



Media Release

Fifty-nine new Fellows inducted into the Canadian Academy of Engineering

Ottawa – (18 June 2018) – President Eddy Isaacs inducted 57 new Fellows and two new International Fellows into the Canadian Academy of Engineering on 18 June 2018. The ceremony took place in Calgary, in conjunction with the Academy's 2018 Annual General Meeting and Symposium. Dr. Isaacs commented: "The new Fellows are engineers of outstanding abilities and of widely varying backgrounds, from Industry and Academe and Government. What they all have in common is the demonstrated desire and ability to go beyond the normal practice of engineering and contribute in exemplary ways towards their fields and to their communities. We expect great achievements through their participation in the Academy's activities. In the past, Fellows of Academy have produced major studies in the fields of education, energy and the innovation. We look forward with boundless anticipation to how these new Fellows will build upon these good works and explore new and exciting areas of engineering and its impact on public policy." Citations and photographs for each of the new inductees follow.

The Canadian Academy of Engineering (CAE) is the national institution through which Canada's most distinguished and experienced engineers provide strategic advice on matters of critical importance to Canada. The CAE is an independent, self-governing and non-profit organization established in 1987. Members of the CAE are nominated and elected by their peers to Fellowships, in view of their distinguished achievements and career-long service to the engineering profession. 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* and the *Canadian Academy of Health Sciences*. The CAE is also a member of the *International Council of Academies of Engineering and Technological Sciences*, which includes some 26 similar national bodies around the world.

For additional information or interviews, please contact:

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Executive Director

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Samuel Ariaratnam
Arizona State University



Dr. Samuel T. Ariaratnam is an internationally-renowned leader in horizontal directional drilling and trenchless engineering applications. His research in this area has created new technologies in construction engineering and applications of underground trenchless techniques. He has published over 300 technical reports and papers, has co-authored eight textbooks, and holds four patents. His contributions to engineering have been recognized by numerous organizations, including the American Society of Civil Engineers (ASCE), which awarded him the prestigious John O. Bickel Award and the Arthur M. Wellington Prize. Dr. Ariaratnam was elected as a fellow of the ASCE in 2015.

Bruce Aubin
Air Canada / USAirways (retired)



Bruce Aubin grew up in a Franco-Ontarien home in Hamilton, ON. His 50+ year career in airline technical operations, aircraft maintenance and flight safety culminated in the role of Executive Vice-President of Air Canada and brought global recognition as a leader on these vital topics. Bruce served on many technical and professional boards, including a term as President of SAE International - one of the world's largest and most important technical organizations. Besides his professional and volunteer work, Bruce Aubin is a philanthropist, and the CAE is proud to administer a student award that bears his name.

Annette Bergeron
Bergeron Consulting



Annette is a passionate advocate for the engineering profession. As President of the Ontario Society of Professional Engineers and Professional Engineers-Ontario, and as upcoming President of Engineers Canada, she has exemplified leadership in governance, advocacy, and promotion of the profession. With her experience on the Board of Directors of the Kingston General Hospital, and as a Lecturer and Director at Queen's University, she has not only greatly influenced the engineering profession, but also the healthcare and academic communities. Her work has been acknowledged by a Fellowship from Engineers Canada and by being named twice to the Top 25 Women of Influence in Canada.

Catherine Booth
Booth Advisory Inc.



Catherine Booth has made superior contributions as an engineer, consultant, Chief Information Officer and Board member. She has managed large-scale, complex, technology-based transformation projects that have enabled organizations in need of broad changes to their processes, strategies, technologies and human resources to stay competitive and successful. She is a tireless mentor of women in engineering and other fields, and has pioneered the teaching of change and project management to engineers as an industry professor. She received a Top 40 Under 40 Award (2003) and was named one of Canada's 100 Most Powerful Women (2009).

Pavel Cheben
National Research Council of Canada



Pavel Cheben has made pioneering contributions to photonics and integrated optics science and technology, in particular the discovery of a new type of optical waveguide based on subwavelength grating engineering. This work is of great importance in advanced silicon photonics integrated circuits. He also contributed to the discovery of static Fourier-transform on-chip spectrometer leading to ultra-compact spectroscopic instruments, and contributed innovations in the technology of the evanescent field waveguide sensors and engineering applications in genomics and pathogen detection. He has also made exceptional contributions to the engineering profession by organizing major international conferences.

Dave Collyer
Collyer Business Consulting Inc.



Dave Collyer is an experienced strategic and operational leader in the Canadian energy sector, with a strong focus on integration of technical, economic and public policy considerations in business decisions. He retired as President of the Canadian Association of Petroleum Producers (CAPP) in December 2014. He led CAPP's activities in education, communications and engagement, and policy / regulatory advocacy on behalf of its members. Prior to joining CAPP, he was President and Country Chair for Shell Canada. During his 30-year career with Shell, he held a broad range of technical, engineering, business, marketing and senior leadership roles.

