



**Council of the Faculty of Applied Science & Engineering  
Minutes of the Meeting of February 27, 2023**

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**MEMBERS:** Jun Nogami (Speaker), Chris Yip (Dean), Ravi Adve, Rejuana Alam, Dionne Aleman, Danita Allick, Cristina Amon, Brohath Amrithraj, Evan Bentz, Shlomo Bibas, Chris Bouwmeester, Helen Bright, Sharon Brown (for Dionne Aleman), Eric Bryce, Markus Bussmann, Hay Shun Chan, Warren Chan, Heba Chehade, Alan Chong, Sinisa Colic, Tom Coyle, Chris Damaren, Francis Dawson, Michelle Deeton, Salma Emara, Natalie Enright Jerger, Greg Evans, Jennifer Farmer, Ramin Farnood, Seyedreza Fattahi Massoum, Diane Giang, Aidan Grenville, Piyush Gupta, Sarah Haines, Marianne Hatzopoulou, Angela Henshilwood, Ken Hilton, Muktar Homam, Ali Hooshyar, Reza Iravani, Greg Jamieson, Charles Jia, Parker Johnston, Dawn Kilkenny, Deepa Kundur, Seungjae Lee, Jiahao (Terry) Li, Hugh Liu, Heather MacLean, Sam Mantenuto, Elham Marzi, Paul Milgram, Kasra Modares, Emily Moore, Seyed Mohamad Moosavi, Wai Tung Ng, Joseph Paradi, Elodie Passeport, Prarthona Paul, Doug Perovic, Daniel Posen, Doug Reeve, Mark Rittinger, Jonathan Rose, Cindy Rottmann, Nicole Ryk, Shamim Sheikh, Patricia Sheridan, David Song, Micah Stickel, Kyla Tan, Hamid Timorabadi, Marianne Touchie, Chris Twigge-Molecey, Tony Vanvari, Chirag Variawa, Carmela Versace, Julia Wagner, Lesley Warren, Nicole Weckman, Jay Werber, Tobin Zheng

**SECRETARIAT:** Caroline Ziegler (Secretary), Alex Schroen (Moderator)

**GUESTS:** Chris Brown, Mikhail Burke, Sonia De Buglio, Khuong Doan, Matthew Du, Jennifer Fabro, Pierina Filippone, Adam Fox, Roger Francis, Shilpa Gantotti, Rodney Gensell, Leslie Grife, Christina Heidorn, Jonguk Justin Lee, Jess MacInnis, Don Newton, Dan Pettigrew, Prajj Rajawat, Zeeshan Rayees, Ingrid Schvarczkopf, Frank Scornaienchi, Peter Serles, Alex Tichine, Geoff Wichert, Nefeteria Wickham

**1. Speaker's Welcome**

Speaker Jun Nogami called the third Faculty Council meeting of 2022-2023 to order at 12:10 pm, welcoming members and guests and noting the presence of three former Council Speakers: Professors Emeriti Joseph Paradi and Doug Reeve, and Professor Jonathan Rose.

The Speaker reviewed protocols for the hybrid meeting, and before acknowledging the land on which the University of Toronto operates, referred to the TV series, "The Last of Us," which begins with a wonderful scene of an Indigenous couple living off the land after a zombie apocalypse. The actor who plays the husband, Graham Greene, is from Ohsweken, Ontario, the administrative seat of the Grand Nations reserve, which is located by a smaller reserve of land under the control of the Mississaugas of the Credit.

Ontario has 22 water advisories affecting 19 First Nations communities in the province, the highest number of long-term drinking water advisories in the country. Most affected communities are remote or northern but a number are in southern Ontario, such as those in Mohawk Territory just east of Belleville; Chippewas of Georgina Island in Lake Simcoe; and – just southwest of London – Chippewas of the Thames First Nation and Oneida Nation of the Thames.

