



**Minutes of the Faculty Council
Meeting of December 18, 2018
Michael E. Charles Council Chamber (GB 202)**

PRESENT: Doug Reeve (Speaker), Grant Allen, Maedeh Amirmaleki, Cristina Amon (Dean), Jason Anderson, Susan Andrews, Julie Audet, Giselle Azimi, Tim Bender, Evan Bentz, Markus Busmann, Ariel Chan, Warren Chan, Hai-Ling Margaret Cheng, Jim Courtney, Chris Damaren, Jim Davis, Khuong Doan, Stark Draper, Greg Evans, Carolyn Farrell, Zahir Firoze, Jason Foster, Diane Giang, Frank Gu, Krisztina Harmath, Benjamin Hatton, Peter Herman, Ali Hooshyar, M. Reza Iravani, Robert Irish, Yew Meng Khaw, Dawn Kilkenny-Rocheleau, Penny Kinnear, Don Kirk, Frank Kschischang, Deepa Kundur, Elias Kyriacou, David Lie, Antonio Liscidini, Manfredi Maggiore, Paul Malozewski, Elham Marzi, Naomi Matsuura, Susan McCahan, Paul Milgram, Emily Moore, Farid Najm, Shivani Nathoo, Graeme Norval, Vladimiro Papangelakis, Doug Perovic, David Philpott, Nelly Pietropaolo, Jonathan Rocheleau, Lisa Romkey, Ronauq Sabharwal, Patricia Sheridan, Brent Sleep, Craig Steeves, Kenneth Tallman, Zeb Tate, Mindy Thuna, Deborah Tihanyi, Hamid Timorabadi, Olev Trass, Chirag Variawa, Alvin Virya, Linda Wu, Mitchell Zak, Yu Zou

REGRETS: Ravi Adve, Raunaq Bagchi, Joe Baptista, Chris Bouwmeester, Karen Chu, Ramin Farnood, Jennifer Hsu, Claudia Lutfallah, Kristina Ma, Mahyar Mozaffari, Elodie Passeport

GUESTS: Helen Bright, Chris Brown, Mikhail Burke, Emzhei Chen, Dani Couture, Leanne Dawkins, Sonia de Buglio, Cathy Grilo, Cori Hanson, Andrew Kidd, Tracey Medeiros, Marit Mitchell, J.D. Muir, Don Newton, Dan Pettigrew, Allison Van Beek, Geoff Wichert, Caroline Ziegler (Secretary)

1. Speaker's Welcome and Adoption of the Agenda

Council Speaker Doug Reeve welcomed members to the second Faculty Council meeting of the 2018-2019 academic year and acknowledged the university's use of traditional land.

The Speaker reflected on recent history of the Faculty, in particular, high citation rates among our professors. Five highly-cited papers were noted: *Factor graphs and the sum-product algorithm*, by Frank R. Kschischang, Brendan J. Frey and Hans-Andrea Loeliger (2001) has been cited 3,600 times, the most by current members of the Faculty. *Clustering by passing messages between data points*, by Brendan J. Frey and Delbert Dueck (2007), has been cited 3,200 times; *Determining the size and shape dependence of gold nanoparticle uptake into mammalian cells*, by B. Devika Chithrani, Arezou A. Ghazani and Warren C.W. Chan (2006), has been cited 2,700 times; *Probing the cytotoxicity of semiconductor quantum dots*, by Warren C.W. Chan and co-authors (2004), has been cited 2,500 times; and *Ontologies: Principles, methods and applications* by Mike Uschold and Michael Gruninger (1996), has been cited 2,000 times. In comparison, Northrope Fry's *Anatomy of*

Criticism (1957), has been cited 12,000 times, and Marshall McLuhan's *Understanding Media* (1964) has been cited 28,000 times. The most cited paper on record, *Protein measurement with the Folin phenol reagent*, by O.H. Lowry, N.J. Rosebrough, A.L. Farr and R.J. Randall (1951), has been cited over 330,000 times.

The agenda and documents were distributed on December 5, 2018. The minutes of the October 31, 2018 Faculty Council meeting were distributed on December 11, 2018 and the memorial tribute to Professor Emeritus Bangalore Ramaswami was distributed on December 17, 2018.

The Speaker proposed two amendments to the previously-circulated agenda. It incorrectly included Report 3605 Revised: Major Changes for the 2019-2020 Academic Year as a report for information, whereas it should have been listed as a report for approval. An update from Susan McCahan, Vice-Provost, Academic and Vice-Provost, Innovations in Undergraduate Education, on course evaluations was added as a discussion item.

On a motion duly moved, seconded and carried, it was resolved –

THAT the agenda be adopted as amended.

2. Introduction of New Faculty Members

The following new faculty members were introduced by their chairs and welcomed to Council: Frank Gu of the Department of Chemical Engineering and Applied Chemistry, and Mohini Sain of the Department of Mechanical and Industrial Engineering.

3. Adoption of the Minutes of Previous Meeting

An error was pointed out in the minutes of the October 31, 2018 meeting: Elias Kyriacou was omitted from the meeting attendance. This will be corrected in the version posted on the Faculty Council website.

