

32nd ANNUAL GENERAL MEETING PRESIDENT'S REPORT

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For the second year in a row, I have the pleasure of thanking President Elect Eddy Isaacs, along with Executive Director Kevin Goheen, for organizing the Academy's Annual General Meeting and Symposium, this year in Calgary. Because "practice-makes-perfect", I know that this year's meeting will be even better than the stellar event that we enjoyed last year.

Our Mission

Our Academy has two major missions: to celebrate engineering excellence by electing Fellows to the Academy from among Canada's most experienced and outstanding engineers, and to provide anyone who is willing to listen with expert advice on all aspects of engineering, including engineers and the work that we do. These missions are fundamental to our existence, and we have made progress on both during the last year.

Election of New Fellows

I am very pleased to report that our Governor General, Her Excellency the Right Honorable Julie Payette, very graciously accepted an Honorary Fellowship on May 23 at a special ceremony at Rideau Hall. Her Excellency exemplifies the fact that engineers have a place at every level of our government structure, and we are very proud to have her as an Honorary Fellow of our Academy.

Later today, we will induct 59 outstanding Canadian engineers into our academy, and two exceptional International Fellows. In so doing, we will have an academy comprising five Honorary Fellows, 533 Active Fellows, 203 Emeritus Fellows, and four International Fellows, all of whom will aid us in facilitating our second mission.

All the newly elected Fellows were nominated through a rigorous process, under the chairmanship of David Coleman, and elected to the Academy by a large majority of Fellows. On behalf of the Academy, I am honoured to be associated with them all.

This year's induction process requires some special comments. Our policies provide for the election of up to 50 new Fellows and 10 new International Fellows each year. However, the policies also allow for the Fellowship Committee to put forward the names of additional candidates if they feel there are compelling reasons. In many ways, this year was a remarkable year for nominations. For some time, your Board has been wrestling with two major issues related to the composition of our Academy. In the past, the overwhelming majority of new Fellows were from academe, despite the fact that the overwhelming majority of Canadian engineers work in industry or government. While many of the industry/government engineers that were nominated, were elected, in the past, we simply were not getting a large number of

these candidates being nominated. Similarly, in the past, almost all of the new Fellows were men. In part, this belongs to a larger conversation about systemic and structural barriers faced by women pursuing careers in STEM – something which the Academy recognizes and is working to address. If, in the past, there were not enough female engineers with careers long enough to build a resume that would get them elected as Fellows, that is no longer the case. Today, the Academy is glad to have a number of successful female engineers to reflect the growing body of talent in our profession.

This year, our Executive Director Kevin Goheen, with the full support of your Board, went on what can only be described as a “mission” to identify distinguished engineers from industry and government, including women who had achieved distinction in engineering. Once he had identified potential candidates for Fellowship, he then matched them with potential nominators. He also worked with Engineers Canada to identify engineers who had contributed to the profession through volunteer activities with provincial, territorial and national engineering bodies. His tireless efforts had spectacular results. Firstly, the total number of nominations jumped from 87 in 2017 to 125 in 2018. Furthermore, the number of engineers from industry and government jumped from 15 to 49, and the number of women from two to 26. As a result, this year saw a much better reflection of the engineering profession among our newly elected Fellows, with 28 from academe, 28 from industry, and five from government. Even more encouraging, this year, 17 of our new Fellows are women.

However, every success has its downside. In this case, the Fellowship Committee found itself with many more strong candidates than in previous years, and faced the difficult task of narrowing the candidates down to 50. As a result, the Committee felt compelled to go beyond the normal maximum of 50 Active Fellows, and put forward 59 names for consideration. Even at this number, the success ratio of candidates was significantly lower than in previous years. However, it is worth noting that, moving forward, there is no intention to increase the number of new Fellows accepted into the Academy each year. There have been lively discussions on the Board about this issue, and the consensus is that 50 is the right number, and that 2018 was an anomaly caused by the dramatic change in the number and strength of the nominations. As a result, there are two clear messages coming forward. First, next year the Fellowship Committee will be expected to make some very hard decisions when it comes to the names put forward for election. Second, for the Fellows planning on nominating new Fellows, care must be taken to build an exceptionally strong case for your candidates if you expect them to be elected. The playing field has clearly changed, and the level of achievement of successful Fellows will be even higher in the future than in the past.