## **2. Approval of Agenda**

The agenda and reports were distributed on February 15. Agenda item 10, *Report 3733 Revised: Faculty of Applied Science & Engineering Best Practices for Assessing Teaching Effectiveness in PTR Decisions*, was distributed on February 22.

There was no discussion and on a regular motion duly moved, seconded and carried, the agenda was approved.

## **3. Introduction of New Faculty Members**

New faculty members Seyed Mohamad Moosavi of the Department of Chemical Engineering & Applied Chemistry, Cindy Rottmann and Nicole Weckman of the Institute for Studies in Transdisciplinary Engineering Education & Practice, and Salma Emara of The Edward S. Rogers Sr. Department of Electrical & Computer Engineering were introduced by their respective chairs and directors.

## **4. Adoption of the Minutes of Previous Meetings**

No errors or omissions were noted in the minutes of the December 6, 2022 Council meeting and on a regular motion duly moved, seconded and carried, the minutes were approved.

## **5. Memorial Tributes**

### **(a) Peter Carlisle Hughes**

Chris Damaren, Director of the University of Toronto Institute for Aerospace Studies, read the following memorial tribute in honour of Professor Emeritus Peter Carlisle Hughes.

Be it resolved –

THAT the Council of the Faculty of Applied Science & Engineering record with deep regret the death on January 5, 2023 of Peter Carlisle Hughes.

Professor Emeritus Peter Carlisle Hughes was a preeminent dynamicist, aerospace engineer and space robotics pioneer.

Peter was a graduate of Engineering Physics (now Engineering Science), class of 6T2. He went on to earn a Master's and doctoral degree from UTIAS and joined the faculty immediately thereafter in 1966. He retired from the University in 2004.

For over forty years, Peter played a central role in Canada becoming a space-faring nation. The history of Canada in space cannot be written without Peter Hughes's name. Indeed, Canada's sterling international reputation in space technology owes much to him.

He began his career by recognizing the cause of the unexpected tumbling behaviour of Alouette I, Canada's first satellite. In 1970, along with colleagues at UTIAS, he helped secure the safe return of Apollo XIII.

His work was seminal to the design of perhaps Canada's most recognizable technological achievement, Canadarm—the robotic arm for the Space Shuttle. On the occasion of bestowing on Peter in 2007 the Canadian Space Agency's (CSA) John H. Chapman Award of Excellence, given as "... tribute to a renowned person whose vision for the development of space reflects Canada's values as much as its present and future needs," the CSA President stated that, among other things, "... Canada could not have built Canadarm for the NASA Space Shuttle were it not for Dr Hughes's complete analysis of Canadarm's dynamics and control."

He was also honored with the CASI Alouette Award presented annually to a Canadian "... for outstanding achievement in the field of astronautics." The citation included the comments that "Professor Hughes has made contributions to Canadian space technology and to international space science, while nurturing his love of the subject in students for over four decades. Peter Hughes literally wrote the book on the dynamics of spacecraft ..."

The book referred to, one of six he authored (or coauthored), is his text/reference book, *Spacecraft Attitude Dynamics*, originally published in 1986 and republished in 2004 by Dover as a "classic in its field." It has been in continuous use in graduate course classrooms world-wide and on the bookshelves of most professionals in the field. In a 2006 interview Scott Ploen, the then-new IEEE Control Systems Magazine Associate Editor for Book Reviews, was asked which books were some of his personal favorites; Ploen replied, "I think everyone has his or her own personal list of desert island classics. *Spacecraft Attitude Dynamics* by Hughes is one of my favorites."

In 1980, Peter founded Dynacon Inc., filling a crucial niche in Canada's industrial landscape. Dynacon became one of the first space-related companies to spin off space technology to wider terrestrial application using robotics developed for space to help automate the medical laboratory business.

This experience motivated Peter to obtain an MBA from York University's Schulich School of Business. He then founded, with a bequest from Jeffery Skoll, a joint program—the Skoll program—in the Faculty of Applied Science and Engineering and the Rotman School of Management at the University of Toronto to facilitate students earning an MBA while completing their degree in engineering.

