorrow’s changemakers and to elevate research impact to advance Alberta’s innovation economy,” says Dr. Rosehart.

During Dr. Rosehart’s tenure, Schulich has welcomed a record number of students, enhanced experiential learning, strengthened interdisciplinary and industry collaboration, and supported faculty efforts to secure more funding than ever for pivotal research at the nanoscale to the global scale.

Dr. Rosehart has overseen the launch of several new undergraduate, graduate, and transfer programs, helping expand access to the engineering profession. Major capital projects completed under his watch include a long-awaited expansion and modernization of the school’s engineering complex, and the opening of multiple makerspaces where students can roll up their sleeves and bring their ideas to life.

“Our students will play such an important role in shaping Canada’s future,” he says. “Watching them learn and grow during their time at the University of Calgary is truly an honour.”

Dr. Rosehart is also accelerating engineering innovation by taking action to increase diversity on campus and in the profession, dismantling barriers that prevent people from pursuing an engineering education. For engineering to thrive, he believes we must cultivate an environment where people from diverse backgrounds feel welcome and included.

In his time as an engineering professional, Dr. Rosehart has published more than 130 journal and conference papers and supervised or co-supervised more than 25 graduate students while actively serving his profession as a volunteer with APEGA and several other engineering organizations.

“Every day think about how you can make a positive difference,” says Dr. Rosehart. “As engineers, we have the training, knowledge, and skills to do just that.”

Awards and Distinctions

- Fellow, Engineering Institute of Canada (2023)
- Fellow, Canadian Society of Senior Engineers (2022)
- Advocates and Allies Award, Women in Engineering ProActive Network (2020)
- Fellow, Canadian Academy of Engineering (2017)
- Outstanding Young Engineer Award, IEEE Power & Energy Society (2008)
- APEGA Early Accomplishment Summit Award (2006)
- Professor of the Year Award, Schulich School of Engineering, University of Calgary (2005; 2004)
- Teaching Excellence Award, Schulich School of Engineering, University of Calgary (2004; 2003)

Professional Affiliations and Activities

- Co-Chair, University of Calgary Sustainability Strategy Renewal Steering Committee (2023–present)
- Member, Presidential Task Force on Equity, Diversity, Inclusion and Accessibility (2023–present)
- Chair, Schulich School of Engineering Faculty Council (2013–present)
- Member, Institute for Electrical and Computer Engineers (1998–present)
- Co-Founder, Canadian Engineering Association (2010)
- Member, APEGA (2005–present)

Community Service Award – Dr. Kerry Black, P.Eng.

This award is presented to APEGA members who are recognized by their peers for outstanding contributions to society.

Professional engineer Dr. Kerry Black works closely with Indigenous communities across Canada to build trust and seek solutions to urgent infrastructure issues, including access to safe drinking water, improved sanitation, and housing. She’s learned that engineering innovation and technology alone aren’t enough to resolve these complex challenges.

A non-Indigenous settler and Canada Research Chair in Integrated Knowledge, Engineering and Sustainable Communities at the University of Calgary, Dr. Black is among less than a

handful of experts in her discipline to meaningfully co-develop engineering research with First Nations community partners. She integrates Indigenous research methods—drawn from First Nations’ traditions and knowledge—into engineering research and designs.

Dr. Black is committed to what she calls “re-engineering” research, with a people-first approach focused on building healthy communities through resilience, relationships, reconciliation, and reciprocity. By partnering with communities, she gives residents a voice in the decision-making process, tangible training tools, and ownership over the results.

“As engineering professionals, we need to examine infrastructure issues through a different lens,” says Dr. Black. “Progress on Indigenous rights and self-determination requires a deeper understanding and consideration of the social, economic, historical, and geographical realities that exist within Indigenous communities.”

Dr. Black’s research builds on over 15 years’ experience in the private, public, and non-profit sectors. Her early work developing Indigenous-centred water safety plans in Ontario and Saskatchewan was unprecedented. It resulted in a first-of-its-kind framework for researchers and professionals that set new standards on culturally grounded engineering practice.

During the COVID-19 pandemic, her investigation of wastewater monitoring in Indigenous communities helped mitigate disease transmission. Through her latest endeavour—a mobile research station—she travels to communities across the province measuring water and indoor air quality and assessing building safety.

