Media Release

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

Ottawa – (26 June 2017) – President Douglas Ruth inducted 50 new Fellows and two new International Fellows into the Canadian Academy of Engineering on 26 June 2017. The ceremony took place in Ottawa, in conjunction with the Academy's 2017 Annual General Meeting and Symposium. Dr. Ruth commented: "We welcome the new Fellows, who are all engineers of outstanding abilities. While they have widely varying backgrounds, what they all have in common is the demonstrated 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 our past, Fellows of the Academy have produced major studies in the fields of education, energy and innovation; we look forward as to how these new Fellows will explore new and exciting areas of engineering and their 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 honorary 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:
Kevin Goheen, Ph.D., P.Eng.
Executive Director
Tel: (613) 235-4836
E-mail: kgoheen@cae-acg.ca

NEW FELLOWS 2017

Perry Adebar, Professor and Head, Civil Engineering, University of British Columbia

Professor Perry Adebar has made important contributions to the profession and practice of engineering in Canada. An award winning educator, he is known for presenting a strong connection between theory and engineering practice, and his views are highly respected by industry. He is Head of UBC Civil Engineering, and was previously Associate Dean of Applied Science at UBC. His research has had direct impact on the seismic design of high-rise concrete buildings in Canada. Dr. Adebar has provided engineering advice to consulting engineering firms, is a director of the Structural Engineers of BC, and a member of Canada TF-1 HUSAR Team.

Robert Andrews, Professor, Civil Engineering, University of Toronto

Professor Robert Andrews holds an NSERC Industrial Research Chair at the University of Toronto, where he founded the Drinking Water Research Group. His collaborations with municipalities as research partners have allowed him to solve real-world problems that have a direct impact on the safety of Canada's drinking water supply. An expert in drinking water treatment, Professor Andrews is a member of several decision-making committees and advisory councils in Canada and the United States. His work has been recognized with prestigious awards from the Engineering Institute of Canada, the Canadian Society for Civil Engineering, and the American Water Works Association, among others.

Michel Bruneau, Professor, University at Buffalo

Michel Bruneau is recognized, nationally and internationally, for the impact of his innovative research contributions to the design of steel structures subjected to earthquakes and blasts, and for his significant contributions to design codes and standards. He has authored over 500 technical publications and is one of the most cited researchers in structural engineering. His work has defined disaster resilience in a manner that has since driven research in this field, and he is lead author of a textbook that is the reference for the seismic design of steel structures. He led the development of the world's most versatile earthquake engineering testing facility.

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Christine Chan, Professor and Canada Research Chair, University of Regina

Christine Chan, Professor and Canada Research Chair (Tier 1) in Energy and Environmental Informatics, of University of Regina, has made major contributions to the education of engineers and research in Information Technology and Applied Artificial Intelligence. She is an international researcher who has done pioneering work in engineering applications of artificial intelligence. She generously contributed her expertise to public, funding, and research organizations. She is also a dedicated teacher who has taught and supervised over 100 HQP, including many Bachelors, Masters and Doctoral students, who have continued to build successful careers in the information technology industry in Canada and abroad.

Sanjeev Chandra, Professor, University of Toronto

Sanjeev Chandra is co-founder of the University of Toronto's Centre for Coating Technologies, one of the leading research centres in the world in the area of thermal spray coatings. He has collaborated with research groups and industrial partners around the world in the development of cutting-edge technology in this area. His work has been applied in the fields of spray coating and forming, spray cooling, ink jet printing, agricultural spraying and forensic science. Dr. Chandra is a Fellow of the American Association for the Advancement of Science and the American Society of Mechanical Engineers, and a recipient of the NSERC Brockhouse Prize for Interdisciplinary Research.

Tom Chau, Vice-President, Research, Holland Bloorview Kids Rehabilitation Hospital

Through his research at the Holland Bloorview Kids Rehabilitation Hospital and the University of Toronto, Dr. Tom Chau has developed assistive technologies which give children and youth with severe physical limitations the ability to communicate independently. Chau also created the award-winning Virtual Music Instrument, which allows individuals with disabilities to express themselves through music. Additionally, he has pioneered optical brain-computer interfaces which allow nonverbal individuals to communicate through thought alone. Dr. Chau is a Fellow of the American Institute for Medical & Biological Engineering and the recipient of several international awards. In 2011 he was named one of 25 Transformational Canadians by the Globe and Mail.

