

The Canadian
Academy of
Engineering



L'Académie
canadienne
du génie

Media Release

Fifty-two new Fellows elected into the Canadian Academy of Engineering

Ottawa – (14 June 2021) – President Yves Beauchamp announced the election of fifty new Fellows and two new International Fellows into the Canadian Academy of Engineering on June 14, 2021. The announcement is made in conjunction with the Academy's 2021 Annual General Meeting which was held by video conference due to the circumstances surrounding the COVID-19 pandemic. The Induction Ceremony, which will honor both the 2020 and 2021 elected Fellows, has been postponed to October 2021, and will be held virtually.

Dr. Beauchamp commented: "Over the past 33 years, Fellows of the Academy have provided engineering leadership in the fields of education, infrastructure, innovation, energy, transportation, and many more. New Fellows have been selected for their outstanding contributions to engineering in Canada and around the world and for their service as role models in their fields and to their communities." Citations and photographs for each of the new inductees follow.

The Canadian Academy of Engineering (CAE) is the national institution through which individuals, who have made outstanding contributions to engineering in Canada, provide strategic advice on matters of critical importance to Canada and to Canadians. The CAE is an independent, self-governing, and non-profit organization established in 1987. Fellows of the CAE are nominated and elected by their peers, in view of their distinguished achievements and career-long service. Fellows of the Canadian Academy of Engineering are committed to ensuring that Canada's engineering expertise is applied to the benefit of all Canadians.

The Canadian Academy of Engineering works in close cooperation with other senior academies in Canada and internationally. It is a founding member of the Council of Canadian Academies, along with the Royal Society of Canada (RSC) and the Canadian Academy of Health Sciences (CAHS). The CAE is also a member of the International Council of Academies of Engineering and Technological Sciences (CAETS), which includes 31 similar national bodies around the world and the Partnership Group for Science and Engineering (PAGSE), an association of more than 20 Canadian organizations in science and engineering, whose mandate is to educate and inform federal Parliamentarians, decision makers and other leaders of the importance and significance of Canadian research and innovation to economic development, and society as a whole.

For additional information or interviews, please contact:

Robert Crawhall, PhD, FCAE, P.Eng, PMP, ICD.D

Executive Director

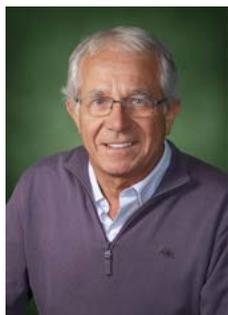
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NEW FELLOWS 2021



Franco Berruti, Professor, Western University



Prof. Berruti served as Dean of Engineering at the University of Saskatchewan and at the University of Western Ontario. He is the Founding Director of the Institute for Chemicals and Fuels from Alternative Resources (ICFAR) and he currently holds the “NSERC Industrial Research Chair in Thermochemical Conversion of Biomass and Waste to Bioindustrial Resources”. He has trained over 122 graduate students and 36 postdoctoral fellows, has contributed to over 320 refereed publications in prestigious journals, books and conferences, and he holds four patents. He received Bantrel Award in Design and Industrial Practice and the SCI Kalev Pugi Award.

Gilles Bourque, Senior Key Expert – Combustion, Siemens Energy Canada Limited and Adjunct Professor, McGill University



Gilles Bourque is a world-renowned gas turbine expert bringing together the industrial research as senior key expert in combustion at Siemens Energy Canada and academic research as adjunct Professor in the mechanical engineering department of McGill University. He has made significant contribution to the advancement of the development of aeroderivative gas turbine combustion system enabling enhanced operation and fuel flexibility, at the same time as reducing pollutant emissions.

James Burpee, Board Chair, Atomic Energy of Canada Ltd.



A strategic, results driven executive with extensive expertise from more than 40 years of experience in the electricity sector. In his 31 year career with Ontario Hydro/ OPG, he shaped corporate direction, influenced perceptions with political and industry stakeholders, and was a catalyst of change. He provided leadership in operation performance, fiscal accountability, new business relationships and strategic initiatives. He enhanced relationships with government representatives at federal, provincial and municipal levels. He has managed a range of organizations, including technology start-up companies, large corporations and national Industry trade associations.