In December, the United Nations Educational, Scientific and Cultural Organization (UNESCO) named Dr. Black one of its six inaugural co-chairs in Mountain Water Sustainability—a tremendous honour that acknowledges the global significance of her work.

An assistant civil engineering professor at the Schulich School of Engineering for five years, Dr. Black has been instrumental in developing the University of Calgary’s Indigenous Strategy. In her classroom, she introduces students to the intricately connected systems of engineering, sustainability, and social justice. Her advice is clear: she says active and open listening is pivotal.

Awards and Distinctions

- Founding Fellow, United Nations University Hub, University of Calgary (2023)
- Top 40 Under 40 Award, Avenue Magazine Calgary (2022)
- Schulich School of Engineering Award for Advancing SSE Contributions to ii' taa'poh'to'p (2022)
- Teaching Excellence Award, Schulich School of Engineering, University of Calgary (2021)
- Service Excellence Award, Schulich School of Engineering, University of Calgary (2021)
- Students' Union Teaching Excellence Award Honourable Mention, University of Calgary (2020)

Professional Affiliations and Activities

- Chair, Canadian Society of Civil Engineering Sustainable Development Committee (2022)
- Member, APEGA (2021–present)
- Thought Leader, British Columbia Auditor General (2021–present)
- Secretary, Director, Ontario First Nations Technical Services Corporation (2020–present)
- Member, Samson Cree Nation Nipiy (Water) Committee (2019–present)
- Senior Advisor, First Nations Housing & Infrastructure Council (2018–2023)
- Senior Policy Advisor, Water, Housing, and Infrastructure, Assembly of First Nations (2016–2017)

Early Accomplishment Award – Dr. Kshama Roy, Engineer-in-Training

This award is presented to APEGA members who are recognized by their peers for their integrity, expertise, and outstanding accomplishments in fields related to engineering or geoscience at an early stage in their professional career.

On any given day, you might find Dr. Kshama Roy in his office assessing pipeline geohazards, at a conference speaking on pipeline integrity, or in a lecture hall teaching new generations of geotechnical and pipeline engineers. He has one foot firmly planted in industry, the other in academia—and he’s left an imprint on both.

Since completing his bachelor’s degree 15 years ago, Dr. Roy has become an internationally recognized expert in pipeline integrity focusing on pipe-soil interaction. High levels of success aren’t new to him, though. In Bangladesh, where he grew up and started his career, Dr. Roy was among the top ranked undergrads in his civil engineering program. While completing his master’s and PhD with distinction at Memorial University of Newfoundland, he developed breakthrough soil models for sustainable infrastructure.

After joining Northern Crescent in Calgary, Dr. Roy established the company’s pipeline integrity team and its research and development department. He led the development of eight automated software programs that revolutionized the firm’s pipeline engineering services. Two years ago, he became one of the youngest principal specialists at DNV, a world-wide independent expert in assurance and risk management.

Dr. Roy remains a passionate researcher and has published seven journals and 18 conference papers in the last five years. “Due to a changing climate, natural hazards like earthquakes, floods, and wildfires pose significant threats to the integrity of our built environment,” he notes. “A forward-thinking, sustainable strategy is required to minimize the vulnerability of infrastructure to these risks.”

He secured grants for more than a dozen joint research projects resulting in advanced methods used by industry to improve pipeline design and integrity. “Collaborations between

industry and academia drives out-of-the-box thinking, which often leads to transformative solutions,” says Dr. Roy.

He’s also an adjunct civil engineering professor at Memorial University and served as an adjunct professor at the University of Manitoba and a sessional lecturer at the University of Calgary.

Dr. Roy is motivated by his desire to create a sustainable future, not only in his career but also in his community. Through a memorial fund he helped establish in his late father’s memory, Dr. Roy and his wife provide full educational and living costs for seven underprivileged girls in Bangladesh, and they have partially adopted two orphaned elephants in Kenya.