NEW FELLOWS 2017

Daolun Chen, Professor, Ryerson University

Dr. Daolun Chen is a world-leading expert in materials with 258 publications in prestigious journals. His pioneering research has led to improvements in safety and life prediction of lightweight components, enabling reductions in energy consumption and emissions. His groundbreaking work on nanocomposites led to the widely-known method that bears his name and was twice identified by the Council of Canadian Academies to be a top 1% most-highly-cited paper in his field worldwide. He has been recognized with numerous awards, including MetSoc Award for Research Excellence and Distinguished Materials Scientist Award, and invited to serve on editorial boards of 22 journals.

Zhangxing (John) Chen, Professor, University of Calgary

John Chen holds two prestigious Research Chairs: AITF Industrial Chair in Reservoir Engineering and NSERC/AIEES/Foundation CMG Chair in Reservoir Simulation and is an authoritative world leader in petroleum reservoir engineering. He developed the world's first nano-catalytic in situ upgrading technology and parallel dynamical reservoir simulation software that dramatically improve oil and gas recovery, while significantly reducing environmental impacts. He is Co-founder and Chairman of the oil production company RockEast Corp., with $200M in assets. He authored 556 peer-reviewed articles and 15 books and holds 14 patents. He is a dedicated educator and trained 106 successful highly qualified personnel. He has an outstanding record of professional leadership and service.

Zhongwei Chen, Professor and Canada Research Chair, University of Waterloo

Zhongwei Chen has made a number of seminal contributions in materials engineering and electrochemical energy systems, including fuel cells, lithium-ion batteries and zinc-air batteries. His work has been recognized through multiple awards and distinctions in Canada and internationally, including the 2016 E.W.R Steacie Memorial Fellowship, member of the Royal Society of Canada's College of New Scholars, Artists and Scientists, a finalist for the R&D 100's Most Technologically Significant New Products of the Year 2015 Award and others. He has also made distinct engineering contributions by technology application and commercialization, with 16 patents/provisional patents (two licensed to international companies and another three forming the core technology of two Canadian startups with $20M venture funding).

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Mohamed Cheriet, Full Professor, École de technologie supérieure, University of Québec

Professor Cheriet is the foremost researcher and educator in Canada in green ICT and fundamental areas of data processing. He founded two of the largest laboratories at the ÉTS. He is founding member of world-class educational programmes training hundreds of students and fellows in cutting-edge areas. He was the founder and Chairman of the IEEE Montreal CIS Chapter, and awarded many prestigious honours, including the 2016 IEEE Canada J.M. Ham Oustanding Engineering Educator Award, the ÉTS Research Excellence prize, and the 2012 Queen Elizabeth Diamond Jubilee Medal for outstanding contribution in data processing. He created and chaired several international flagship conferences. He is an IAPR Fellow.

Thomas Chong, Project Lead, Ontario Ministry of Health

Thomas Chong is the 2015-16 President of Professional Engineers Ontario. He has been actively involved in the leadership of the Ontario engineering profession as a member of the PEO Council since 2006, progressing to the level of Vice-President and President. He also provided leadership as a PEO York Chapter executive before joining PEO Council. He developed a “Virtual Mentoring” program via IT technology in the engineering departments at his employer, the Ontario Government, that enhanced the self-confidence and self-esteem of under-represented groups including women to achieve their full potential. His leadership capability was recognized by his peers who elected him to be President of PEO. He is also a role model for young Chinese-Canadian engineers.

Claude Daley, Professor, Memorial University of Newfoundland

Dr. Claude Daley is a Professor of Ocean and Naval Architectural Engineering at Memorial University. He is a graduate of the University of Western Ontario, Princeton University and Helsinki University of Technology. He specializes in arctic offshore engineering with a special focus on the structural design of ice going ships. He is one of the world’s leading specialist in this branch of engineering, and has represented Canada in many international initiatives, groups and research programs, including those of the International Association of Classification Societies and the International Maritime Organization. He is currently conducting research with sponsors and colleagues from Asia, the Americas, Europe and Africa.

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John (Jay) Doering, Associate Vice-President (Partnerships) University of Manitoba

Dr. Jay Doering is a licensed professional engineer and a professor of Civil Engineering at the University of Manitoba with expertise in water resources engineering. His research, graduate teaching, and graduate student training have focused on three areas of experimental research: 1) coastal processes (hydraulics); 2) physical hydraulic models; and 3) frazil ice processes in cold freshwater environments. He is often called upon by the media as the top expert in his field, having given numerous flood infrastructure and flood forecasting interviews over the past 20+ years. Following the devastating 1997 Red River flood, he was the first member appointed by then Premier Gary Doer to the Technical Advisory Committee of the Manitoba Floodway Expansion Authority (MFEA) as well as the Advisory Board of the MFEA.