George Demopoulos
McGill University



George Demopoulos holds the Gerald Hatch Chair in Engineering at McGill University. He is internationally renowned for outstanding research in hydrometallurgy and advanced energy material processing, academic leadership, and professional contributions. Dr. Demopoulos has contributed to the training of over 100 researchers in industry-linked projects and published more than 250 influential papers. His work has enabled ground-breaking developments in the environmentally sensitive area of arsenic immobilization, which has assisted with the sustainable exploitation of mineral resources, and opened new pathways via impactful collaborative research in engineering scalable and clean processing of advanced battery and photovoltaic materials for a green energy future.

Sean Donnelly
ArcelorMittal Dofasco



Sean Donnelly leads one of the world's largest steel and mining companies, and is known for his contributions to the Canadian steel industry for having made a profound impact on the automotive, construction and manufacturing, distribution, energy and packing sectors. He is also known for enhancing Canada's competitiveness through his service, including in NAFTA. He is recognized for his engineering contributions, compassion for 5,000+ employees, and dedication to his local and regional communities. Sean Donnelly has demonstrated both technological and managerial leadership with the aim of bettering our nation's prosperity.

Naser El-Sheimy
University of Calgary



Dr. El-Sheimy is a Tier-1 Canada Research Chair in Geomatics Multi-Sensor Systems at the University of Calgary. He and his team have made important impacts on geomatics systems for navigation and GIS applications, such as real-time mapping of forest fire fighting and integrating GPS with inertial navigation systems. His work is widely used by industry, which is the ultimate test for research. His team has developed the first software for tracking pipeline integrity monitoring gauges, the first commercial software for integrated navigation systems based on GPS, and one of the first smartphone location applications for emergency and search and rescue applications.

James Estill
Danby Appliances



Jim Estill has made an impressive impact on Ontario during his stellar career and is renowned for his remarkable business achievements across several sectors, including the financing of numerous start-up companies. He actively mentors new entrepreneurs who are creating jobs and producing local wealth. He displays an uncanny knack for envisioning opportunities unseen by others, and this has enabled him to be an early supporter of innovations in the communications industry. He is a philanthropic leader and outstanding humanitarian who has contributed to many charitable causes, the most public of these being the personal sponsorship of 58 Syrian refugee families.

Amir Fam
Queen's University



Amir Fam is the Donald and Sarah Munro Chair Professor and Associate Dean of Engineering and Applied Science at Queen's University. He is also Co-Editor of the Canadian Journal of Civil Engineering, Vice-President and Treasurer of the International Institute for FRP in Construction, and a former Canada Research Chair. Dr. Fam is an active researcher in the area of structural engineering using FRP reinforcements in bridges and buildings, and he has published 140+ refereed journal papers, 130 conference papers, five books and book-chapters, and 40 reports. He has received an Ontario Early Researcher Award, a Teaching Award, and is a Member of the Royal Society of Canada.

John Fraser Forbes
University of Alberta



John Fraser Forbes is a leading authority on process control and optimization operations, a distinguished academic leader and an innovative educator. His research on high performance control and optimization has created significant economic value through industrial applications. As Dean of the Faculty of Engineering at the University of Alberta, his leadership continues to contribute to the growth of the faculty, and he is the driving force behind the University's transformation into an international leader in research and innovation, particularly in renewable energy research. He has made impactful contributions to Canadian industry through successful collaborative projects, and has demonstrated his commitment to excellence in education for the next generation of engineers.

Francis (Stuart) Foster
Sunnybrook Research Institute



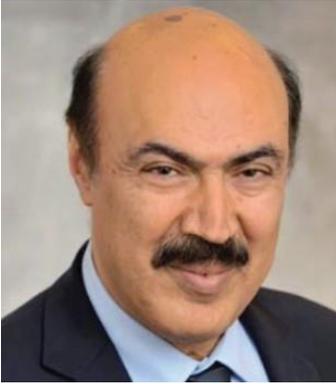
Stuart Foster pioneered the field of high-frequency ultrasound and translated its technologies into clinical and preclinical imaging systems. As a Tier-1 Canada Research Chair, his research has focused on the development of innovative technologies that have solved problems for biomedical researchers and clinical practitioners. The technology developed in his laboratory has been fully commercialized and is now considered the gold standard in high-frequency ultrasound, with users in over 1,500 organizations around the world. The recent FDA approval of the clinical version of the latest technology will open up many new applications in neurosurgery, neonatal imaging, and musculoskeletal imaging.