Awards and Distinctions

- Bright Spark Lecture Award, International Society for Soil Mechanics and Geotechnical Engineering (2024)
- Early Achievement Award, Canadian Geotechnical Society (2023)
- Most Promising Engineer-Midstream, Gulf Energy Awards (2023)
- Innovative Thinker Award, *Pipeline and Gas Journal* (2021)
- Outstanding Young Pipeline Professional Award, American Society of Mechanical Engineers (2020)
- Chancellor’s Graduate Award and Fry Family Foundation Graduate Leadership Award, Memorial University of Newfoundland (2018; 2013)
- Chevron Canada Limited Rising Star Award, Memorial University of Newfoundland (2016; 2015)

Professional Affiliations and Activities

- Chair, Young Professional Committee, Canadian Geotechnical Society (2021–present)
- Chair, Young Pipeliners Engagement Committee, Pipeline Technology Conference (2022–present)
- Advisor, Young Engineers Engagement Committee & Co-Chair, Tutorial Committee, International Pipeline Conference (2023–present)
- Chair, Young Pipeliners International (2021–2022)
- Technical Co-Chair, GeoCalgary (2022)
- Director, Southern Alberta Chapter, Canadian Geotechnical Society (2020–2022)
- Member, APEGA (2019–present)
- President, Teaching Assistants’ Union, Memorial University (2013–2015)
- President, Engineering Graduate Students Society, Memorial University (2012–2013)

Environment & Sustainability Award Recipient – Ole Yin, P.Eng.

This award is presented to members of APEGA who have demonstrated excellence in the application of engineering or geoscientific methods towards preservation of the environment and the practice of sustainable development.

While leading a two-year pilot project to explore emission reduction options across TC Energy's North American pipeline network, professional engineer Ole Yin knew a unique approach was required. He chose to do things differently, show up curious, and challenge assumptions.

Yin is a senior pipeline integrity and operations engineer at TC Energy's Calgary office. The project team he led pushed technical boundaries, resulting in several innovations in blowdown management, a process during routine pipeline maintenance in which gases are flared or vented into the atmosphere. Engineering teams with TC Energy devised custom solutions to address unique challenges at the company's different facilities. "It required a mix of engineering ingenuity and adaptability to tailor our strategies in each specific situation," shares Yin.

Ten trials have been completed at field sites across Alberta, with two more planned for 2024. Advanced blowdown reduction technologies were tested and evaluated on their reliability, scalability, safety, and efficiency. Adopting new technologies like this helps the company position itself to achieve its goal of net-zero emissions by 2050. One of the technologies tested eliminated the equivalent of nearly 200,000 tonnes of carbon dioxide emissions in its first 18 months. That's equal to the annual electricity use of about 133,700 households.

Other benefits include reduced maintenance down time, improved air quality in nearby communities, and cost savings—gases can now be saved and sold instead of emitted. TC Energy will use the information from this pilot project to develop a comprehensive blowdown technology strategy for its 93,300 kilometres of natural gas pipelines.

"We proved these are solid technologies," says Yin. "Full implementation will be an important step on our journey towards zero emissions." The project has established industry-leading best practices and enhanced Alberta's reputation as a global leader in environmentally responsible practices in the energy sector.

For Yin—who has more than 30 years' experience as a mechanical engineer—it's a great example of how Alberta engineering professionals are constantly evaluating how they work, embracing change, and proactively solving pressing environmental challenges. The trial also taught him that small contributions can make a big difference.

"It's incredibly fulfilling to pool our collective creativity to solve problems, enhance safety, and keep operations running smoothly," says Yin. "I'm most proud of contributing my insights to not only meet TC Energy's emissions reduction targets, but to support Canada's environmental objectives."

Professional Affiliations and Activities

- Member, Materials Technical Subcommittee, CSA Group (1998)
- Member, 6S Subcommittee, American Petroleum Institute (1998)
- Member, Field Operations Subcommittee, American Gas Association (1998)
- Member, APEGA (2014–present)

Excellence in Education Award – Dr. Ahmad Ghasemloonia, P.Eng.

This award is presented to members of APEGA who have made exemplary contributions to teaching and learning at a recognized post-secondary institution in Alberta.

Professional engineer Dr. Ahmad Ghasemloonia stands before undergraduate students in his third-year machine dynamics class holding a 3D-printed model of a fish jaw—a real-life example of forces and motion. Using demonstration tools is one of his favourite teaching strategies. They can help students get a better grasp on fundamental ideas, like the principles of design and analysis. This is critical to their success at university and as future engineering professionals.