Ruxu Du, Professor, Chinese University of Hong Kong

Professor Ruxu Du is internationally-renowned for his contributions in mechanical engineering. His inventions have progressed the development of key technologies in this field, especially in metal forming and precision engineering, and the establishment of two mid-size companies, leading directly to global economic growth. He has published over 400 papers as well as over 100 patents, and supervised more than 130 graduate students and research associates, many of whom are now leaders in their institutions and/or companies. Professor Du is a Fellow of the Society of Manufacturing Engineers, Fellow of the America Society of Mechanical Engineers, and Fellow of the Hong Kong Institute of Engineers.

Masoud Farzaneh, Professor, University of Quebec in Chicoutimi

Professor Farzaneh has made outstanding contributions to the field of power network engineering in cold climate regions including design and coordination of outdoor insulators, arc development on ice surfaces and air intervals, thermal deicing techniques and icephobic coatings, and corona induced vibration of power line conductors under wet conditions. His work has been commercialized worldwide. He is a Fellow of the IEEE and the EIC and received prestigious awards from OIQ and NSERC.

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Mark Hundert, National Director (Retired), Hay Group Health Care Consulting

Mark Hundert is a pioneer in the application of industrial engineering and operations research practices in order to improve the delivery of health care in Canada. He has helped to introduce principles and methodologies to improve the efficiency and effectiveness of our hospitals and other health care organizations. Among his many contributions in this field, Mr. Hundert spearheaded the development of a national database benchmarking the efficiency and quality of care in Canadian hospitals, which has been an essential tool in identifying and addressing areas needing improvement in the Canadian health care system. He received the Ontario Professional Engineers Management Medal in 2008.

Christopher Kennedy, Professor and Chair, Civil Engineering, University of Victoria

Professor Chris Kennedy is the founding Chair of the Department of Civil Engineering at the University of Victoria. He has produced highly cited research on sustainable infrastructure and cities, and consulted for several national governments, the UN and the World Bank. In 2011, he was seconded to the OECD in Paris, serving the Working Party on Climate Investment and Development. He has been a visiting professor at Oxford University and ETH Zürich. He has been President of the International Society for Industrial Ecology, and is author of The Evolution of Great World Cities: Urban Wealth and Economic Growth.

Denis Laurendeau, Professor, Laval University

Professor Denis Laurendeau is widely known for his pioneering research in 3D sensing and modelling. He has provided key contributions, both fundamental and applicative, to an emerging meta-discipline that combines reality and virtuality through sensing, modelling, simulation and machine intelligence, such as in robotics or biomedecine. His research, always conducted in a collaborative spirit, has provided an outstanding intellectual and experimental environment for a large group of young researchers, many of whom have become leaders in their own endeavours or created new companies that have now achieved world class level.

NEW FELLOWS 2017

Marcel LeBrun, Technical and Social Entrepreneur

Best known for his leadership roles in Canada's information technology sector, Marcel LeBrun is an inspiring example of what entrepreneurial engineering graduates can achieve when they initiate opportunities for themselves and others. He has played a leading and very successful role in bringing innovative communications, television, and social media market analysis software to industrial and mass market customers world-wide. Despite his many commitments and very busy schedule, he has made the time to act as an educator and mentor to university engineering students interested in starting their own companies, and supports worthy programs for New Brunswick youth through his own charitable foundation.

Xianguo Li, Professor University of Waterloo

Dr. Xianguo Li is a world-renowned leader in the fields of clean energy research. A professor in the Department of Mechanical and Mechatronics Engineering, and University Research Chair Professor, at the University of Waterloo, he has made outstanding contributions to his research field of clean energy, including fuel cells, liquid atomization and sprays, and low-emission combustion engines; and to engineering and society through his extensive research publications, activities and professional services, the development of clean energy technologies through technology transfer to industry and spin-off companies, leadership in professional associations, and the training of highly qualified personnel. He is the principal researcher for the $26M "Green Auto Power Train" project.

Choon (Jim) Lim, Professor, University of British Columbia

Jim Lim has made major contributions to the practice, teaching and advancement of chemical engineering. He has shown unique skills in devising new thermochemical processes for industry and in designing and operating pilot scale units to improve and verify these processes. He has been a key figure in training a generation of chemical engineering students in sound design, process simulation and control, and practical skills needed for successful process operations. He has also been an essential team member in a unique group at UBC showing leadership in multiphase reactors.