Diane Freeman
City of Waterloo



Throughout her career, Diane Freeman has demonstrated how an engineering view of the world can contribute to all aspects of our lives. She has not only practised engineering and served as President of Professional Engineers Ontario (PEO), but has also served as an Elected Councillor for 11 years in the City of Waterloo. In this role, she established the Butterfly Centre, which has piloted STEM education for children under 6. For her many contributions, she has received a number of honours, including the 2012 Queen Elizabeth II Diamond Jubilee Medal and the 2009 Roger's Woman of the Year – Professional Category.

Zaki Ghavitian
Self-Employed



Mr. Zaki Ghavitian represented 290,000 engineers during his time serving as President of Engineers Canada. While there, he served on the Executive, Finance, National Campaign Synergy, Communications and International Committees, and the CEAB. He was also a member of the Order of Engineers of Quebec and, on behalf of that organization, he chaired a committee that provided 19 recommendations for the Charbonneau Commission. Under his leadership, when he was previously Director of Project Management and Chief of Cost Control at Hydro Quebec, multiple billion-dollar projects were realized at both national and international levels.

Marilyn Gladu, M.P.
Government of Canada



Marilyn Gladu spent over twenty years as a leader in research and development in the petrochemical industry before entering politics. From over three decades of leadership in the engineering world to her new role as the first female engineer to be elected as a Member of Parliament, she has been an extraordinary role model for women in engineering. As “Canada’s Most Collegial MP,” and through her role as Vice-Chair of the House of Commons Standing Committee on Health, she continues to demonstrate the role that an engineer can have in improving the lives of all Canadians.

Derrick Green
Green Imaging Technologies



Derrick Green is an internationally recognized leader in nuclear magnetic resonance (NMR) technology. He and his wife, Jill, have transformed a technology developed in Fredericton, New Brunswick into an international company, Green Imaging Technologies (GIT), providing NMR-based core analysis support to the international petroleum industry. GIT is the quintessential example of a Canadian success story in high technology, clearly demonstrating how engineering contributes to economic growth, and Derrick has provided the technical foundation of this success.

Jill Green
Green Imaging Technologies



Jill Green is an internationally recognized entrepreneur and leader in the nuclear magnetic resonance (NMR) industry. She and her husband, Derrick, have transformed a technology developed in Fredericton, New Brunswick into an international company, Green Imaging Technologies (GIT), providing NMR-based core analysis support to the international petroleum industry. GIT is the quintessential example of a Canadian success story in high technology, clearly demonstrating how engineering contributes to economic growth, and Jill has provided the entrepreneurial foundation of this success.

Louise Grondin
Mines Agnico Eagle Ltée



Louise Grondin has led the design and implementation of a management system that integrates environmental sustainability, health and safety, and social acceptance considerations for the global mining and processing operations of Agnico Eagle. She is a founding member of “Women in Science and Engineering” and continues to reach out to young Canadians to inspire them to pursue careers in engineering and science. Women in Mining International recognized her as one of the 100 Most Inspiring Women in the Mining Industry (2013) and as a Trail Blazer (2016), and she received the Rick W. Firlotte Career Award at the Symposium on Mines and the Environment in 2015.

Charles Haynes
University of British Columbia



Charles Haynes is an internationally recognized authority on downstream processing of biologic therapeutics at manufacturing scales. His field-defining research has included the invention of numerous technologies that have gained widespread industrial use, including the Fractogel® chromatography media, now used in the manufacturing of over 20 life-saving FDA-approved protein therapeutics. His appointment as a Tier-1 Canada Research Chair in 2000 has further enabled his outstanding mentoring of academic and industry leaders in his field, and his role as Founding Director of UBC’s Bio-Products Institute is providing crucial innovations and technologies needed to grow Canada’s emerging bio-based products industries.

Josephine Hill
University of Calgary



Josephine Hill is an international leader in catalysis and advancing the sustainability of chemical reactions. Her work has contributed to the development of solid-oxide fuel cells, and the use of carbon-based adsorbents for water treatment. This work was rewarded with a Canada Research Chair in Hydrogen and Catalysis. She has been a transformational leader through her activities with Women in Science and Engineering and the Cybermentor Program at the University of Calgary in supporting and encouraging women to pursue careers in engineering. In 2007, she was recognized as a Mentor of the Millennium by the Alberta Women's Science Network.

Richard Holt
Queen's University



Richard Holt is recognized worldwide for his contributions to the understanding of the mechanisms of radiation damage and deformation in nuclear materials, contributing significantly to the safe and efficient operation of both CANDU and light water reactors. After a distinguished industrial career, he conceived and developed the program of the NSERC-UNENE IRC in Nuclear Materials at Queen's University where he has developed the Reactor Materials Testing Laboratory (RMTL) – a unique reactor simulation facility for the study of radiation damage. His work has been recognized by prestigious awards from the American Society of Testing Materials.