“Visualization gives students a deeper understanding of theoretical knowledge and how these foundational concepts can be creatively applied to solve real-world engineering problems,” explains Dr. Ghasemloonia, a mechanical engineering professor at the University of Calgary’s Schulich School of Engineering.

Active learning and student engagement are at the heart of Dr. Ghasemloonia’s student-centred teaching philosophy. He encourages meaningful discussion and participation in his lectures, building students’ confidence and teaching them to learn through inquiry: ask questions, carefully analyze every problem, then develop step-by-step solutions.

To further enhance learning outcomes, he developed comprehensive course packages. He encourages collaborative learning experiences to promote teamwork and grow students’ communication and critical thinking skills. He also sets generous office hours and has an open-door policy—students are always welcome to drop by his office for extra support and guidance.

Dr. Ghasemloonia continually adapts his teaching techniques to meet the different learning styles and needs of his students. He’s completed more than 400 hours of professional development to improve his skills as an educator. He also surveys students mid-semester and makes concrete changes based on their feedback. His dedication to their success is noticed—his student rating scores are consistently in the top percentile. As one student wrote, “His efforts to deliver an immersive, challenging, yet inclusive space for all individuals to learn is unprecedented.”

Dr. Ghasemloonia’s pursuit of educational excellence and leadership extends far outside the classroom. He serves as Schulich’s associate dean of student success and interdisciplinary academic programs and has shared his scholarly research findings with other instructors at

numerous conferences and workshops. As the academic coordinator of the school's first-year program, Schulich Studio, he collaborates with a group of 10 course coordinators, 40 faculty, and 150 teaching assistants in delivering courses to 1,000 students.

Awards and Distinctions

- Schulich Momentum Award, Schulich School of Engineering, University of Calgary (2023)
- McCaig-Killam Teaching Award (2023)
- Teaching Excellence Award, Schulich School of Engineering, University of Calgary (2023; 2018)
- Graduation Banquet Teaching Excellence Award, Schulich School of Engineering, University of Calgary (2021; 2020)
- Teaching Achievement Award, Schulich School of Engineering, University of Calgary (2020; 2019; 2018; 2017)
- Mechanical Engineering Professor of the Year Award, Schulich School of Engineering, University of Calgary (2020; 2019)
- Students' Union Teaching Excellence Award, Schulich School of Engineering, University of Calgary (2018; 2017)

Professional Affiliations and Activities

- Associate Dean, Student Success and Interdisciplinary Academic Programs, Schulich School of Engineering, University of Calgary (2021–present)
- Assistant Dean, Students and Academic Programs, Schulich School of Engineering, University of Calgary (2020–2021)
- Member, APEGA (2015–present); PEGNL (2013–2015)

Frank Spragins Technical Award Recipient – Dr. Zengtao Chen, P.Eng.

This award is presented to APEGA members recognized by their peers for their integrity, technical expertise, and outstanding accomplishments in fields relating to engineering or geoscience.

Professional engineer Dr. Zengtao Chen has an innate curiosity for how things work—and how to make them work better—which he channels into his research activities.

A global authority on the mechanics of materials, Dr. Chen's groundbreaking research and technical innovations have had positive effects on the environment, the economy, and society. One of the most influential and prolific researchers in his field, his efforts focus on the strength and durability of lightweight metal alloys and composite materials, and their performance under extreme conditions.

Whether he's designing lighter automobiles that use less fuel and produce fewer emissions, building safer pipelines, creating high precision machine parts, developing value-added pulp

and paper products, or investigating heat transfer in electric vehicle batteries, Dr. Chen's work is on the leading edge.

"I've always strived to advance the development and application of smart materials for the sustainability of our society and well-being of humankind," reveals Dr. Chen. "As a researcher, I would like to see my work improve people's lives and inspire younger generations, particularly from under-represented groups, to choose engineering as their future career."

A professor in the University of Alberta's department of mechanical engineering, his achievements across nearly four decades have resulted in improved manufacturing techniques and several new standards and guidelines in modelling simulation and design. Dr. Chen's highly sought expertise has led to extensive research partnerships with academic institutions, industry, and government labs across Canada and the world.