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Qingxia Liu, Professor, University of Alberta

Dr. Liu is The Glencore Chair in Mining and Mineral Processing Engineering at the University of Alberta. He is a leading authority on interfacial science and water chemistry in minerals processing and oil sands extraction. Dr. Liu's research continues to stimulate scientific discoveries and develop vital technologies that address the economic and environmental challenges faced by Canadian industry. He brings valuable industry experience into university teaching and research. As clean energy plays an increasingly important role in global development, Dr. Liu's teaching, research, and development of new technology is of vital importance to sustainable development in Alberta and across Canada.

Heather MacLean, Professor, University of Toronto

Professor Heather MacLean is an internationally recognized leader in sustainable systems analysis, including life cycle assessment and its application to energy systems and transportation vehicles. Her research has informed the decisions of industry, government and other organizations and has guided regulations such as California's Low Carbon Fuel Standard. Because she is able to bring together disparate groups such as oil-sands producers and NGO's to collaborate on research studies, her work is often instrumental in securing support from regulators, local communities and other stakeholders. She is an Advisor to the World Bank/World Resources Institute for Sustainable Transportation initiative. Professor MacLean is a fellow of the Engineering Institute of Canada.

Max Meng, Professor and Chairman, The Chinese University of Hong Kong

Professor Meng is an international leader in robotics, best known for proposing the world's first practically-implementable stable adaptive control algorithms for multi-joint industrial robot manipulators, creating the world's first robotic prosthetic eye, developing the most advanced robotic wireless capsule endoscopy with automatic diagnosis for diseases in gastrointestinal tract, and inventing the world's first occlusion-free dynamic multi-camera navigation system for surgical robots. He made impactful contributions to Canadian industry and military sectors through successful collaborative projects and training of highly qualified engineers. His accomplishments have been recognized through prestigious awards, such as the IEEE Third Millennium Medal and Fellow of IEEE.

NEW FELLOWS 2017

James Olson, Associate Dean of Research and Industry, University of British Columbia

Dr. James Olson is a visionary leader, pioneering researcher, and inspiring educator who has made transformative contributions to the forest products sector of engineering. As a direct result of Dr. Olson's innovative research and patented inventions, the pulp and paper industry can produce premium pulp using half the energy, has access to more effective fibre separation and refining processes, and is able to measure key properties of fibres more accurately and efficiently. Dr. Olson's honours include two NSERC Synergy Awards, two NSERC Discovery Accelerator Supplements, an APEGBC Meritorious Achievement Award, the BC Lieutenant Governor's Innovation Award, and nine best papers.

Muthukumaran Packirisamy, Professor, Mechanical Engineering, Concordia University

After an outstanding 10-year career in the aerospace turbine industry. Dr. Packirisamy turned his attention to microsystems and nanobiotechnology. He has established a world class laboratory in this field and is recognized in the community as a pioneer in BioNanotechnology, one of the most important emerging fields of the 21st century. His work in energy harvesting from algae, and micro photosynthetic power cells rank amongst the most cited and downloaded research ever. The traditional measures of his research excellence are very strong and he has also been successful in the commercialization of his research through both patents and valuation increases of his startup companies. He has been honoured previously through Fellowships with the RSC's College of New Scholars, ASME and CSME and the Indian Institute of Engineers.

Marc Parlange, Dean of Applied Science, University of British Columbia

Dr. Marc Parlange is a world-renowned expert in hydrological engineering, a distinguished academic leader and an innovative educator. His research work on atmospheric boundary layer turbulent flow and on evaporation and land-atmosphere interaction has been transformative. He has bridged atmospheric turbulence research with hydrologic predictions through the design of instrumentation, numerical simulation, and field observations to guide watershed and atmospheric boundary layer modeling. As Department Chair at John Hopkins University and as Dean at the École Polytechnique Fédérale de Lausanne, he has been a leader in promoting Environmental Engineering programs. He is a Member of the US National Academy of Engineering.

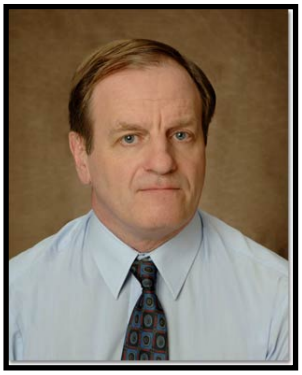
NEW FELLOWS 2017

Scott Phillips, CEO StarFish Holdings Inc.