Li Cheng, Chair Professor of Mechanical Engineering, The Hong Kong Polytechnic University



Dr. Li Cheng is an internationally renowned educator, researcher and engineering practitioner in mechanical engineering. Specialized in sound and vibration, wave manipulation and structural health monitoring, he made significant contributions to the advancement of knowledge in these areas. In addition to a large number of high-quality scientific contributions, his research has had direct impact on solving engineering problems through close collaboration with industry. Dr. Cheng has a prolific record of contributions to scholarly and professional organizations. He holds key leadership positions in learned societies and serves in some top-notch scientific journals in his area of expertise.

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Mark Diederichs, Professor of Geological Engineering, Queen's University



Dr. Diederichs is an accomplished Geological Engineer with an exemplary record of contributing to the profession and positively influencing students/peers. He is a world expert, prominent lecturer, and top researcher. He is a sought-after international expert consultant, with roles in design and construction of world class tunnelling, mining, and hydro-power projects, producing tangible results through improved understanding of rock engineering at the project scale. Thanks to his contributions to the engineering profession, there is vastly improved understanding by society, researchers, and industry regarding state-of-the-art geotechnical engineering. He is a visionary engineer with an outstanding record of creativity, enthusiasm, and innovation.

Octavia A. Dobre, Professor, Research Chair, Associate Dean of Research, Memorial University of Newfoundland



Dr. Octavia A. Dobre is an internationally renowned authority in wireless communications. She has made pioneering contributions to signal intelligence and emerging wireless technologies. Dr. Dobre is the recipient of numerous awards, from best papers, to outstanding service and inspiring member awards. She was elevated to IEEE Fellow and EIC Fellow for her exceptional technical achievements and service leadership in the profession. She has been a strategic frontrunner in numerous leadership roles in technical societies, such as the inaugural Chair of the IEEE Women in Communications Engineering Committee and inaugural Editor-in-Chief of the IEEE Open Journal of the Communications Society.

Marc Donato, Aerospace Consultant, Expert-Conseil Donato Inc.



For his leadership in the development of Canadian communication satellites, remote sensing satellites, and space-based robotics. For his critical national work on positioning the Canadian Space industry as a world leader and also, for his dedication to building up the industry, aerospace higher education, and the profession.

Tom Duever, Dean, Faculty of Engineering and Architectural Science and Professor of Chemical Engineering, Ryerson University



In his 30-year career as a strategic leader, award-winning instructor and accomplished researcher, Dr. Thomas Duever has led two Ontario universities through significant facility expansions and programming innovations, changing how engineering is taught and practiced. Since arriving at Ryerson University in 2014 as Dean of the Faculty of Engineering and Architectural Science (FEAS), he has helped create six new graduate programs as well as the FEAS All-In-Approach to education, an innovative whole-student support program. His numerous academic and professional collaborations have enriched teaching and learning and advanced the engineering profession, most recently in the areas of equity and inclusion.

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Ashraf El Damatty, Professor and Chair, Department of Civil and Environmental Engineering, Western University



Dr. El Damatty, Chair of the Department of Civil Engineering and Research Director of the Wind Engineering, Energy and Environment Research Institute at Western University, is an international leader in structural and wind engineering. His work, incorporated into the American Society of Civil Engineers guidelines, represents the first specifications for designing tornado- and downburst-resistant transmission lines. He is a Fellow of the Engineering Institute of Canada and recipient of numerous awards, including the 2018 Ontario Professional Engineers Medal for Research. He is an honorary professor at four international universities and serves as editor-in-chief of the international journal Wind and Structures.

M. Hesham El Naggar, Distinguished University Professor, Western University



Dr. Hesham El Naggar is a Distinguished University Professor at Western University. He is an internationally acclaimed scholar in the fields of foundation dynamics, deep foundations, and geotechnical earthquake engineering. He advanced the state-of-the-art in analysis and design of foundations for dynamic loads. His innovative work on foundation dynamics led to the development of DYNA6, the industry standard in machine foundation design. His work on foundation design and geotechnical earthquake engineering has been incorporated into design guidelines recommended by regulatory bodies and learned societies.

David Erickson, SC Thomas Sze Director and Sibley College Professor of Mechanical and Aerospace Engineering, Cornell University



David Erickson is the SC Thomas Sze Director and Sibley College Professor of Mechanical and Aerospace Engineering at Cornell University. Professor Erickson is recognized leader in microfluidics and its application to a broad range of areas including mobile and global health technology, medical diagnostics, photonics, and nanotechnology. Prof. Erickson has received numerous research awards including the Presidential Early Career Award for Scientist and Engineers (PECASE) by President Obama. For his efforts in co-founding the field of optofluidics, Erickson has been named a fellow of the Optical Society of America and the American Society of Mechanical Engineers.