A Productive Year

This year has seen many achievements in our mission to inform engineering related policy. Our main vehicle for achieving this mission is through the Council of Canadian Academies (CCA). Last year, I reported on significant improvements in our relationships with the CCA, and our sibling academies the Royal Society of Canada (RSC) and the Canadian Academy of Health Sciences (CAHS). I am very pleased to say that under the continued leadership of CCA Chair Margaret Bloodworth and CCA President Eric Meslin, and with the active participation of the

presidents of the RSC, Maryse Lassonde and Chad Gaffield, and the CAHS, Carol Herbert and Linda Rabeneck, the positive developments have continued. The academy presidents continue to meet regularly by teleconference to discuss both CCA related and other issues. I would particularly like to thank Chad and Linda for continuing this practice. But I would be remiss if I did not point out the remarkable leadership given by both Margaret and Eric. It would be very accurate to say that, since the appointment of Margaret and the arrival of Eric, relations between the Academies and CCA have undergone a sea of change. I truly believe that CCA is now poised to become the instrument for providing the federal government with evidence-based assessments, so the government can fulfill its promise to base policy on sound science.

This year, the CCA has produced three reports, all of which had involvement by Fellows of the CAE. I particularly wish to acknowledge the contributions made by our Fellows to these reports:

Expert Panel on the State of Science and Technology and Industrial Research and Development in Canada (April 2018): **Claude Lajeunesse FCAE and John M. Thompson, OC, FCAE.**

Learning Experiences Offered by Business Schools in Canada, workshop, **John R. McDougall, FCAE.** Member Steering Committee, participants **Richard Boudreault FCAE; Judy Fairburn, FCAE; Tom Jenkins, O.C., FCAE; John L. Mann, FCAE.**

Expert Panel on the Transportation Needs of an Aging Population (Dec 2017), [S. C. \(Chan\) Wirasinghe, FCAE.](#)

I am also pleased to report that the federal government has called upon us to provide expert advice. For example, on May 24, Kevin Goheen and Kathleen Vaillancourt testified before the House of Commons Standing Committee on Natural Resources on the current state and future of national energy data. Soon-to-be-inducted-Fellow, Joy Romero, also presented at that session. Another activity was our contribution to the Conference Board of Canada carbon pricing report was released in September 2017. This work was largely based on the data assembled for the Trottier Energy Futures Project. I also participated in a webinar to promote the report. Our Executive Director, Kevin Goheen, was also called upon to gather information on Canadian building safety practices as a contribution to the Royal Academy of Engineering Grenfell Tower report. Finally, we continue to contribute to the CAETS Energy Working Group, which is currently drafting a report on “Energy Technologies for a Climate-Friendly Future – Challenges and Solutions for a Clean Supply of Energy.”

As can be seen, we are becoming increasingly active in international partners. For this reason, the Board has decided to establish an International Committee. This committee will initially be chaired by Peter Mascher and is just beginning to establish its mission and practices.

The past year was our first full year administering the two scholarships funded by the Society of Automotive Engineers. We are pleased to announce the winners. Anston Emmanuel has been awarded the 2018 CAE Belfry SAE Scholarship; Anston is a 4th year Mechanical Engineering

student at the University of Toronto. Jane Illarinova has been awarded the 2018 CAE Aubin SAE Scholarship; Jane is a 2nd year Computer Engineering student at the University of Toronto. I am very pleased to introduce Bruce Aubin, whose generosity and vision created the second award. Bruce is also being inducted as a new Fellow this evening

This year has seen renewed interest by local sections of the Academy. For example, the Montréal section, under the leadership of Yves Beauchamp, have held two very successful presentations: a visit in Fall 2017 to La Romaine, a new Hydro Québec generation facility, and the other in June 2017 on the new mega hospital center of the University of Montréal. The Calgary section has also been very active, meeting three times in the last year to discuss issues such as the future of the Canadian hydrocarbon industry, fusion energy, and new extraction methods for oil sands bitumen.