Scott Phillips has leveraged his industrial experience and education in engineering physics to become Founder and CEO of StarFish Medical, an award winning BC technology company. Starfish is Canada's largest medical device design, development and contract manufacturing company. Starfish helps medical technology innovators throughout North America overcome challenging technology obstacles to creating breakthrough products that improve health and saves lives. The products that they have developed have hundreds of millions of dollars of sales around the world and address many areas of life sciences, including imaging, sample handling and therapeutics. Mr. Phillips has contributed to the community through extensive volunteer work with Junior Achievement, UBC & Life Sciences BC.

Christopher Pickles, Professor, Queen's University

Regarded as Canada's leading authority on microwave heating for metallurgical applications,



Professor Pickles has been a pioneer in the development of microwaves for processing ores, precious metal residues, and waste materials. Other major contributions include the use of extended arc plasma reactors for the treatment of electric furnace dusts and generation of ferro-alloys. A staunch participant for over three decades in the committee affairs of professional organizations, Professor Pickles has presented short courses for industry, mentored close to seventy researchers and published over 170 papers, coedited five conference volumes and coauthored a textbook on Chemical Metallurgy. He is a Fellow of the Canadian Institute of Mining, Metallurgy and Petroleum and has won national awards from this organization.

Andrew Pollard, Professor and Queen's Research Chair, Queen's University

Andrew Pollard is a world leader in many engineering disciplines, including computational and experimental fluid dynamics, heat transfer, biological flows and renewable energy. He is best known for his seminal work on turbulent flows, especially free shear flows, which have provided the fundamental knowledge required to accelerate the field. His service contributions include leading C3.ca Association Inc. to establish a pan-Canadian network of high performance computers and advisors serving thousands. His work on renewable energy has changed provincial environmental policy and his work with ASME has influenced engineering codes. He has served the engineering community through various activities, including Editor-in-Chief of the International Journal of Heat and Fluid Flow.

NEW FELLOWS 2017

Ishwar Puri, Dean of Engineering and Professor, McMaster University

Ishwar Puri is internationally recognized for scholarship in engineering research and education. He is known for contributions to combustion engineering for fire safety, pollutant amelioration and combustor design, and magnetic fluid and particle transport by fabricating devices and materials based on thermomagnetic convection, dynamic self assembly and magnetic inks for 3D printing through over 160 publications and Google Scholar H -index of 37. As an educator, he has written three widely used textbooks and is steward of an engineering program with 175 faculty members, 4,500 students and 900 graduate students. He has taken on leadership roles amongst engineering deans nationally and globally and is a Fellow of ASME and AAAS.

Chris Roney, President, Roney Engineering

Chris Roney is the current President of Engineers Canada, the national organization of the 12 engineering regulators that license Canada's more than 290,000 members of the profession. He recently chaired its Lessons Learned Task Force, preparing recommendations from the outcome of the Charbonneau Commission in Quebec, the Mount Polley Tailings Dam Failure in BC, and the Algo Mall Collapse in Elliot Lake Ontario. Chris is also President of Roney Engineering Limited. He frequently serves as a consultant to municipal Building Departments on building code related structural issues. He has been responsible for the structural design of countless buildings, in addition to numerous structural audits and forensic investigations.

William (Bill) Rosehart, Dean and Professor, Schulich School of Engineering, University of Calgary

Bill is deeply committed to teaching and learning. He has been recognized with two University of Calgary Students' Union Teaching Excellence Awards and has twice been named Professor of the Year in the Department of Electrical and Computer Engineering. Bill has been active with and received awards from the Institute of Electrical and Electronics Engineers and APEGA. Bill's commitment to students is further highlighted through his involvement as a founding member of the Canadian Engineering Association, where he served as the western regional director on their governing board from 2011 to 2013. He recently led the creation of an innovative program in Energy Engineering that allows technology graduates to complete an Engineering degree in only two additional years.

NEW FELLOWS 2017

Mehrdad Saif, Dean, Faculty of Engineering, University of Windsor

With over 250 publications, and a Google Scholar H-index of 32, Mehrdad Saif is recognized for his contributions to control and estimation with applications to autonomous health monitoring, fault diagnosis and prognosis in the automotive and aerospace industries. His collaborative research with General Motors has been commercialized in a wide range of production vehicles and components from the Chevrolet Malibu to the Cadillac Northstar. As an engineering Dean and academic leader, Saif has made lasting contributions to engineering education. He has developed and implemented several innovative interdisciplinary engineering programs including Mechatronic Systems Engineering at Simon Fraser University, and an M. Eng. in Management at Windsor.