Shaffiq Jaffer
TOTAL SA



Shaffiq Jaffer is a practicing chemical engineer at TOTAL SA. He joined TOTAL SA after working with Koch Industries and Procter & Gamble where he developed novel patented mixing and reaction technology and process designs to enable mass customization of consumer products. At TOTAL, he is a leader in pushing research forward on the de-carbonization of energy and carbon capture, usage and storage. Largely through collaborator agreements and funding initiatives with universities, he has led the efforts to ensure that TOTAL minimizes its operational impact on the environment.

Farrokh Janabi-Sharifi
Ryerson University



Farrokh Janabi-Sharifi, a Fellow of CSME and EIC, is a world-leading expert in optomechanics for robotic applications and has made significant contributions to vision-based learning/control of robots. He has published more than 200 peer-reviewed papers, two books, and four proceedings; a few of which are top-cited worldwide. He has served as a Technical Editor of six international journals and as Chair/Co-Chair in 25 international conferences. He has also played pioneering roles in academia, including developing undergraduate and graduate curricula at Ryerson University, and in professional societies, such as being a founding member of International Society of Optomechanics.

Kenneth Robert Johnson
Stantec Consulting



Ken Johnson has made outstanding contributions to advancing engineering practice, with a special focus on innovative and practical approaches to wastewater treatment in Northern Canadian communities. His work is widely recognized not only for its technical quality and cost-effectiveness, but also its inclusiveness of local and indigenous expectations. His leadership has positively impacted the lives of people and communities throughout Canada's North, achieving these advances through creative, collaborative, and highly professional work. His strategic and measured approaches have found wide acclaim, exemplified by a steady series of commissions and assignments starting in the 1980's, culminating in the development of guidelines for the Territorial governments and communities.

Fakhreddine Karray
University of Waterloo



Fakhreddine Karray is recognized for his outstanding contributions in the area of intelligent systems, computational intelligence and pattern recognition. He has brought novel methodological approaches, efficient algorithms and innovative solutions to a number of real world problems in the area of intelligent transportation, human machine interaction and intelligent robotics. He has been a tireless contributor and leader in the profession, at both the academic and entrepreneurial level. He is widely regarded among his peers in the intelligent systems and computational intelligence communities as a top-notch educator, research and innovator. He has been invited on numerous occasions to give keynote lectures and plenary speeches at major technical meetings.

Ali Khademhosseini
University of California - Los Angeles



Ali Khademhosseini is a Professor of Radiology and Bioengineering at UCLA. He has made seminal contributions to the development of micro/nanoscale technologies, materials and systems for tissue engineering and regenerative medicine. He has led the development of approaches for device tissue interfaces, engineering basic living units for regenerative medicine, understanding self-assembly methods of microscale hydrogel structures which are high impact developments that will enable advances in treatment of patients. He has also made important contributions to the development of bioinspired materials for surgical applications and has trained numerous next generation scientists and has inspired students for graduate work.

Suzanne Kresta
University of Saskatchewan



Suzanne Kresta has contributed to the field of mixing research, at a national and international level, through her contributions to academic and industrial literature through a well-recognized handbook and an important contribution to the engineering literature. Her leadership has been demonstrated through many academic leadership appointments, industrial consulting and serving in engineering accreditation and regulatory bodies. Dr. Kresta is widely recognized for her passion for engineering education pedagogy and has received many awards for her contributions to improving the student learning experience. She is a Fellow of the American Institute of Chemical Engineers (2016) and Engineers Canada (2014).

Frank Kschischang
University of Toronto



Frank Kschischang is an outstanding research engineer and educator whose highly influential work on error-correcting codes significantly shaped the development of algebraic coding theory and iterative decoding methods. His theoretical contributions on the sum-product algorithm laid the foundation of the modern theory of codes on graphs. His work on network coding and fibre optic channel revealed the fundamental limits of information transmission in communication networks and significantly advanced the state-of-art in the theory and practice of digital communications. Frank Kschischang has been extremely active in leadership positions in several well-established engineering societies and conferences.

Catherine Lacavera
Google Inc.



Catherine Lacavera is globally recognized as a leader in the field of intellectual property law. As Director of the IP and litigation for Google Inc., she has led a team of lawyers in successfully defending more than 1,000 patents and other intellectual property claims, globally. She has contributed to shaping and advancing intellectual property law around the world to keep pace with the ever-evolving world of technology. Ms. Lacavera's work has affirmed the legality, and ensured the continued availability, of a free and open Internet, user-generated content platforms, content streaming, and many other innovative technologies developed by Google and its partners.