Concluding remarks

Our Academy celebrates achievements of Canadian engineers and I am delighted to recognize the continued achievements of our Fellows over the past year.

- Nine of our Fellows were named to the Order of Canada:
Sophie D'Amours O.C.
Keith Hipel O.C.
Garry M. Lindberg C.M.
Terry Matthews O.C., O.B.E.
Saeed Mirza C.M.
Kerry Rowe, O.C.
Michael Sefton, O.C.
Molly Shoichet, O.C.
Bert Wasmund C.M.
- Molly Shoichet, FCAE, has been appointed as Ontario's first Chief Scientist.
- Tom Chau, FCAE, has been awarded the Order of Ontario.
- Four of our Fellows have been elected to the Royal Society of Canada
Richard Bathurst, FCAE.
Bin Wu, FCAE
Milica Radisic, FCAE
Jiujun Zhang, FCAE.
- Five of our Fellows were awarded honorary degrees:
Indira Samarasekera, FCAE, was honoured by Queen's University.
Ralph Haas, FCAE, was honoured by the University of Alberta.
David Lynch, FCAE, was honoured by the University of New Brunswick.
Kim Sturgess, FCAE, was honoured by the University of Calgary.
Lorne Trottier, FCAE, was honoured by Concordia University.

- Many of our Fellows have assumed leadership positions in academia, industry and government: Elizabeth Croft, FCAE, has been appointed as Engineering Dean at Australia's Monash University. Janusz Kozinski, FCAE, has been named the inaugural President & CEO of NMiTE, Britain's new model university. Sushanta Mitra, FCAE, has been named the new Executive Director of the Waterloo Institute of Nanotechnology. Gilles Patry, FCAE, has been appointed as Executive Director of the U15 Group of Canadian Research Universities. Claude Lajeunesse, FCAE, has been appointed as Chair of Atomic Energy of Canada Limited (AECL) for a 2 year terms, starting in June 2017. Amit Chakma, FCAE, has been appointed Chair of the Association of Commonwealth Universities Council. John Luxat, FCAE, has been elected Chair of the International Nuclear Energy Academy for a two year term. Kim Allen, FCAE, was appointed to the Integrated Engineering Blockchain Consortium Advisory Board. Donald Mavinic, FCAE, Professor at the University of British Columbia has been chosen to Chair the Canadian Water Network expert panel on Contaminants in Wastewater. Philippe Tanguy, FCAE, has been appointed as Director General of Polytechnique Montréal, effective January 2018. Dawn Tattle, FCAE, has been appointed to the Board of The Guarantee Company of North America. Alan Winter, FCAE, has been named as BC's first Innovation Commissioner. James Olson, FCAE, has been appointed as the Dean of the Faculty of Applied Science at the University of British Columbia. Nancy Hill, FCAE, has been elected President-Elect of the Professional Engineers Ontario (PEO) Council for the 2018-2019 term. Kim Woodhouse, FCAE, was appointed as Interim Vice-Principal (Research) at Queen's University. Andy Hrymak, FCAE, has been appointed as Western's next Provost. Samantha Espley, FCAE, has been named the incoming head of the Presidents Council for the Canadian Institute of Mining, Metallurgy and Petroleum for the 2020-2021 year. Tom Harris, FCAE, has been appointed Interim Provost and VP (Academic) at Queen's University. Jeannette Montufar, FCAE, has been appointment as the Chair of Efficiency Manitoba.
- Our Fellows continue to receive recognition for their achievements: Mike Worswick, FCAE, has been elected as a 2016-2017 SAE Fellow. Digvir Jayas, FCAE, has been named the 2017 recipient of the Sukup Global Food Security Award. Zhangxing (John) Chen, FCAE, and Schulich School of Engineering Professor has been awarded the 2017 CAIMS-Fields Industrial Mathematics Prize. Jeannette Montufar, FCAE, has been awarded the 2017 Institute of Transportation Engineers Wilbur S. Smith Distinguished Transportation Educator Award. Chris Huskison, FCAE, has been awarded the 2017 F.H. Sexton Gold Medal. The following Fellows were named 2017 IEEE Canada Award recipients: Michel Nakhla, FCAE, Professor at Carleton University (McNaughton Gold Medal); Praveen K. Jain, FCAE, Professor at Queen's University (Electrical Power Award); Hussein Mouftah, FCAE, Canada Research Chair and Professor at the University of Ottawa (C.C. Gotlieb