Khaled Sennah, Professor and Department Chair, Civil Engineering Department, Ryerson University

Dr. Sennah has demonstrated excellent achievements in teaching, research and service to the profession. His core area of expertise includes design, evaluation and rehabilitation of bridges on which he has more than 260 publications and supervised over 70 graduate students. His achievements have been recognized by such international awards as the Arthur Wellington Prize for best journal paper in transportation-related infrastructure and the State-of-the-Art in Civil Engineering award from the American Society for Civil Engineers. He has also received the P.L. Pratley Award for best journal paper in bridge engineering and the A.B. Sanderson Award for Outstanding Contributions by a Civil Engineer to the Development and Practice of Structural Engineering in Canada from the Canadian Society for Civil Engineering. His designs are in use in bridge construction in Ontario, and have resulted in typical cost savings of 30%.

Joao Soares, Professor, University of Alberta

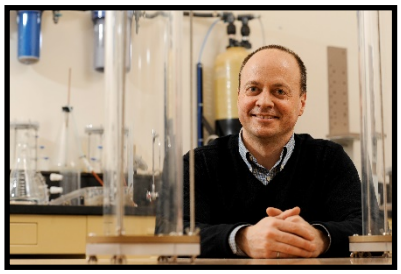
Professor Soares holds a Canada Research Chair in Advanced Polymer Reaction Engineering and a Campus Alberta Innovates Chair in Interfacial Polymer Engineering for Oil Sands Processing. He has authored over 200 papers in refereed journals, and given more than 250 conference presentations. His impact in the polyolefin industry is reflected in his wide consulting experience with all major international polyolefin manufacturing companies and in his very successful industrial short course, Polyolefin Reaction Engineering, currently in its 10th year. Professor Soares also promotes the dissemination of chemical engineering knowledge as the Editor-in-Chief for the Canadian Journal of Chemical Engineering. He is a Fellow of the Chemical Institute of Canada and has been honoured for his research by such organizations as Dow Chemicals, Alberta Innovates and the Province of Ontario.

NEW FELLOWS 2017

Chinthananda Tellambura, Professor University of Alberta

Professor Tellambura is a world-class researcher in the field of wireless communication systems. He has made sustained and fundamental contributions on design, modeling and analysis of 3G, 4G and emerging wireless standards. At national level, he has served on many science and engineering panels and, internationally, editorships on prestigious journals on wireless technology. He has trained over 50 highly qualified wireless engineers who now serve the global wireless industry and academia. He has authored over 500 journal and conference publications with more than 11500 citations and a Google Scholar H-index of 56. His outstanding research contributions have been recognized by his elevation to IEEE Fellow grade in 2011 and by the Killam and McCalla Professorships at the University of Alberta.

René Therrien, Full Professor and Vice Dean, Université Laval



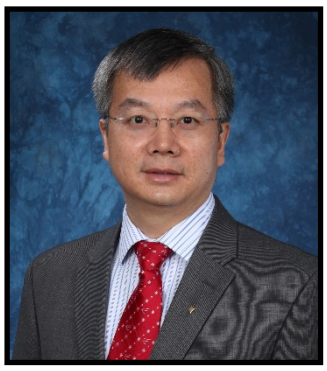
Professor René Therrien has established himself as a national and international leader in the simulation of complex hydrogeological problems. He has developed state-of-the art, efficient numerical simulations and that are currently used worldwide to address real water resources issues, for example, in the long term storage of nuclear waste and in contaminant remediation. His work is extensive and frequently cited. He has served on expert panels and advisory boards for the Royal Society of Canada, the Council of Canadian Academies and NRCan. Dr. Therrien has also made extensive contributions to the training of the next generation of scientists and engineers as well as significant administrative contributions to promote research in engineering.

Brian Veitch, Professor, Memorial University of Newfoundland

When an emergency happens at sea you have to be prepared, act fast, and get it right. You don't get a second chance. The innovative simulator technology that Dr. Brian Veitch has developed has greatly improved marine safety worldwide by providing those working at sea with the tools they need to respond to emergencies in the toughest conditions on Earth. His research provides a wealth of experience that is otherwise unavailable due to dangerous and unpredictable offshore conditions and has played a leading role in the creation of a standard for emergency escape, evacuation and rescue for the Canadian and international offshore industries. For this work, he has been honoured with Fellowships from SNAME and the Royal Institute of Naval Architects.