He shall be dearly missed.

Be it further resolved –

THAT this tribute to Peter Carlisle Hughes be inscribed in the minutes of this Council meeting, and that copies be sent to his family as an expression of the respect and gratitude of the members of this Council.

**(b) James K. Mills**

Greg Jamieson, Interim Chair of the Department of Mechanical & Industrial Engineering, read the following memorial tribute in honour of Professor James K. Mills.

Be it resolved –

THAT the Council of the Faculty of Applied Science & Engineering record with deep regret the death on November 18, 2022 of Professor James K. Mills.

Jim Mills was an accomplished and respected mechanical engineering professor who passed away on Friday, November 18, 2022.

Jim was a longstanding member of the University of Toronto community having received both his MSc degree in Electrical Engineering and then a PhD in Mechanical Engineering from the University in 1982 and 1987, respectively. He first joined the Department of Mechanical Engineering at the University of Toronto as a professor in 1988. Prior to joining MIE, Jim worked in designing inertial navigation components. In the Department, he took personal responsibility to lead the development of rigorous safety policies that we still use today. He helped in the hiring and mentoring of many colleagues over the years and was passionate in contributing to strengthening the Department. He also helped spearhead the undergraduate mechatronics stream in the Department, which is now the most popular stream among our students.

He is remembered fondly by his colleagues, both within MIE and outside of the Department. Jim and his longtime collaborator and friend, Professor Wai Tung Ng (ECE), pursued multi-disciplinary projects and secured multiple NSERC Strategic, Alliance, and OCE grants together. Jim's experience and knowledge of control systems, image processing, thermodynamics and automated manufacturing were crucial for projects that ranged from the formation flying of unmanned drones to power semiconductor modules for electric vehicles.

Outside of his research, Jim had many hobbies, including astronomy, photography and adventure travel. Jim was always happy to chat with colleagues or to grab coffee during a break. He would talk about his summer work in Hong Kong and the trips he took while there. Jim would graciously host you when you visited him abroad. His insight was often helpful in making both career and personal decisions.

During their regular early morning coffee sessions at the Second Cup on College Street, Jim and Professor Ng would talk about U of T, their departments, and their respective travels. The photos Jim took on his trips to Vietnam, Tibet (and the non-pressurized "pressurized" train), and across the Silk Road by bus (and the heat on that trip) showed him to be a man who

wanted to understand the world. He had been to Antarctica onboard a small scientific research vessel. He had taken safaris, travelled to the Seychelles Island to photograph wildlife and transited the Panama Canal. Before the pandemic struck, he managed to travel to Namibia, a lifelong goal. Everyone who talked with him heard and saw photos from this trip and he convinced many that Namibia should be their first post-pandemic destination.

Jim was the director of the Nonlinear Systems Control Laboratory and his research focused on the areas of robotics, automation, and control. He published over 400 journal and conference papers and supervised over 50 MSc and PhD students as well as many Postdoctoral fellows and research engineers. He cared greatly about these students – and it was clear it was reciprocated. On any defense, a student knew that Jim was backing them to the end. He would also continue mentoring many of his former students well into their post-graduate careers.

Jim served as Co-Editor in Chief of the International Journal of Information Acquisition and was a member of the Editorial Board of the International Journal of Mechatronics and Automation. He served on the program committees of numerous international conferences. He was an Invited Visiting Professor at the Centre for Artificial Intelligence and Robotics in Bangalore, India, the University of Science and Technology in Hong Kong, the Chinese University of Hong Kong, as well as City University, Hong Kong.

Be it further resolved –

THAT this tribute to James K. Mills be inscribed in the minutes of this Council meeting, and that copies be sent to his family as an expression of the respect and gratitude of the members of this Council.

**(c) Adam Semlyen**

Deepa Kundur, Chair of The Edward S. Rogers Sr. Department of Electrical & Computer Engineering, read the following memorial tribute in honour of Professor Emeritus Adam Semlyen.