Ray LaPierre
McMaster University



Ray LaPierre has demonstrated excellent technical leadership in complex engineering and applied science projects in the telecommunications and optoelectronics industries over many years. Recognized for wavelength division multiplexing development at world-leading JDS Uniphase, Ray LaPierre's R&D has greatly benefited the telecom industry in Canada. As an international leader developing nanowire technology, and the first to implement it in solar electric devices, he has founded two start-up companies to develop nanowire optoelectronics. His semiconductor nanotechnology research for next generation optoelectronics will produce more efficient solar photovoltaic devices. He is also leading efforts to increase engineering enrollment and experiential learning at the university and high school levels.

Réal Laporte
Hydro-Québec



Réal Laporte has been a key player in major infrastructure projects, which require specialized skills, a strong focus, and a willingness to innovate in many aspects. He has demonstrated environmental and social awareness, technical expertise and openness to achieve cutting-edge development in engineering and a long-term vision of the society impacted by the project. He has worked with local communities and helped maintain and develop the ecosystems around the infrastructure projects, and incorporated social and environmental criteria into the project design. As President of Hydro-Québec's Innovation, Equipment and Shared Services division, he has been responsible for the development and building of large power plants, and connecting them to the Hydro-Québec grid; a portfolio close to \$15 billion. He has successfully met these challenges while honouring the engineering community.

David Lapp
Engineers Canada



David Lapp's contributions surpass what would normally be considered a successful career, and have had a substantial impact. His exemplary achievements include a recent invitation to join the federal government's new Expert Panel on Climate Change Adaptation and Resilience Results, his induction as a Fellow of Engineers Canada (a designation honouring leadership and noteworthy service to the profession), his position as an Advisory Committee member for the Natural Resources Canada (NRCan)-led National Assessment Project - Canada in a Changing Climate: Advancing our Knowledge for Action, and his position as Co-Chair of the NRCan Infrastructure and Buildings Working Group, alongside the Institute for Catastrophic Loss Reduction.

Joseph Liburdi
Liburdi Turbine Services



Joseph Liburdi has provided engineering leadership in developing new technologies and patents for welding, welding alternatives, material deposition, hard coatings and foundational technologies for additive manufacturing, including the world's first fully automated system for repair of turbine blades. The Liburdi companies impact Canada's competitiveness through employment and exports with global sales of \$75 million and facilities in Canada, U.S., China, the Netherlands and a joint venture with UAE. Mr. Liburdi is a member of the Advisory Boards of both the Dean of Engineering and the Manufacturing Research Institute at McMaster University.

Yan-Fei Liu
Queen's University



Professor Yan-Fei Liu has advanced power electronics technology through a number of simple, practical innovations in digital control, driver technologies, high efficiency resonant switching, and modeling of current-programmed control. He has collaborated with many global companies, such as the GE Global Research Centre and Huawei, has been the principal contributor to three IEEE standards, and holds 25 US patents. Dr. Liu co-founded Potentia Semiconductor, a firm which developed power management integrated circuits, and whose products are used widely in LCD, LED and plasma TVs and monitors. Potentia was acquired by NASDAQ-listed Power Integration in 2008. Dr. Liu is a Fellow of the IEEE.

Zheng-Hong Lu
University of Toronto



Zheng-Hong Lu is the Canada Research Chair in Optoelectrical Engineering at the University of Toronto. Dr. Lu has conducted pioneering research on organic light-emitting diodes (OLEDs), resulting in the next-generation OLEDs which are far more energy-efficient and cost-effective to manufacture than their predecessors. Dr. Lu is Co-Founder of two spin-off companies, OTI Luminonics and Norel Optronics, and works with the major companies in the display and lighting sectors to commercialize the technology developed in the lab. He provides technology consulting to Huawei Canada, Lakeside Optoelectronics, and Alivision LLC, and is a member of the Scientific Advisory Board of Lumentra Inc.

Ian MacGregor
North West Refining Inc.



Ian MacGregor is a transformative engineer, investor and entrepreneur whose work has led to the founding, development and growth of several innovative Canadian-based energy companies and businesses. His current project, the Sturgeon Refinery, is one of the most technologically advanced, and is the first greenfield refinery in Canada since 1984. The 80,000 barrels/day refinery incorporates CO2 capture and storage, allowing the company to produce ultra-low sulphur diesel with the lowest carbon footprints of any petroleum-based fuel. Ian continually promotes engineering by founding and supporting the Canadian Museum of Making, an internationally recognized museum that has a world-class collection of industrial revolution machinery and African metal work.

Wayne J. Maddever
Bioindustrial Innovation Canada



Dr. Wayne Maddever has held executive positions in private and public companies spanning a broad range of industries, and has provided exceptional engineering leadership in research and development, production operations, and in executing complex engineering projects. He has been the driving force behind the growth and development of domestic and international, technology-based companies for the processing of advanced materials, precision manufacturing, medical devices, recycling, and waste into energy. His creative activities are exemplified by patents, conference presentations, publications and awards. He has also given exemplary service as a lecturer and student mentor in areas related to entrepreneurship and innovation.