Passionate about sharing his knowledge, Dr. Chen has published three books, more than 285 papers in esteemed journals, and an abundance of conference papers and research reports. He also serves as an editor and reviewer for numerous journals, has spearheaded more than 20 international conferences, and is frequently invited to be a keynote speaker.

Dr. Chen's dedication to training future professionals is equally commendable. He's taught hundreds of undergraduate students and has supervised more than 80 graduate students and post-doctoral fellows who have become academic and industrial leaders. "It's a great feeling working with so many creative and energetic students and colleagues to discover solutions to very challenging issues," he says.

For Dr. Chen, technical excellence is measured by the positive impacts of his work, the respect of his peers, and by making lasting contributions to the engineering profession as a whole. "To become an engineer was my childhood dream. It's what I love to do, and I'm deeply humbled by this recognition."

Awards and Distinctions

- Fellow, Canadian Academy of Engineering (2023)
- Fellow, Canadian Society for Mechanical Engineering (2020)
- Hiwin Doctoral Dissertation Award, Supervisor Award, Chinese Mechanical Engineering Society (2019)
- Fellow, American Society of Mechanical Engineers (2017)
- Most Cited Paper, International Journal of Applied Mechanics (2009–2015)
- University Research Scholar (no more than two each year), University of New Brunswick (2012–2014)
- Mechanical Professor of the Year and Teaching Excellence Award, University of New Brunswick (2012)

Professional Affiliations and Activities

- Editorial Board Member: *Advances in Mathematical Physics* (2018–present); *Nano Materials Science* (2018–present); *Materials* (2020–present); *Coatings* (2020–present); *Journal of Pipeline Engineering and Science* (2019–2022)
- Leading guest editor: *International Journal of Fracture* (2022–2024); *Advances in Mechanical Engineering* (2017–2019); *Materials* (2020; 2016; 2010)
- Executive Board Member, Canadian Fracture Research Group (2009–present)
- Member: APEGA (2014–present); PEO (2004–2015); APEGNB (2005–2014); American Society of Mechanical Engineers (2004–present); Canadian Society for Mechanical Engineering (2013–present)

Outstanding Mentor Award – Dean Kmech, P.Eng.

This award is presented to members of APEGA in recognition of exceptional achievement as a mentor.

Professional engineer Dean Kmech has invested immeasurable time and energy over the past 30 years developing the talents of dozens of student interns and new graduates. His enthusiasm for his profession—and for the success of his mentees—has had a lasting impact.

Former mentees recall his “intoxicating optimism,” kindness, and genuine desire to see them excel.

He fosters an environment where curiosity and innovation are encouraged, and people are inspired and motivated to achieve their full potential. Kmech’s positive influence is often mentioned as the major driving force behind his mentees’ achievements. Many have advanced into management roles early in their careers. Others are making a mark as senior leaders and corporate executives.

In his current role as the lead facility engineer at Cenovus Energy’s Christina Lake in situ thermal facility, Kmech always has engineering student interns, engineers-in-training, and other young professionals under his care. He strives to understand each individual’s strengths, weaknesses, and aspirations, tailoring his guidance to support their needs. Because of his support, some mentees who were considering leaving engineering decided to continue on their professional journey.

While Kmech is keen to share the technical knowledge he’s gained over 40 years as a petroleum engineer, his teaching goes beyond how to size a downhole pump, follow safety codes, or create a construction work plan. He ensures mentees develop strong leadership and interpersonal skills to advance their careers. They’re included in meetings or discussions, given in-depth site tours to expand their technical and operational knowledge, and provided opportunities to lead their own projects.

“My goal is to help build their confidence by empowering them to speak up, question how things are done, and get involved in the decision-making process,” says Kmech. “Giving mentees the freedom to come up with their own ideas and solutions is a collaborative and enriching experience, both for them and for me.”

He's also a role model on how to effectively balance one's career and personal life. This holistic approach to mentoring has earned him the lasting respect and admiration of his mentees.

Professional Affiliations and Activities

- Volunteer, Junior Achievement (1994–2008)
- Member, APEGA (1980–present)

Project Achievement Award Recipient – Syantra DX™ Breast Cancer Detection Technology

This award is presented to an engineering or geoscience project that contributes new technologies, processes, or innovations for the improvement of society.