Zhen Fang, Professor, Nanjing Agricultural University



Dr. Fang is a world-renowned expert in renewable energy and green technologies. He has made major contributions to the fields of biomass hydrolysis, biodiesel production, nanocatalysts for biofuel synthesis, hydrothermal process. He has trained many students and engineers in Canada, Japan, Malaysia, and China. He serves both as editor and editorial board member of major energy journals. As the founding Editor-in-Chief, Springer Book Series-Biofuels and Biorefineries, he is leading the Canadian editorial team to organize and assist authors to publish a series of biomass-related books that have made exceptional contributions to the delivery of the UN Sustainable Development Goals.

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François Gagnon, Chief Executive Officer, École de technologie supérieure



Professor Gagnon is an internationally recognized Canadian forward-thinking researcher who had a great impact on the educational and industrial level. He made some breakthroughs over the last three decades while he created and led two research chairs, many initiatives, spin-offs and institutes, and contributed to patents or led his peers to obtain their own. From designing leading edge radios and inventing a code technique that has an economic impact of around one billion dollars in Canada to allowing saving lives and giving access to virtual books to remote villages, his research is of great value technology-wise, money-wise and human-wise.

Mark Green, Professor, Civil Engineering; Provost and Vice-Principal (Academic), Queen's University



Dr. Mark F. Green, FACI, FCSCE, FIIFC, PEng is Provost and Vice-Principal (Academic) at Queen's University. He was recently the Program Leader for the innovative NSERC CREATE program, "Sustainable Engineering in Remote Areas." Dr. Green is an internationally recognized leader in applications of fibre reinforced polymer (FRP) materials to concrete structures, and the dynamics of bridge-vehicle interaction. He has published over 250 journal and conference papers, and has won the Professional Engineers Ontario Medal for Research and Development and the Premier's Research Excellence Award. He is an advocate for engineering education for Indigenous students.

Song Guo, Professor, Department of Computing, The Hong Kong Polytechnic University



Dr. Guo is an internationally prominent researcher, educator, and technology leader in cloud computing, edge AI, big data, and distributed systems. His work has had a broad and seminal impact from the advancement of scientific knowledge to industrial innovation. He has been widely recognized for his pioneering contributions to the resilient management system widely used in post-disaster applications. Numerous edge AI technologies developed in his lab have been commercialized for civilian applications. His landmark research, combined with his outstanding leadership in advancing engineering knowledge, have built up spectacular effects of edge intelligence that benefit the broader community.

James Johnson, Professor, Western University



Dr. James Johnson is an internationally recognized innovator and researcher in the field of upper limb biomechanics. He has developed a research program focusing on the biomechanics of the upper limb, with special interest in implant design and testing. In collaboration with his surgeon colleagues, Dr. Johnson has been the co-inventor of implants that have become top selling in the world. His biomechanical research focus has led to significant changes in the surgical techniques and rehabilitation protocols for patients. Dr. Johnson has trained 82 graduate students, 130 engineering undergraduate students and 60 surgical residents, and published 220+ refereed journal papers.

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Faisal Khan, Professor and Canada Research Chair (Tier I), Memorial University of Newfoundland



Dr. Faisal Khan is a leading authority in safety and risk engineering, asset integrity, and offshore engineering, particularly in harsh environments. He has developed risk-based methodologies that have been widely adopted by industry and academic institutions. His research has been instrumental in guiding industry policies/practices for energy corporations globally as well as leading to the creation of policies within national and provincial government agencies. As an academic leader, Dr. Khan established the Process Engineering Undergraduate Program at Memorial University based on the principles of clean and green engineering and sustainable resource development - the first of its kind in Canada.

Dongyang Li, Professor, Dept. of Chemical and Materials Engineering, University of Alberta



Prof. D.Y. Li is a world-renowned scientist and innovative researcher in tribo-materials. His interdisciplinary research and novel material design methodology substantially contribute to the advance of material technology and impact the wear control for increased competitiveness of Canada's resources industry on the global fuel market. Prof. Li has over 360 peer-reviewed scientific publications plus developed technical standards and guidelines for authoritative handbooks/encyclopaedias. He serves the editorial board for eighteen international journals. His ground-breaking research and contributions to industry and professional societies are highly recognized internationally. Dr. Li is the recipient of 2020 MetSoc Distinguished Materials Scientist Award (MetSoc of CIM).