M.G. Venkatesh Mannar, O.C.
Nutrition Impact Solutions Inc.



M.G. Venkatesh Mannar has provided cost-effective solutions to one of the world's most important health challenges: micronutrient deficiencies. He is the co-inventor of Double Fortified Salt, which is used to address both iron and iodine deficiencies. As President of the Micronutrient Initiative (MI) for 20 years, he grew MI from 4 employees to a global organization with more than 150 staff, offices in 11 countries, and programs that reach 500 million people in 75 countries. His efforts have resulted in millions of people worldwide gaining access to essential micronutrients. He has been inducted into the Order of Ontario and the Order of Canada.

Audrey Mascarenhas
Questor Technology Inc.



As President and CEO of Questor Technology, Audrey Mascarenhas is a transformational engineering leader, whose innovative can-do approach has led to the creation of leading-edge clean air environmental technology for the energy sector. She is a passionate supporter of values-based engineering and corporate decision making, and dedicated to giving back to her local and global community. Her contributions have been acknowledged by the 2011 Ernst & Young Entrepreneur of the Year Prairies Award for Cleantech and Environmental Services, and the Business in Calgary 2014 Leader of Tomorrow award.

James (Jim) Nicell
McGill University



Professor James Nicell is an internationally-recognized scholar, known for his research into environmental applications of enzymes, assessment of the fate and impacts of pharmaceutically-active compounds, green plasticizer development, and odour impact assessment. He has published about 80 articles in top journals that have over 5,000 citations with an h-index of 42. He has received numerous awards for teaching, research and professional contributions and, currently, as Dean of Engineering, leads a Faculty with 160 professors, 3,500 undergraduate and 1,200 graduate students.

Angela Pappin
ArcelorMittal Dofasco



Angela Pappin has provided leadership in developing advanced steel technology for ArcelorMittal in North America through both market and product development. She provided expertise in engineering, energy management, manufacturing and corporate strategy, while leading a 500-member technology and quality team that services all nine business units across the company. She has chaired important international committees for metallurgical R&D and those advocating for girls and women in STEM careers. She is a member of the YWCA Equitable Pathways to Technical Fields and Skilled Trades Committee, and the Canadian Manufacturers and Exporters Women in Manufacturing Working Group.

Michael Pley
Pley Consulting Inc.



Michael Pley is a recognized aerospace and space leader serving on Canada's Space Advisory Board which provides advice to the Minister of Innovation, Science and Economic Development on space issues. For over 15 years, he was the CEO and an executive leader of COM DEV, Canada's leading space hardware manufacturer supplying equipment to 900 spacecraft, including 80% of all commercial communication satellites launched and the soon-to-be-launched iconic James Webb Space Telescope. He has been on the Dean's Advisory Board of the Faculty of Engineering of McMaster University since 2002 and its Chair since 2016, contributing and supporting engineering education at his alma mater.

Yihong Qi
General Test Systems Canada Inc.



Dr. Yihong Qi is a visionary leader with significant industrial and societal contributions, having successfully merged fundamental research breakthroughs in electromagnetics with applications to wireless communications. With more than 250 patents, he was the hardware technology driving-force for the success of BlackBerry. He is the founder and partner of four technology companies, employing more than 4,000 people globally. He has mentored scores of post-graduate students, younger researchers, managers and executives. His technical and business contributions have been recognized with IEEE technical achievement awards and the Pearl Delta top 10 entrepreneur award.

Joy Romero
Canadian Natural Resources Limited



With a career spanning more than 35 years, Joy Romero has played a critical role in advancing the responsible and sustainable development of Canada's world-class hydrocarbon resources. Joy began her professional career at Wabush Mines in Labrador, then took on strategic leadership roles at TECK, SNC-Lavalin, and with CNRL, where she currently serves as VP – Technology and Innovation. Joy's passion for collaborative innovation and dedication to her community extends beyond the borders of her role at CNRL, dedicating her time and expertise to other innovative organizations, including the Athabasca University Governing Council, COSIA, PTAC, CONRAD, Wavefront, and Kinetica.

David Ross
Ross Video



David Ross is one of the most successful business and technology leaders in the history of the National Capital region. He has achieved international recognition for his contributions to the research, design, production, and commercialization of innovative solutions for the video production industry. Under his leadership, Ross Video has rapidly commercialized its various technologies in more than 140 countries and the International Space Station. David Ross has been recognized by prestigious awards: Best Business, CEO of the Year; Exporter of the Year (Ottawa Chamber of Commerce); Technology & Engineering Award (Emmy®); Outstanding Technological Achievement (Gemini Awards); and Canadian Innovation Leader (NRC).