Be it resolved –

THAT the Council of the Faculty of Applied Science & Engineering record with deep regret the death on May 24, 2022 of Professor Adam Semlyen.

Professor Adam Semlyen was born to Aurel and Anna (née Gyorgy) Semlyen in Gheria, a village in northern Romania, on January 10, 1923.

Adam achieved his Diplom-Ingenieur (the traditional engineer's degree) from the Polytechnique Institute of Timisoara in Romania. In 1949, he graduated with his PhD degree from Polytechnique Institute Iași — now the Gheorghe Asachi Technical University of Iași — an institution that has a storied tradition in Romanian engineering education. Directly after his doctorate, he held academic positions at the same institution while working for an electric power utility, the Engineer Regional Power Authority in Timisoara. After two years, Adam left

the utility and became a full-time faculty member of Polytechnic Institute Timisoara, teaching and working there for close to twenty years. Adam was married to Mary Semlyen.

In 1969, Adam moved to Canada with and joined The Edward S. Rogers Sr. Department of Electrical & Computer Engineering (known at the time as the Electrical Engineering Department). As a member of what was then the Power Group, his main research interests were in steady-state and dynamic analysis as well as computation of electromagnetic transients in power systems. In 1988, he was named a Fellow of the IEEE for his contributions to this area. That same year he became a Professor Emeritus. He continued to advance the profession, publishing one of his most-cited papers during this time of his life and working with measurable effect well into his nineties. Remarkably, at the age of 98 he was first author on a paper, which proposed a mode identification of linear systems using a novel approach based on the theory of hyperplanes. One wonders what the age record is for lead author for an IEEE publication.

Adam was considered the “academic’s academic.” His curiosity moved him to suggest the possibility of intergroup research collaboration in an era when that was still uncommon. Gentle yet fiercely scholarly, he was known as an exceptional colleague who set high standards for education in the department with his dedication. His integrity and sense of justice never wavered, whether fighting for a colleague’s recognition or proudly representing his dearly loved profession.

Behind his quiet, introspective demeanor, Adam had a passion for education and was known for his care for students. As a thesis supervisor, he would not confine his teachings to the thesis at hand but would also extend it to engineering principles in general, ensuring his students understood and mastered the essence of being an engineer. These lessons would resonate throughout their professional careers.

Adam had an enviably long and productive life, the consummate engineer and teacher whose impact lives on in his contributions to the profession and to the community through those who were fortunate to study under him as students, learn from him as colleagues, or spend time with him as a friend. He will be missed.

Be it further resolved –

THAT this tribute to Adam Semlyen be inscribed in the minutes of this Council meeting, and that copies be sent to his family as an expression of the respect and gratitude of the members of this Council.

The Speaker assumed concurrence with these resolutions and Council observed one minute of silence in honour of Professor Mills and Professors Emeriti Hughes and Semlyen.

## **6. Report of the Dean**

Dean Chris Yip welcomed all to the Council meeting and made the following remarks.

### **(a) Faculty of Applied Science & Engineering 150th Anniversary**

The Faculty is celebrating its 150th Anniversary in 2023 with events taking place throughout the year at multiple locations. Highlights include the Skule™ 150th Founding Day Celebration on March 29 at various locations across campus, and the 150th Anniversary Reception and Gala on April 1st at the Fairmont Royal York.

### **(b) Engineers Canada Update**

As a result of lobbying from deans of engineering schools across the country and support from provincial regulators such as PEO, Engineers Canada recently approved the “Temporary Exemption for Students Going on International Exchange” policy to be included in the 2023 CEAB Accreditation Criteria and Procedures. This exemption removes accreditation barriers to students going on international exchanges.

The Vice-Dean, Undergraduate confirmed that several international exchanges that were put on hold during Covid have been rolled out and if students are interested in pursuing exchange programs they should contact the Centre for International Experience. A new staff person hired jointly in the Office of the Vice-Dean, Undergraduate and the Centre for International Experience has been meeting with chairs and directors over the past weeks to promote international exchanges.