Marin Litoiu, Professor, York University



Dr. Litoiu is a world-renowned pioneer and leader in the field of adaptive and self-managing software systems. His pioneering and outstanding contributions to the design, architecture, and implementation of self-managing software systems have been adopted widely by the public and private sectors. He is co-founder of the flagship conference of this field. He has made outstanding contributions to advancing software engineering research and practice in Canada through exemplary collaborative university-industry partnerships. He is not only a stellar researcher but also a visionary entrepreneur commercializing his innovations.

Pengfei Liu, Professor of Marine Hydrodynamics, Director of Marine Propulsion Research Laboratory, Newcastle University



Pengfei Liu is a registered naval architect with over 40 years of expertise in marine propulsion. A graduate of B.Eng. at WHUT, M.Eng. and PhD at MUN, and a SNAME Fellow, he has taught and trained thousands of professionals in Canada, Australia and the UK. During his proud services in Canada as an educator for 8 years and a scientist for 17, he developed several breakthrough technologies. Recognized worldwide as an expert in his field, he leads the Marine Propulsion Research Laboratory at Newcastle University, UK, and is building a world-class centre for propulsion hydrodynamics and renewable energy.

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Xue (Steve) Liu, Professor, McGill University



Dr. Xue (Steve) Liu is a Professor and William Dawson Scholar at McGill University and VP R&D, Chief Scientist, and Co-Director of the Samsung AI Center Montreal. He is a prominent researcher, mentor, and entrepreneur. He is an international authority on intelligent and autonomic computing, focusing on power and performance management. He published over 300 highly-cited research papers in premier journals and conference proceedings. His inventions have been engineered into real-world systems and impact on the lives of tens of millions of people worldwide. He is an IEEE Fellow and has received many awards, including MITACS Award for Exceptional Leadership - Professor.

Diego Mantovani, Professeur, Université Laval



Diego Mantovani is a Tier 1 Canada Research Chair in Biomaterials and Bioengineering for the Innovation in Surgery. He is recognized for seminal contributions in using materials engineering to innovatively solve clinical problems linked with congenital diseases in children and adult patients, including cardiac, neurological, dental and musculoskeletal applications. His interdisciplinary, creative and project-oriented research lead to the commercialization of medical implants worldwide. He is very active in public outreach aimed at broadening the role of engineering in medicine, and a respected leader in creating cross-opportunities for academic and industrial to merge their efforts for improving health and welfare, globally.

Catherine Mavriplis, Professor, University of Ottawa



Dr. Catherine Mavriplis' 40-year association with engineering has provided exceptional training for tens of thousands of students in core disciplines as well as professional skills development for leadership in the profession. As an expert in Computational Fluid Dynamics, she has advanced the state-of-the-art for adaptive high order methods and engaged the research community in new interdisciplinary research avenues. As a passionate advocate for the advancement of women in engineering, she has developed a rich array of programming to recruit, advance and empower women in the profession, providing lasting models of national scope, both in the US and Canada.

Kim McAuley, Professor, Department of Chemical Engineering, Queen's University



Kim McAuley is an award-winning researcher in mathematical modeling of chemical processes. McAuley's models and statistical techniques are used by chemical and pharmaceutical corporations for process design, scale-up, optimization and control. Collaborating with medical physicists, McAuley utilized her modeling and statistical skills to advance the field of radiation dosimetry. Her team developed gel dosimeter recipes with enhanced sensitivity and chemical safety, which are used for quality assurance of 3D radiation dose distributions generated by cancer radiotherapy equipment. She is Lab Leader of the Chemical Process Mathematics Lab, a multi-institutional laboratory of the Fields Institute's Centre for Quantitative Analysis and Modeling.

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Walter Mérida, Associate Dean, Research and Industrial Partnerships, Faculty of Applied Science, University of British Columbia



Dr. Mérida is an internationally recognized clean technology innovator. He has developed energy system architectures, integrated hydrogen solutions, and techno-economic models to enable a low-carbon society. His research spans the scales of energy conversion: from fundamental materials characterization, to supercritical water electrolysis, to city-scale testbeds linking energy storage, transportation, telecommunications and urban design. He is a Professor of Mechanical Engineering, the Associate Dean of Research and Industrial Partnerships for Applied Science, and a Senior Advisor to UBC's President and Vice-Chancellor. He serves on several Advisory Boards, and most recently, he co-chaired UBC's Climate Emergency Taskforce.