Computer Award); Frederico Rosei, FCAE, Professor at the Institut national de la recherche scientifique (Outstanding Engineering Award). Baining Guo, FCAE has been named a Microsoft Distinguished Scientist. Sushanta Mitra, FCAE has been elected as a Foreign Fellow of the Indian National Academy of Engineering. Wei Yu, FCAE, Professor at the University of Toronto has been named a member of the Royal Society of Canada College of New Scholars, Artists and Scientists. Miguel Anjos, FCAE, Professor at Polytechnique Montréal has been elected as a 2017 EUROPT Fellow. The following Fellows were named Royal Society of Canada award recipients: Keith Hipel, FCAE, Professor at the University of Waterloo (Miroslaw Romanowski Medal); Zhongwei Chen, FCAE (Rutherford Memorial Medal in Chemistry). Paul Amyotte, FCAE, Professor at Dalhousie University won the 2017 Canadian Society for Chemical Engineering Process Safety Management Award. Sushanta Mitra, FCAE has been elected as a Fellow of the American Physical Society. The following Fellows received funding for Innovation in Canada grants: David Wilkinson, FCAE, Provost at McMaster University, for Advanced Material Technologies; Milica Radisic, FCAE, Professor at the University of Toronto, for the Laboratory for Functional Tissue Engineering; Greg Lawrence, FCAE, Professor at the University of British Columbia, to establish an Environmental Fluid Mechanics experimentation field lab. Elizabeth Edwards, FCAE was honoured with a teaching award by the University of Toronto. David Wilkinson, FCAE, Provost at McMaster University was named Engineer of the Year by the Hamilton Halton Branch of the Ontario Society of Professional Engineers (OSPE). Wayne Clifton, FCAE, President of Clifton Associates has been honoured for Lifetime Achievement at the Association of Consulting Engineering Companies (ACEC) with the 2017 Beaubien Award. The following Fellows were honoured at the 67th Canadian Chemical Engineering Conference: Eddy Isaacs, FCAE, former CEO of Alberta Innovates-Energy and Environmental Solutions; Jacob Masliyah, FCAE, Professor at the University of Alberta; Sirish Shah, FCAE, Professor at the University of Alberta. Shah was also awarded the R.S. Jane Memorial Award; Paul Amyotte, FCAE, Professor at Dalhousie University was awarded the Atkins Process Safety Award. Mike Lazaridis, FCAE, Founder of Blackberry and Gilles Patry, FCAE, Executive Director of the U15 Group of Canadian Research Universities, were honoured by Western University at its 310th convocation. The following Fellows received teaching awards from the University of Toronto: Greg Evans, FCAE (3M Teaching Fellowship); Jonathan Rose, FCAE (Ontario Confederation of Universities Faculty Associations Award); Elizabeth Edwards, FCAE (Award of Excellence). Christophe Guy, FCAE, Concordia University V-P, Research & Grad Studies, received the 2017 laureate of the Prix du Quebec Armand-Frappier Award. The following Fellows were honoured by Professional Engineers Ontario (PEO) and the Ontario Society of Professional Engineers (OSPE): Catherine Karakatsanis, FCAE, won