### **(c) Alumni Engagement**

The Dean recently travelled to Hong Kong and will be visiting Singapore and Taiwan in the near future, reengaging in alumni activities that were put on hold in 2019 due to Covid.

### **(d) Status of Current Chairs and Directors Searches**

Search advisory committees for the director of Biomedical Engineering and the chairs of Engineering Science and Mechanical & Industrial Engineering have been announced. Nominations have recently closed for the Civil & Mineral Engineering and Studies in Transdisciplinary Engineering Education & Practice search advisory committees, and the committee memberships will be announced in the near future. All are encouraged to provide input to committee members or to the Dean regarding these important roles.

### **(e) EMHSeed and XSeed Call for Proposals**

The 2023-2025 Joint EMHSeed and XSeed funding program is accepting applications until March 6, 2023. Contact the Office of the Vice Dean, Research office with any questions.

The Dean acknowledged the chairs and directors as we head into budgeting season. There will be challenging times ahead for the University in general as we start to look into revenue streams.

The Speaker thanked the Dean for his report.

The following items were endorsed by the Executive Committee of Faculty Council at its February 7 meeting and are for Council's approval.

## **7. Certificate in Justice, Equity, Diversity and Inclusion**

Dionne Aleman, Associate Dean, Cross-Disciplinary Programs, presented Report 3732 Revised, a proposal to create a Certificate in Justice, Equity, Diversity and Inclusion. She thanked Mikhail Burke, Associate Director, Access & Inclusive Pedagogy in FASE during the development of this proposal for his significant contributions and support. The Speaker also thanked Mr. Burke for helping our Faculty take the lead in this area at the University.

At the conclusion of the presentation, the following regular motion was moved and seconded –

THAT a Certificate in Justice, Equity, Diversity and Inclusion in Engineering, as described in Report 3732 Revised, be approved effective September 2023.

Members discussed plans for rolling out the certificate more broadly, both within the University and to international alumni. The certificate is of interest to the Faculty of Arts & Science and could be a future possibility for an Engineering microcredential. It also ties in with international collaborations and exchange programs; students taking the certificate will be encouraged to go on exchange and we welcome incoming exchange students.

Members also discussed plans to expand the engineering course options, as there are currently only one or two in the certificate. The Cross-Disciplinary Programs Office considers these courses as a starting point and plans to grow the certificate and add courses, for example, from ISTEP.

The motion was carried.

## **8. Session Dates for the 2023-2024 Academic Year**

Evan Bentz, Chair of the Undergraduate Curriculum Committee, presented Report 3735 Revised, session dates for 2023-2024. He noted an error in the report that lists the last day of the fall term as December 7, when it should be December 6. The report posted on the Faculty Council webpage will reflect this correction. Professor Bentz also noted that session dates may be set by the University in the future, so this may be the last time the FASE session dates are set solely by the Undergraduate Curriculum Committee.

At the conclusion of the presentation, the following regular motion was moved and seconded –

THAT the session dates for the 2023-2024 academic year be approved as described in Report 3735 Revised.

There was no discussion and the motion was carried.



## 9. Curriculum Changes for the 2023-2024 Academic Year

Evan Bentz, Chair of the Undergraduate Curriculum Committee, presented Report 3736, proposed curriculum changes affecting the Chemical & Applied Chemistry department, the Mechanical & Industrial Engineering department, Cross-Disciplinary Programs and the Electrical & Computer Engineering department, which has included its graduate attributes.

At the conclusion of the presentation, the following regular motion was moved and seconded –

THAT the proposed curriculum changes for the 2023-2024 academic year, as described in Report 3736, be approved.

There was no discussion and the motion was carried.