Lorraine Mitchelmore, Corporate Director, Suncor Energy and Bank of Montreal



Lorraine Mitchelmore is a former Country Chair for Shell Canada providing leadership for more than 30 years in international oil and gas across the full value chain, including exploration and production operations and business development. Lorraine's major accomplishments include transforming oil sands business and building a North America unconventional light tight oil and natural gas shale assets. She has a strong track record in business transformation as well as influencing governments and regulators to develop policies and regulations that enhance both business value and greater public good. Lorraine is currently on the Boards of BMO and Suncor Energy.

John Newhook, Dean, Faculty of Engineering, Dalhousie University



Dr. John Newhook Ph.D. P.Eng. is a world renowned researcher who has major contributions to the field of Civil Engineering. He has developed new technologies for structural health monitoring, and has made major contributions to the field of bridge design, including advancements in soil-steel bridges, and the use of novel materials in bridge design. He is also recognized as a leader in both Canadian Engineering Community and the University Research Community. He has spearheaded the development of a number of important national and international research initiatives and has been a leader in a number of national professional societies and associations.

Ioan Nistor, Professor and Assistant Vice-Provost Graduate Studies, University of Ottawa



Ioan Nistor is an internationally acclaimed expert in performance and design of civil engineering infrastructure subjected to extreme coastal hazards, such as tsunamis and hurricanes. He has had an outstanding engineering and academic career, first as a consulting engineer in Montreal and then as a professor of civil engineering at the University of Ottawa. As a prolific author of high-impact technical publications, he has contributed towards the development of international design standards and tsunami risk mitigation strategies. He has held leadership positions, including appointments as Vice Dean, Interim Dean and Assistant Vice Provost at the University of Ottawa.

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Kenneth Ogilvie, President, Kenneth Ogilvie Consulting



Ken Ogilvie has had a distinguished career in the environmental field, beginning as a project engineer with the federal government and progressing through various policy-related positions with the federal and two provincial governments — Manitoba and Ontario. He then served for twelve years as the Executive Director of Pollution Probe, one of Canada's premier environmental organizations. He has been a Board member and vice-chair as well as an Advisory Group member of a number of not-for-profit organizations, and was a co-founder of QUEST (Quality Urban Energy Systems of Tomorrow). He remains active as a consultant to government, industry and environmental groups. He was awarded honorary doctorates for his achievements and service by the University of Waterloo, Ontario, in 2009, and by Thompson Rivers University, British Columbia, in 2011.

Beth Parker, Professor, University of Guelph



Dr. Parker is a global leader in fractured porous geologic media contamination, helping to protect water supplies in Guelph and many other communities. She pioneered new fractured bedrock characterisation methods (as of April 2021: 4 patents and more than 165 refereed papers, among other contributions), including novel downhole borehole devices and procedures for investigating contamination in bedrock aquifers. These methodologies have been used at complex contamination sites worldwide. Her paradigm-shifting contributions have changed how engineers can and should study contaminated sites to inform their remediation decisions. Her new technologies enable effective monitoring of bedrock aquifers.

Ugo Piomelli, Professor, Queen's University



Professor Piomelli is an international leader in the field of Fluid Mechanics. He has developed advanced models for the prediction of turbulent flows, and applied them successfully to problems in engineering and the natural sciences. His studies have resulted in improved understanding and prediction of the physics of turbulence. Models he introduced are in widespread use in the industrial and research communities. His impact is reflected in his publication and citation records, in the placement of his students in faculty positions at prestigious Universities in the USA and Europe, and in the Awards and Fellowships he has received.

Konstantinos Plataniotis, Professor, University of Toronto



Konstantinos Plataniotis is a highly regarded researcher, engineering educator, and volunteer leader of the international engineering community who has made outstanding contributions to the engineering profession through his technical achievements, mentoring of engineers, leadership in engineering societies and conferences, and knowledge translation to industry. Professor Plataniotis is internationally recognized for his adaptive imaging framework which unified previous seemingly unrelated results, yielded new theoretical contributions, and led to the development of practical implementations. His contributions to engineering have been recognized with fellowships in IEEE and Engineering Institute of Canada, the J.M. Ham Outstanding Engineering Educator Award, and research paper prize awards.