the Gold Medal for acting as a role model for aspiring women engineers; Samantha Espley, FCAE, for her engineering management achievements. Patrick Selvadurai, FCAE, Professor at McGill University was awarded the 2017 International Association for Computer Methods and Advances in Geomechanics Medal. The following Fellows received University of Toronto Alumni Awards: Tom Chau, FCAE (2T5 Mid-Career Award); Jonathan Rose, FCAE (Alumni Hall of Distinction Award). Elizabeth Cannon, FCAE and Molly Shoichet, FCAE were featured in author Paulina Cameron's *Canadian 150 Women*, a book that profiles inspiring women in Canada with empowering stories. Jeanette Southwood, FCAE and Nancy Hill, FCAE were named to the WXN Canada Most Powerful Women Top 100 List. Tom Jenkins, FCAE, has been named an inaugural Distinguished Policy Fellow of the University of Calgary's School of Public Policy. Tom Chau, FCAE, along with his colleagues at the Holland Bloorview Kids Rehabilitation Hospital has been recognized with one of Canada's highest honours – the Meritorious Service Cross (Civil Division), presented by the Governor General of Canada. Richard Boudreault, FCAE, was awarded the "distinction de Chevalier dans l'Ordre des Palmes academiques" by the government of France. He was also awarded the 2018 George E. Pake Prize from the American Physical Society. The following Fellows received 2018 Engineering Institute of Canada Awards: Brahim Benmokrane, FCAE (Julian C. Smith Medal, co-recipient); Edward McBean, FCAE (Julian C. Smith Medal, co-recipient); Delwyn G. Fredlund, FCAE (Y. LO Medal); Mohammad Cheriet, FCAE (EIC Fellowship); Muthukumaran Packirisamy, FCAE, (EIC Fellowship); Colin Smith, FCAE (EIC Fellowship); Dharma Wijewickreme, FCAE, (EIC Fellowship); Milica Radisic, FCAE and Professor at the University of Toronto, has been named the 2017 recipient of the Steacie Prize for her ground-breaking work in tissue engineering. The following Fellows have been elected into the IEEE: Liping Fang, FCAE, Professor at Ryerson University; Biao Huang, FCAE, Professor at the University of Alberta. Rod Nolan, FCAE, was named as one of the first Distinguished UNB Engineering Alumni Award Recipients. Xueliang (Andy) Sun, FCAE, has been awarded the 2018 Chemical Institute of Canada Award for Research Excellence in Materials Chemistry. Paul Weiss, FCAE, has been awarded the 2018 American Chemical Society Austin M. Patterson-E.J. Crane Award. Milica Radisic, FCAE, Professor at the University of Toronto, has been named a YWCA Toronto Woman of Distinction. Shushanta Mitra, FCAE, Executive Director of the Waterloo Institute for Nanotechnology has been awarded the Hind Rattan Award. The following Fellows received Professional Engineers Ontario (PEO) Honour Awards: Chris Roney, FCAE, (Companion); Jeanette Southwood, FCAE (Officier). Jin Jiang, FCAE, was named a Distinguished University Professor at Western University for his work on control systems. Chris Huskison, FCAE, recently retired CEO of Emera has been named to the business leader Wall of Fame by the University of New Brunswick. Professor J.N. Reddy, FCAE, has won the ASCE

Theodore von Karman Medal and the John von Neumann Medal from the US Association of Computational Mechanics. The following Fellows received APEGA Awards: Leah Lawrence, FCAE, (Centennial Leadership Award); Lynne Cowe Falls, FCAE, (Women in Engineering and Geoscience Champion); Simaan AbouRizk, FCAE (Excellence in Education Award); The following Fellows have been honoured by Engineers Canada: Levente Diosady, FCAE, Professor at the University of Toronto (Gold Medal Award); Jeannette Montufar, FCAE, (Award for the Support of Women in the Engineering Profession). Chan Wirasinghe, FCAE, will receive the Order of the University of Calgary at its Spring Convocation. Tom Chau, FCAE, has won the Governor General's Innovation Award. Professor Daolen Chen, FCAE, of Ryerson University has recently been honoured with a Fellowship in the Canadian Institute of Mining, Metallurgy and Petroleum and the UK's Institute of Materials, Minerals and Mining (FIMMM). Colin Smith, FCAE, was awarded a Vice Regal Commendation, by Her Honour Judith Guichon, OBC British Columbia's 29th Lieutenant Governor.