NEW FELLOWS 2017

Chengshan Xiao, Professor, Missouri University of Science and Technology



Dr. Chengshan Xiao has made outstanding contributions to the fields of wireless communications and signal processing. His patented mobile speed estimation algorithm and robust channel equalization algorithm have been implemented into Nortel's base station radio products which saw massive production levels at the time. His wireless fading channel models and simulators have been widely adopted by academia and industry. He pioneered innovative designs of linear precoders for transceivers with finite alphabet signaling. His novel multiple input multiple output turbo equalization algorithms have been successfully applied to underwater acoustic communications with real world undersea experiments conducted by the US Navy, for which he was honoured with a 2014 Humboldt Research Award.

Laurence Yang, Professor, St. Francis Xavier University

Dr. Yang is a visionary leader in the area of distributed embedded and ubiquitous systems. His pioneering research on cyber-physical-social system design and data analytic has opened up a new research direction, inspired the work of many researchers and made significant impact on society through commercial product developments including two successful start-up companies. He is a very active and valued mentor to many students and international colleagues. He has spent tireless volunteer effort on IEEE technical committees and societies and many IEEE conferences as a steering chair. His visionary leadership on bi-lateral relations between Canada and China in post-secondary education and research has created significant collaborative opportunities for researchers and students of both countries. Finally, his 2010 book "Mobile Intelligence" (Wiley) received an Honorable Mention from the American Publishers Awards for Professional and Scholarly Excellence.

Yu-Dong Yao, Professor and Department Director, Stevens Institute of Technology

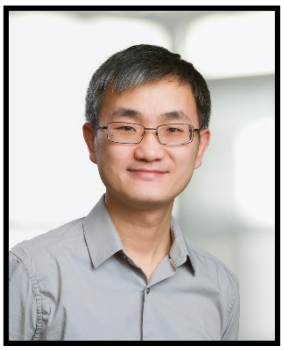
Dr. Yu-Dong Yao is an internationally recognized expert in data link and access protocol designs for satellite and cellular networks. For over 25 years, he has made significant contributions to telecommunications systems, including developing advanced on-board processing technologies for the Canadian Department of Communications and the European Space Agency and data link protocols for the Globalstar satellite system. Dr. Yao holds 13 U.S. patents and published over 150 research papers, including one which ranked in the top 1% highly cited. He served as an Editor of the IEEE Transactions on Wireless Communications. He is an IEEE Fellow and a Fellow of National Academy of Inventors.

NEW FELLOWS 2017

John (Jack) Young, Director, Steelmaking & Casting (Retired), Hatch Canada

Jack Young has been eminently successful in the generation and application of new knowledge associated with primary steelmaking operations. With over forty years' experience, he has provided exceptional engineering leadership in simulation modelling and commissioning of numerous steelmaking plants within Canada and abroad. He has coauthored a textbook entitled "Metallurgical Plant Design" and made significant contributions to the training of engineers in industry as well as engineering students at both McGill and the University of Toronto. Throughout his distinguished career, Young has facilitated knowledge exchange between industry and academia and served as an excellent ambassador for the Engineering Profession. He has received a number of high profile awards from AIME's Iron and Steel Society.

Wei Yu, Professor and Canada Research Chair, University of Toronto



Wei Yu has made highly influential contributions to the field of information theory and communication engineering. His theoretical research addressed fundamental limits of information transmission in communication networks. He proposed dynamic spectrum management methods that have been used in millions of digital subscriber lines worldwide and also contributed significantly to the capacity analysis and optimization techniques for multiuser multiple-input multiple-output (MIMO) wireless communication channels. Dr. Yu has been named by Thomson Reuters as a "Highly Cited Researcher", placing him with the top 20 engineering authors in Canada, and is a Fellow of the IEEE.

Karim Zaghib, Director, Energy Storage and Conversion Department, Hydro Quebec

Karim Zaghib has made a number of seminal contributions in materials for lithium ion and solid state batteries. His inventions are used in almost every lithium battery sold worldwide. His work has been recognized through multiple awards and distinctions internationally, including Fellow of the Electrochemical Society and several prizes for novel battery technologies. He was selected in 2015 and 2016 as a most influential mind by Thomson Reuters. He has also made distinct contributions to mentoring young engineers and scientists.