A biomedical engineering breakthrough by Syantra Inc., a University of Calgary spinoff company, promises to revolutionize women's health care and save lives through the early detection and treatment of breast cancer.

With a simple blood test, the Syantra DX™ Breast Cancer screening technology can quickly and accurately detect the presence of breast cancer before symptoms even arise. This precision diagnostic tool—developed by a team of engineers, technologists, and clinicians—uses proprietary custom software to measure 12 unique RNA biomarkers from whole blood. Artificial intelligence algorithms in the software interpret the data and provide a positive or negative result. Clinical trials in Calgary, the United Kingdom, the United States, and Korea show the test has an overall accuracy of 92 per cent, and a 98.5 per cent accuracy in women under 50.

The idea for Syantra DX™ was sparked more than a decade ago at Dr. Kristina Rinker's research lab at the Schulich School of Engineering. It's the result of regional and global collaborations, scientific discovery, and a relentless determination to transform health outcomes for women by changing the standard of care.

Syantra DX™ is approved for use in Canada, Europe, and the United States. Taking the technology from concept to commercialization was an enormous task achieved with the support of many government, industry, and health-care partners. "You need to have persistence, but if you keep pushing past barriers, make a plan, and don't give up, you can realize your goals," says Dr. Rinker.

She hopes the test will be used to help more women identify breast cancer at its earliest stages when it is most treatable. Women at greatest need are those with dense breast tissue, making cancer harder to detect, and women under 50, who are more likely to develop aggressive forms of breast cancer but are not typically screened for the disease.

Syantra's long-term vision is to become a global provider of blood screening tests for other invasive diseases, including ovarian, pancreatic, and blood cancers. Adds Dr. Rinker, "I'm inspired by the possibilities to advance health and motivated by the challenges in bringing health technologies to the market."

Key contributors to the project include, in alphabetical order:

- Dr. Kenneth Fuh, MLT
- Dr. Randy Moore, MD
- Dr. Kristina Rinker, P.Eng.
- Robert Shepherd

Research Excellence Award Recipient – Dr. Leonid Belostotski, P.Eng.

This award is presented to members of APEGA who have conducted innovative research in engineering or geoscience that has been successfully applied to improve economic and social well-being.

When he was a young boy, professional engineer Dr. Leonid Belostotski assembled circuit boards in his bedroom, using his imagination—and his mom's nail polish—to bring his designs to life. Today, his research is at the forefront of radio frequency and low-noise receiver development. By pioneering new ways to reduce unwanted noise from agitated electrons, he's helping humanity explore new frontiers in science, boost quantum computer capabilities, and create faster wireless signals.

A professor of electrical and software engineering at the University of Calgary's Schulich School of Engineering, Dr. Belostotski holds the Canada Research Chair in High-Sensitivity Radiometers and Receivers. For more than 20 years, he's been part of an international scientific consortium developing the world's largest radio telescope. The Square Kilometre Array, now under construction in South Africa and Australia, will scan the cosmos to unravel the mysteries of the universe.

As a PhD student, Dr. Belostotski had a breakthrough idea to use consumer-grade computer chip technology to build the array's receivers. Using this conventional technology instead of more expensive processes, he built the world's first ultra-low-noise circuit that runs at room temperature. Because it doesn't need to be cooled cryogenically like other low-noise circuits, it uses far less power and is more economical to produce on a vast scale. This led to further innovations that are integral to other global sky-mapping projects, including the Canadian Hydrogen Observatory and Radio-transient Detector in Penticton.

"Developing integrated circuits is fascinating. It's very neat to receive a tiny chip back from a semiconductor foundry that is capable of performing numerous, complex functions," notes Dr. Belostotski.

In recent years, his work has expanded into the rapidly growing field of quantum computing, which uses quantum bits—known as qubits—to process information and solve problems too complex for classical computers. He is developing circuits that can function in extreme cold, which will help to dramatically increase the number of qubits possible in quantum systems, as well as unique circuits that have the potential to boost wireless data speed and volume, making connectivity more widely available even in remote and difficult-to-service areas.