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Warren Poole, Professor, The University of British Columbia



For innovation in applying academic research on through-process modelling to practice in industrial manufacturing; for significant impact on new technologies for light-weighting in transportation and the resulting reduced greenhouse gas emissions; and for sustained leadership in the field of materials and manufacturing engineering.

Michèle Prévost Professor, Polytechnique Montreal



Michèle Prévost is a recognized world expert in drinking water from source to tap. As an Industrial Drinking Water Chair, Professor Prévost has contributed exceptionally to this discipline finding innovative solutions to treat and distribute drinking water and providing evidence for the development of effective water quality standards. Her research work is conducted in close partnership with drinking water producers, technology providers, governmental agencies and municipalities to deliver sustainable solutions. Recognized as a world leader, her work has had measurable impacts in Canada and internationally, contributing to the improvement of drinking water quality and the protection of public health.

John Saw, EVP, Advanced & Emerging Technologies, T-Mobile



Dr. John Saw's leadership in wireless is marked by many pioneering achievements. While at Clearwire, he led the team that developed the standard for the 2.5 GHz spectrum band, the most widely used band in smartphones globally today. As CTO at Sprint, he deployed one of the first 5G networks in the world and originated the use of a new radio technology (Massive MIMO). Dr. Saw holds 6 US Patents and was named to the 2020 Top 100 Most Influential people in 5G Globally. He was also appointed by the FCC Chairman to serve on the Broadband Deployment Advisory Committee.

Gary Smith, Executive Vice President, Eastern Canadian and Caribbean Operations, Fortis Inc.



Gary Smith has spent 37 years improving the utility system across North America and the Caribbean. He is Executive Vice President, Eastern Canadian and Caribbean Operations, Fortis Inc., a leader in the North American regulated electric and gas utility industry. His leadership through Hurricane Irma relief efforts earned the Edison Electric Institute "Emergency Assistance Award" in 2018. His industry and community involvement is extensive, including Vice Chair of the Strategic Steering Committee on Power Engineering for the Canadian Standards Association and Chair of the Board of Directors of the Dr. H. Bliss Murphy Cancer Care Foundation in Newfoundland and Labrador.

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Elvino Silveira Sousa, Professor, University of Toronto



Elvino Sousa is internationally recognized for his contributions to cellular system modeling and performance optimization including CDMA systems and transmitter diversity techniques. He was a pioneer in the modeling of Packet Radio Networks using techniques now known as Stochastic Geometry. His research in transmitter diversity influenced the transmitter diversity scheme adopted in the 3GPP LTE wireless standard. He was a pioneer in proposing Autonomous Infrastructure Wireless Networks and Two-Tier Wireless Networks, now known as Integrated Access and Backhaul, long before these concepts became popular.

Sheryl Staub-French, Professor of Civil Engineering and Associate Dean of Equity, Diversity & Inclusion in the Faculty of Applied Science, The University of British Columbia



Dr. Staub-French is an innovative, multidisciplinary researcher enabling the digital delivery of sustainable building projects through collaborative use of building information modeling (BIM). She has made significant contributions in developing guidelines and best practices for technology adoption; collaborating with industry and government to advance technology transfer; and developing tools to support virtual design and digital delivery. She is the first Associate Dean of Equity, Diversity and Inclusion in the Faculty of Applied Science at UBC and was the Goldcorp Professor for Women in Engineering. She is a strong leader and advocate in advancing equity and diversity in engineering education and the engineering profession. Through her innovative research, dedication to the community, and tireless outreach efforts, Dr. Staub-French has had a significant impact on the work practices and diversity of the engineering profession.

Qiao Sun, Professor, Department of Mechanical and Manufacturing Engineering, University of Calgary



Dr. Qiao Sun is an established scholar, effective educator and academic leader. She has contributed to the field of dynamic systems modeling, control, and machinery fault diagnosis. She drives research that challenges assumptions and pushes performance boundaries in terms of precision, speed, and reliability. As an educator, she endeavors to create an inclusive space for all learners. As an academic administrator, she works to build bridges, foster understanding, and value differences with the goal to advance equity and diversity in engineering and society at large. She is highly regarded nationally and internationally for her leadership and dedication to inclusive excellence.