Harry Ruda
University of Toronto



Professor Harry Ruda (Stanley Meek Chair in Nanotechnology, FRSC, FIET, FInstP, FIMMM) is one of the world's leading nanotechnologists, with a uniquely innovative and creative approach to science. He is recognized as an international leader in the synthesis, characterization and engineering of semiconductor nanostructures, with seminal contributions as early as the 1980s. Highlights include a first theory for electron transport in low dimensional heterostructures, a new approach for the fabrication of semiconductor nanowires, original contributions to understanding surface states in semiconductors, and a first report of ballistic transport in nanowires. These contributions are represented in 280 articles in leading journals, nine books, 15 patents, and more than 6,600 citations with an h-index of 40.

Susan Tighe
University of Waterloo



Dr. Susan Tighe leads one of the most productive pavement infrastructure research programs in Canada, and led development of the 2013 Transportation Association of Canada Pavement Asset Design and Management Guide, the leading pavement document in Canada. Her pioneering contributions to pavement engineering have been recognized with national and international honours, and profoundly advanced the understanding and implementation of resilient, high performance, and sustainable pavements for Canadian roads and airfields. She has broken new ground in the design of long-life asphalt pavements and the evaluation of recycled materials for usable, low-cost concrete, leading to the first usage of recycled concrete aggregate pavements, as well as protocols for precast concrete panels now used in highway rehabilitation. Her innovations have been implemented across Canada and the globe.

Haijiang Wang

Southern University of Science and Technology



Dr. Haijiang Wang has over 30 years of practice in electrochemical engineering in prominent positions as a Senior Research Scientist at Ballard Power Systems, a Principal Research Officer at the NRC, and now, as Chair Professor at the Southern University of Science and Technology. He has made substantive contributions to the advancement and commercialization of modern fuel cell technology through his industrial, government, and academic work, and has been recognized by his peers as a world-renowned fuel cell expert. Through his efforts, Dr. Wang has helped to keep Canada a world-leader in fuel cells. With over 200 publications and 15,500 citations, an h-index of 52, and the co-founding of two fuel cell companies, Dr. Wang clearly has made exceptional contributions to the field.

Xianbin Wang

University of Western Ontario



Professor Xianbin Wang, Canada Research Chair (CRC) and IEEE Fellow, is internationally recognized for his pioneering contributions to Orthogonal Frequency Division Multiplexing (OFDM) and for his world-leading innovations in improving efficiency and security of wireless communications. As a passionate inventor, he holds 26 granted and pending patents, with over 20 of them as the first or sole inventor. His inventions have extensive technical scope, dealing with the most critical and complex issues in wireless communications, communications security, and localization technologies. Many of his patents, ideas and original designs have been adopted by his former industry employer and current industry collaborators, and five of his patents have found application in telecom chipsets. His achievements and contributions have been recognized by a CRC President's Excellence Award, Canadian Federal Government Public Service Award, Ontario Early Researcher Award, IEEE Distinguished Lectureship, and six IEEE Best Paper Awards.

Zhen (Jane) Wang
University of British Columbia



Zhen (Jane) Wang is an internationally renowned researcher in statistical signal processing theory and its applications. Her work covers a broad research spectrum that is multidisciplinary in nature. She has invented powerful methodologies for a wide range of real-life problems, especially for anti-collusion digital media fingerprinting, brain connectivity network inference, and deep learning-based medical image analytics. A key component of Dr. Wang's success has been her ability to forge important multidisciplinary collaborations, particularly with medical researchers, through which she delivered significant research contributions with knowledge translation to clinics. Her landmark and pioneering contributions in the areas of multimedia security and neurological data analytics have been acknowledged with international awards. She is a Fellow of IEEE and a member of RSC's College of New Scholars, Artists and Scientists.

Mary Wells
University of Guelph



Dr. Mary Wells has extensively contributed to the science and engineering of materials processing, leading to improved understanding of the heat transfer and microstructure of metals. She has driven the development and validation of mathematical models, probed fundamental phenomena associated with heat transfer and microstructure evolution, and led design changes required to improve process/product quality. In 2015, she became the President of the Metallurgy and Materials Society of the Canadian Institute of Mining, Metallurgy and Petroleum (CIM). Dr. Wells has also been an outstanding leader and role model in engaging and supporting women in engineering through her roles as Professor, Associate Dean, Dean, and Chair of the Ontario Network of Women in Engineering. Her leadership has contributed to an increase in the number of women in engineering in Ontario, and she has developed models of engagement that are offered nationally.

Helen Wojcinski
Wojcinski & Associates Ltd.