Awards and Distinctions

- Schulich Research Excellence Award, University of Calgary (2023; 2015)
- Achievement in Innovation Award, University of Calgary (2018)
- Schulich Faculty Achievement Award for Teaching (2020)
- Outstanding Reviewer, Institute of Electrical and Electronics Engineers (2017)
- GREAT Supervisor Award, University of Calgary (2016)
- Outstanding Teaching Performance, University of Calgary (2012–2016)

Professional Affiliations and Activities

- Member, Institute for Quantum Science and Technology (2022–present)
- Editor-in-Chief, Solid-State Circuits Society Magazine, Institute of Electrical and Electronics Engineers (2021–present)
- Chair, IEEE Solid-State Circuits and Circuits and Systems Societies, Southern Alberta (2009–2013)
- Member, International Square Kilometre Array Radio Frequency Systems Task Force (2007–2010)
- Member, APEGA (1997–present)
- Member, Institute of Electrical and Electronics Engineers (1996–present)

Women in Engineering & Geoscience Champion Award Recipient – Nannette Ho-Covernton, P.Eng.

This award is presented to members of APEGA in recognition of exceptional achievement as a champion of women in engineering and geoscience.

Professional engineer Nannette Ho-Covernton’s mission is to not only create a more sustainable world, but also to empower the engineers who are building it. With decades of experience in engineering, project development, and research commercialization and technology, she’s driving a global clean-energy future through scientific, technical, and creative ecosystem leadership.

As the sustainability lead for Spartan Controls, Western Canada’s leading industrial automation provider, Ho-Covernton is a liaison to industry, education, innovation, and environmental

communities. Through her contributions to advance youth and women in STEM leadership, she has changed the face of Canadian energy to be more inclusive, kind, and innovative.

Ho-Covernton is an accomplished engineer and leader, but finding her own path forward wasn't always easy. Early in her career, she faced barriers she hadn't expected, including sexism and discrimination. She persisted, and her skills and talent were recognized when she landed at Spartan in 1995, becoming one of the first women at the company to work in a technical role. "As an engineer, I love to solve problems, and this was just another challenge," she recalls.

In the years since, Ho-Covernton has been a beacon for countless women and other under-represented people. "Representation matters, especially for the next generation of girls and young women who benefit from having role models and mentors across various industries and sectors," she says.

At Spartan, Ho-Covernton leverages the unique strengths, experience, and knowledge of each employee, supporting them and connecting them to opportunities to grow their careers. She has helped spearhead the company's annual science outreach competition, VirtualSTEM, which aims to attract youth—particularly girls—into engineering and technology. She serves as an advisor for WISE Planet, a University of Calgary initiative that empowers women and other marginalized groups to be science and engineering change agents.

She's also championed diversity and inclusion in various ways: as chair of the Schulich School of Engineering Career Centre Advisory Council, which prepares students for workforce success; as an executive advisor for Avatar Innovations, a company dedicated to the energy transition solutions; and through her involvement with many other educational organizations and industry associations.

"For me, trying to understand different perspectives is a learning process and part of the innovation process," says Ho-Covernton. "Bringing together people with diverse backgrounds and knowledge is critical for both environmental sustainability and the sustainability of the engineering profession."

Awards and Distinctions

- Distinguished Collaborator Award of Excellence, Schulich School of Engineering, University of Calgary (2023)
- Diversity and Equity Alumni Award, Schulich School of Engineering, University of Calgary (2019)
- Presidents Award, Spartan Controls (2013)
- Jean Grenier Volunteer of the Year Award, Speed Skating Canada (2007)

Professional Affiliations and Activities

- Dean's Advisory Council, SAIT MacPhail School of Energy (2023–present)
- Board Member, Petroleum Technology Alliance Canada (2023–present)

- Executive Advisor, Avatar Innovations (2022–present)
- Co-Chair, Digital Oil & Gas Theme, Clean Resource Innovation Network (2021–present)
- VP Strategic Relations, WISE Planet (2020–present)
- Camp 18 Iron Ring Warden (2019–present)
- Chair, Schulich School of Engineering Career Centre (2018–2021)
- Board Member, Two Wheel View (2018–2021)
- Volunteer, Speed Skating Canada (1989–present)
- Member, APEGA (1988–present)

More information

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