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Ye Tao, Principal Research Officer, National Research Council Canada



Dr. Ye Tao is a physicist and a Principal Research Officer at the Advanced Electronics and Photonics Research Center, the National Research Council Canada. He has conducted pioneering research on organic LEDs, photovoltaics, and printable electronics. His research focus is to understand the relationship between molecular structure, thin-film morphology, and device performance. His efforts in this field over the past two decades have established him as one of the most influential research leaders in Canada in this field. His work has directly contributed to the formation and growth of the organic electronics and the printable electronics industry in Canada.

Bruce Taylor, President, Enviro-Stewards Inc.



Bruce Taylor is a talented engineer and innovative entrepreneur of the highest integrity who has founded an award-winning engineering firm, Enviro-Stewards, that brings economic, environmental, and social benefit to its clients. He had the vision to establish an international social venture, Safe Water Social Ventures, that provides safe drinking water and employment to developing communities in East Africa. Bruce's unique blend of technical skills, entrepreneurship, and passion for helping others makes him an outstanding example of an engineer employing his talents to create a positive and lasting impact on society, the environment, and the world.

Cheryl Trudell, Research VP, Imperial Oil



Cheryl Trudell has always had a passion for math and science and has worked hard to be a strong engineering leader and mentor. Through her role at Imperial, she fosters an innovative environment for her team and she is a strong advocate for creative engineering solutions to problems and challenges. She supports her team to strive for technical excellence in everything they do and she gives them many career opportunities to grow both personally and professionally.

Rajiv K. Varma, Professor, Western University



Dr. Rajiv Varma is an internationally recognized researcher, inventor, and leader in FACTS, solar and wind power systems. Among his pioneering contributions has been a major ground-breaking utility-implemented award-winning technology, PV-STATCOM, that enables solar PV plants to provide FACTS functionalities at one-tenth cost of FACTS themselves. Dr. Varma's significant contributions include 13 granted and 14 pending international patents, 180 publications and highly acclaimed Wiley/IEEE Press book on FACTS. He has made exemplary contributions to training of utility engineers, system planners, manufacturers, academics, and researchers, worldwide. He is an outstanding educator and has been honoured with numerous university teaching excellence awards.

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Priti Wanjara, Principal Research Officer, National Research Council Canada



Dr. Priti Wanjara (PhD, Metallurgical Engineering, McGill, 1999) is a world-renowned pioneer in the advanced welding technologies at the forefront of 21st century engineering and manufacturing. At the National Research Council's Aerospace Research Centre (AERO) she provides visionary team leadership for pushing the frontiers of discovery science. Through extensive collaborations with the world's leading engineering companies she has transferred this knowledge, significantly improving green transportation and energy production efficiency. Dr. Wanjara is female trailblazer who has made outstanding career-long contributions to professional societies and is widely honoured for achievements in making and applying advances in fundamental and applied materials science.

Daryl Wilson, Executive Director, Hydrogen Council



A pioneer in the application of hydrogen for clean energy, Daryl Wilson currently serves as the inaugural Executive Director of the international Hydrogen Council. From 2006-2019 he was President and CEO of Hydrogenics, a global provider of advanced hydrogen solutions, where he spearheaded a number of industry firsts. Mr. Wilson has also held senior leadership positions at Royal Group Technologies, Zenon Environmental, TOYOTA and DOFASCO, where his teams garnered awards for innovation, quality and productivity. Mr. Wilson served on the Canadian National Economic Strategy Table for Clean Technology, and as a certified corporate director on the boards of several public, private and not for profit organizations.

Qiang Yang, Chair Professor, Hong Kong University of Science and Technology



Prof. Qiang Yang is an international leader in the engineering practice of large-scale artificial-intelligence and data-mining solutions for the benefit of our society. He leads in the area of transfer learning and federated learning to tackle small data, data silos, user privacy and data security problems in practice. He has developed open-source and industrial-strength systems for inclusive finance, health and ecommerce applications for millions of users and businesses worldwide. His work has made deep impact with large-scale AI and data mining engineering systems and applications, new standards, opensource software, and has advanced the state of the knowledge in our society.

Ruilin Yang, Principal Research Fellow, Orica Limited



Dr. Ruilin Yang has had a long and extremely productive career conducting research in the field of explosive technologies. He has contributed a great deal to the theoretical and practical aspects of blasting design. He has solved long-standing problems in the field sympathetic detonation and post-blast fumes for coal mines in the Powder River Basin and elsewhere in the world, which greatly improved the coal mine blasting safety, productivity, and environmental effects. Several applied blasting theories and models he developed have been applied widely in the world and had transformative impacts on the blasting industry. He works with Orica, the world's largest provider of commercial explosives and innovative blasting systems, where he currently serves as a Principal Research Fellow, the organization's highest technical designation. He also sits on the editorial boards of three prestigious international technical journals.