## 10. Faculty of Applied Science & Engineering Best Practices for Assessing Teaching Effectiveness in PTR Decisions

Because *Report 3733 Revised: FASE Best Practices for Assessing Teaching Effectiveness in PTR Decisions* was not distributed to Council within the required 14 days in advance of the February 27 meeting as required by Section B3.2 of our Bylaws, a motion to allow the report for discussion and vote at the meeting was duly moved, seconded and carried.

Elodie Passeport, Chair of the Teaching Methods & Resources Committee, presented Report 3733 Revised. The report promotes best practices and clarifies what constitutes teaching effectiveness for PTR. It is meant to guide both members of faculty undergoing PTR as well as PTR committees. Professor Passeport described the broad consultations that were undertaken and said that some minor feedback was incorporated into the report. She reminded Council that this report is based on two longer source documents: the *Faculty's Guidelines for the Assessment of Effectiveness of Teaching in Tenure, Continuing Status and Promotion Decisions* (GAET), that was approved by Council in April 2022, and the *U of T Academic Administrative Procedures Manual* (AAPM).

At the conclusion of the presentation, the following regular motion was moved and seconded –

THAT the *FASE Best Practices for Assessing Teaching Effectiveness in PTR Decisions*, as described in Report 3733 Revised, be approved effective immediately.

During discussions, Professor Elodie confirmed that faculty are able to include comments, including student feedback, from course evaluations in their teaching evaluations. It was also confirmed that teaching evaluations are not and never have been mandatory.

Members also discussed the evaluation of teaching for female faculty. There is broad but contradictory evidence in the literature which states that there is an imposed, implicit bias against female faculty – especially junior – that is most evident when students and the

professoriate are predominantly male and when the subject being taught is mostly technical in nature. These elements are present in our Faculty.

The motion was carried.

## **11. Reports for Information**

The following reports were approved by the Executive Committee of Council at its February 7 meeting and are for Council's information.

### **(a) Engineering Graduate Education Committee Update**

Marianne Hatzopoulou, Chair of the Engineering Graduate Education Committee, presented Report 3734, which lists new courses approved in BME and a course name change to APS1035.

There was no discussion and the report was received for information.

### **(b) Default Selection of Courses Marked EXTRA**

Daniel Posen, Chair of the Undergraduate Assessment Committee, presented Report 3738, a revision of current academic regulation Section VIII, subsection 9, "Designating Credit Courses as Extra" to create a policy to determine which course(s) can be maintained for credit when it is discovered retroactively that a student has too many courses for their degree.

A Council member pointed out that this proposal was approved a year or two ago by the Undergraduate Assessment Committee, but it did not go through governance at the time.

The report was received for information.

### **(c) Clarification of Policy Regarding Return of Graded Work Prior to Drop Deadline**

Daniel Posen, Chair of the Undergraduate Assessment Committee, presented Report 3739, which proposes to revise current academic regulation Section XI, subsection 4a, "Grading Policies" to state that it is acceptable to meet the policy by returning multiple pieces of work cumulatively worth at least 10% of a student's performance prior to the last day for withdrawal from the course without academic penalty, and that the policy applies to the class overall rather than each individual student (e.g., if a student misses the midterm due to illness, there may be no graded work to return prior to the deadline).

There was no discussion and the report was received for information.

## **12. Revision of Teaching Methods & Resources Committee Manual**

The Speaker explained that standing committee manuals now require approval of only the relevant committee and the Speaker of Council, and are reported to Council and posted on

the Council webpage for information. They are not voted on by Council to receive for information.

Elodie Passeport, Chair of the Teaching Methods & Resources Committee, presented the committee's updated manual. There were no questions.

### **13. Other Business**

Greg Evans brought the upcoming Iron Ring Ceremony to Council's attention, mentioning that the wording of the ceremony has been revised to remove dated and offensive language but that further progress can be made. He asked that students undergoing the ceremony note what can be improved and provide their feedback.

There was no other business.

### **14. Date of Next Meeting**

The next and final Faculty Council meeting of the academic year is on April 26, 2023.

### **15. Adjournment**

The meeting was adjourned at 1:38 pm.

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