Helen Wojcinski has made contributions that surpass, in depth and breadth, what would normally be considered a successful career. Her contributions have had a substantial impact and have been recognized by many independent indicators of exemplary achievements, including Province of Ontario Women's Directorate Leading Women, Building Communities Award; University of Toronto Faculty of Applied Science & Engineering 2T5 Mid-Career Achievement Award; Ontario Volunteer Service Awards; Fellow of Engineers Canada; University of Toronto Arbor Award; and the Ontario Professional Engineers Citizenship Award. As a highway infrastructure engineer, she managed many complex multi-million-dollar projects and, as Manager of Design of the OTCC, earned national and international recognition as a member of the public-private consortium for the Highway 407 Express Toll Route.

Paul Wynnyk
Canadian Armed Forces



Lieutenant-general Paul Wynnyk serves as Commander of the Canadian Army. In doing so, he has shown exemplary leadership and commitment representing Canada by leading or overseeing military missions in the Balkans, Africa, South East Asia, Afghanistan and Eastern Europe, while earning the respect and accolades of Canadian allies and the troops under his command. He is an impressive role model for all engineers, not only those serving in the military, and is a wonderful public example of the value of engineers and engineering within the Canadian military.

Jun Yang
University of Western Ontario



Dr. Jun Yang is a Professor in Mechanical, Materials and Biomedical Engineering, and Director of WIN 4.0 (Western's Industry 4.0 Network) at the University of Western Ontario. He is a world-leading expert in micro/nano-engineering, printed electronics and additive manufacturing, and has made numerous significant and original contributions. Dr. Yang has a remarkable entrepreneurial track record. He holds 10 granted and 16 pending patents, three licenses, and has founded a successful start-up company. His microlens fabrication technology was adopted by an industrial partner and has since been used in 2 billion CMOS image sensors. His licensed membrane technology has led to products that have been delivered to more than 100 institutes, organizations, and companies globally. Dr. Yang has published 120 journal papers, including multiple cover articles, and has trained more than 80 post-doctoral fellows and graduate students.

Siyu Ye
Ballard Power Systems Inc.



Dr. Siyu Ye is a Principal Scientist at Ballard Power Systems, a leading global fuel cell company, where he leads Ballard's Advanced Catalyst Development project. He is recognized as a world-leading expert in electrocatalysis and catalyst layer/MEA design for fuel cells, and has made significant contributions to the advancement of the modern PEM fuel cell. His outstanding leadership and technical expertise were instrumental in the development of cell reversal tolerant catalysts and carbon corrosion resistant cathode catalyst layers, which have both been key technologies in securing Ballard's long-term leadership in these critical areas. His designs are utilized by both Ballard and many external customers (e.g. Daimler, Ford, and VW/Audi). A prolific inventor and researcher, Dr. Ye holds over 50 patents/patent applications and has published over 100 peer-reviewed papers.

John Tze-Wei Yeow
University of Waterloo



Dr. John Yeow is widely recognized for his pioneering contributions to the fields of microsystems and nanodevices research, particularly as they apply to medical and therapeutic instruments. His work has had a broad and seminal impact - from discovery to industrial innovation. He was the first to develop a 3-dimensional (3D) micromachine-based optical coherent tomographic (OCT) imaging system that acquired the world's first 3D-OCT images of the central nervous system of a fruit fly. This technology enabled the realization of a highly miniaturized catheter for early cancer diagnosis in human cavities that were too small to access. He is an international leader and educator in the development of nanotechnology-based multi-modality imaging systems involving X-ray, optical and ultrasound imaging technologies, and has been widely recognized by the scientific community by winning numerous awards, including the Professional Engineers Ontario Excellence Award, Micralyne Microsystems Design Award, the NSERC Innovation Challenge Award, and the Douglas R. Colton Medal for Research Excellence.

International Fellows / Fellows Internationaux

Chunli Bai

The Chinese Academy of Sciences



Professor Chunli Bai has made innovative and sustained contributions to nanomaterials over three decades. He pioneered China's nanotechnology effort, both as leading scientist and as policy-maker. He has published more than 350 journal papers, and 12 monographs and book chapters. He has been elected as a member of 15 major academies of science or engineering worldwide, and has received over 20 prestigious awards and prizes, including the first UNESCO medal "for contributions to the development of nanoscience and nanotechnology". He was instrumental in facilitating and consolidating long-lasting collaborations between China and Canada.

Gururaj Deshpande
Sparta Group LLC



Dr. Gururaj (Desh) Deshpande, educated at UNB and Queens, has combined his engineering expertise and financial skills to start and take over public multibillion-dollar companies (Cascade Communications, Sycamore Networks), and has co-founded and/or influenced the direction of at least seven more in the U.S. communications and technology sector. Through the Deshpande Foundation, he and his wife, Jaishree, have established university-based centres in Canada, the United States and India to encourage the use of entrepreneurship and innovation as catalysts for sustainable change. His expertise and advice has been sought by Presidents and Prime Ministers, and he continues to serve a global community through influencing a powerful combination of commercial and social entrepreneurship initiatives.