NEW FELLOWS 2017

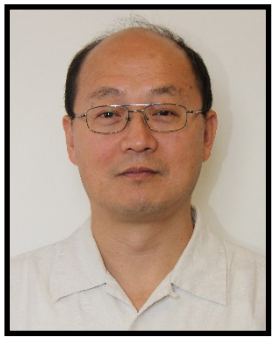
Dan Zhang, Kaneff Professor in Robotics and Mechatronics, York University

Dr. Zhang is a well-accomplished educator and an internationally renowned expert in the areas of parallel robotic machines and their applications in manufacturing systems. His influential scientific contributions have led to novel robotic system designs and development of new comprehensive models for better understanding of globe stiffness and robotic calibrations. His research applications have tackled some of the world's most challenging problems in high dynamic performance manufacturing robotic systems. Additionally, Dr. Zhang has an outstanding track record in the successful training of future scientists and engineers and numerous collaborations with industry and government laboratories in Canada and beyond. He has been honoured with Fellowships in the ASME, EIC and CSME.

WenJun (Chris) Zhang, Professor of Mechanical Engineering, University of Saskatchewan

Dr. Chris Zhang has made outstanding contributions to systems design, control or operation management technology, and robotics. His work pays particular attention to integrated design and control of dynamic systems for high performance with resilience. This has led to the improvement of disaster management practice and development of highly-resilient robots used for rescue during natural disasters. He has trained a large number of highly qualified personnel, and is widely recognized as an excellent educator, having received the University of Saskatchewan's Distinguished Graduate Supervisor Award and the Saskatoon Engineering Society of APEGS' Educator of the Year distinction. He is a Fellow of the ASME.

Yun Zhang, Professor, University of New Brunswick



Dr. Zhang is an internationally renowned geomatics engineering professor, researcher, and inventor in the field of advanced geomatics image processing. In addition to his substantial list of research publications and international recognition, Dr. Zhang and his team have worked successfully to transform award-winning research into viable products that are helping transform satellite mapping and image surveillance processes and move them into mainstream use and onto smartphones. His work is widely cited in literature, and results of his collaborative research are now embedded in products offered by such companies as PCI Geomatics, DigitalGlobe and Google.

NEW FELLOWS 2017

David Zhu, Professor, University of Alberta

Dr. Zhu is a world-leading expert in urban drainage and sustainable hydropower. He has made fundamental contributions to our understanding of air/water and sand/water multiphase flows. His research accomplishments have been globally recognized and applied in real-world engineering designs. He is a leading international figure in the modernization of urban sewer design and operations to face the challenge of climate change and stringent environmental regulations. His research has also significantly enhanced Canada's reputation in sustainable hydropower and fishway designs. Dr. Zhu is also actively promoting collaborations between Canada and China in sustainable hydropower development. He is the recipient of many awards including an Alexander von Humboldt Foundation Research Fellowship and the Donald R. Stanley Award from the CSCE

Radu Zmeureanu, Professor, Faculty of Engineering, Concordia University

Radu Grigore Zmeureanu, an accomplished researcher and educator, has made significant contributions in the area of energy analysis of buildings by developing sophisticated computer modelling software applied successfully to several major buildings in Canada and internationally. He is considered an authority in the area of energy analysis of buildings. He has received several awards of distinction including Life Membership in ASHRAE and Fellowship in the International Building Performance Simulation Association.

NEW INTERNATIONAL FELLOWS 2017

Junuthula Reddy, Distinguished Professor, Texas A&M University

Professor Reddy has made outstanding contributions to research and education in applied mechanics through his highly-cited contributions to variational principles and methods, shear deformation theories of beams, plates, and shells, and the mathematical theory of the finite element method, successful commercialization of his research and service to the profession. Dr. Reddy is recognized for lasting contributions to research and education through the development of shear deformation structural theories, creation of finite element models for accurate determination of inter-laminar stresses in composites, modeling of Newtonian and non-Newtonian fluids, and writing of well-received textbooks, all of which have had major impact on engineering education and practice. He is a Fellow of the US National Academy of Engineering and a Foreign Fellow of the Indian National Academy of Engineering. He has received many awards including the ASME Medal, that organization's highest honour.

Paul Weiss, UC Presidential Chair & Distinguished Professor, UCLA

Paul Weiss explores the ultimate limits of miniaturization, designing, assembling, and operating the world's smallest switches and motors, including developing and applying both the tools to place single molecules and assemblies in controlled chemical environments, adding the chemical dimension to nanolithography and revolutionary new nanoscale analysis tools that enable the measurement of structure, function, and spectra with submolecular resolution. The journal he founded, ACS Nano, has, in only nine years, risen to 18th most cited in all fields. He has been honoured by many organizations, including the American Chemical Society, the American Physics Society and the AAAS. He has contributed to Canada through invited lectures at the University of Alberta and hosting Canadian Fulbright Chairs.