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Fei Richard Yu, Professor, Carleton University



Dr. F. Richard Yu is an internationally recognized research leader in mobile systems. His pioneering contributions have significantly impacted research and development in this area through over 600 highly-cited publications and 28 granted patents. His mobility management algorithms have been adopted in mobile systems standards. He is among the top 1% of highly cited researchers on Web of Science, demonstrating his worldwide influence. He is a Fellow of IEEE, IET, and EIC, an elected member of the Board of Governors of the IEEE Vehicular Technology Society, and the recipient of numerous prestigious awards for research, teaching and service.

Alfred Zeuner, Past President and Founder, AXYZ Automation Group



Alf Zeuner co-founded AXYZ International in 1991 and over the next 28 years would build it into Canada's largest CNC Router Machine manufacturer. He retired as President in early 2019 and is now the technical advisor to the board of directors and the new President. Prior to his entrepreneurial career Alf was a Canadian naval officer retiring in 1989 as a Lieutenant Commander. He is graduate from MacMaster University in Hamilton, Ontario and holds both a Bachelor's and Master's Degrees in Engineering Physics. Alf is married and living in Burlington, Ontario, and has three grown children.

Dapeng David Zhang, Professor, School of Data Science, Chinese University of Hong Kong (Shenzhen)



David Zhang is widely recognized as a world leading expert and a pioneer in biometrics engineering for his extraordinary accomplishments. He initiated and made profound contributions to several research areas, including palmprint authentication, and medical biometrics sensors and systems. He has been named a Highly Cited Researcher in Engineering by Clarivate Analytics for seven consecutive years (2014-2020). He has an H-index of 120 and is ranked about 80 among Top 1,000 Scientists internationally in Computer Science/Electronics. He is a Fellow of The Royal Society of Canada, a Fellow of International Association of Pattern Recognition, and a Life Fellow of IEEE.

NEW INTERNATIONAL FELLOWS 2021

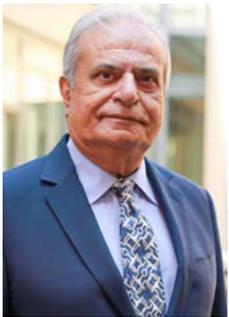


Way Kuo, President and University Distinguished Professor, City University of Hong Kong



A pioneer in systems reliability, Way Kuo has made fundamental contributions to, and published classic books on, optimal reliability design for electronics and energy systems in environmental sustainability. As President of City University of Hong Kong, which is considered among the most progressive universities globally in all key measures, he strongly advocates campus autonomy and academic freedom. He combines an unflagging dedication to academia and professional service to the international community alongside long-term interactions with Canadian institutions.

Asad M. Madni, Distinguished Adjunct Professor and Distinguished Scientist, University of California Los Angeles



For remarkable contributions in engineering innovations/technology commercialization. Asad Madni was President/COO/CTO of BEI Technologies where he led the development/commercialization of sensors and systems, including the Control System for Hubble Space Telescope's Star Selector which provided it with unprecedented accuracy and stability, resulting in remarkable images that have enhanced our understanding of the universe; and the revolutionary MEMS GyroChip® technology for Electronic Stability Control/Rollover Prevention in passenger vehicles, saving countless lives worldwide. Previously, he was Chairman/President/CEO of Systron Donner. He guided major scientific research at Ryerson University and served as doctoral adviser to prominent Canadians. He is Distinguished Professor/Scientist at UCLA.

HONORARY FELLOW 2021

Lorne M. Trottier, Co-Founder, Matrox Electronic Systems Ltd.



Engineer, entrepreneur and philanthropist, Lorne Trottier has poured his passion for science into research, technological development and education in Quebec. In 1976, he co-founded Matrox Electronic Systems Ltd., a company known for its innovative computer graphics products. Through his technical innovation and market sense, he has helped Matrox become a world-leading multinational company in the field of computer graphics, video and imaging. He is also unfailing in support of his alma mater, McGill University, in addition to supporting Polytechnique Montreal and the Montreal Science Centre. He was named a Member of the Order of Canada in 2007 and promoted to Officer in 2016. Lorne was elected as a Fellow of the Canadian Academy of Engineering in 2009.