On a regular motion duly moved, seconded and carried, it was resolved –

THAT the minutes of the meeting of October 31, 2018 be approved as amended.

4. Memorial Tribute to Professor Emeritus Bangalore Ramaswami

Doug Perovic of the Department of Materials Science and Engineering read the following memorial tribute.

Be it resolved –

THAT the Council of the Faculty of Applied Science and Engineering record with deep regret the death on November 29, 2018 of Professor Bangalore Ramaswami.

Bangalore Ramaswami's early education was in Bangalore, India. He received a BSc Honours Degree in Physics from Mysore University, followed by a DIISc in Metallurgy from the Indian Institute of Science. At that point, he earned a scholarship to attend Harvard University. He obtained both an MA and a PhD in Applied Physics from Harvard University.

In 1963, he joined the Department of Metallurgy and Materials Science at the University of Toronto as a faculty member. His research was on the mechanical properties of metal alloys, more specifically the fracture and fatigue of copper based alloys and other systems.

Professor Ramaswami was a great help to many of our students over many years and to the Department, particularly during the years he served as Associate Chair. He was a lovely man and will always be remembered with great fondness by all who knew him.

Students who were privileged to have Professor Ramaswami as an instructor and graduate research supervisor remember him as one of the best lecturers and role models in MSE. His lectures were crystal clear, incredibly well structured with a perfect sense of timing in delivery. He taught graduate students how to self-critique their own data, to weigh various methodologies and interpretations, and how to write technically and communicate the salient points to others. Present day students in MSE continue to benefit from the principles he so well engrained in former students who went on to become faculty members in the department.

Professor Ramaswami was always a quiet, well-spoken professional... but his silence spoke volumes. He never had to raise his voice to make a point, he always remained collegial, but when he spoke, he commanded the attention and respect of all those around him. His beliefs in Buddhism influenced the career paths of others, as he often encouraged and motivated students to channel their research for the good of all on the planet before environmental engineering and sustainable development became commonplace in our curricula.

Professor Ramaswami's knowledge was so deep and widespread and his attention to detail was second to none. Evidence of this can be found in virtually all of his books donated to members of MSE upon his retirement. Professor Ramaswami found and corrected seemingly every error in the equations or wording, from cover to cover in all books, including classic texts written by giants of science and engineering such as Gibbs, Fermi and Schrodinger, to name a few.

During his career, Professor Ramaswami was recognized by being named a Fellow of the American Association for the Advancement of Science (AAAS), and of the American Society for Metals (ASM International).

He retired from the University in 1994.

Be it further resolved –

THAT this tribute to Professor Ramaswami 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 stood to observe one minute of silence in honour of Professor Emeritus Bangalore Ramaswami.

5. Report of the Dean

Dean Amon welcomed members to Faculty Council and provided the following remarks.

(a) Academic Leadership

Jun Nogami's second term as chair of the Department of Materials Science and Engineering ends on June 30, 2019 and he is ineligible for reappointment. We are grateful for his tremendous leadership. In accordance with university policy, we have begun the process of striking an Advisory Committee to the Dean on the appointment of a new chair.

A cyclical external review of MSE and its undergraduate and graduate programs has been scheduled for February 25-26, 2019. Four eminent colleagues have agreed to form the review team: Dr. George Demopoulos of McGill University, Dr. Amit Misra of the University of Michigan, Dr. Angus Rockett of the Colorado School of Mines, and Dean Mary Wells of Guelph University.

(b) Engineering and Computer Science Library Renovations

Our Faculty, the Faculty of Arts and Science, and the University of Toronto Libraries (UTL) are contributing funding to complete essential improvements to the HVAC system in the Sandford Fleming Building. This will enable our Faculty and UTL to move forward with the first phase of library renovations, which will include converting book and shelf space to student study space. Books will be transferred to a facility near UTIAS and can be retrieved upon demand within 24 hours.

(c) Faculty Research Update

Ramin Farnood, Vice-Dean Research, and our Corporate and Foundation Partnerships office are to be congratulated on hosting the fifth annual industry partners awards ceremony and reception on November 14, 2019. This year's event was particularly successful, with the largest attendance of over 85 industry partners and 20 government representatives participating.

Our efforts to expand outreach to industry are beginning to yield excellent results, with collaborations now encompassing more than 400 external partnerships. The Corporate and Foundation Partnerships office has developed a series of targeted marketing materials to highlight the six innovation clusters described in our Academic Plan, in advanced manufacturing, data analytics/artificial intelligence, human health, robotics, sustainability, and water. Print and online material is available for presentations and visits.

(d) Administrative Staff Awards

We are now accepting nominations for the Faculty's administrative staff awards. Departments, divisions and institutes are encouraged to submit nominations for their richly deserving colleagues, and administrative staff are welcome to self-nominate. Previously unsuccessful

nomination packages may be resubmitted, but supplementary materials must be current. Nomination packages should be forwarded to the Director, Awards and Honours, by February 4, 2019.

(e) Advisory Committee on the Appointment of Director, Institute for Studies in Transdisciplinary Engineering Education and Practice

An interim director of the Institute for Studies in Transdisciplinary Engineering Education and Practice (ISTEP) was appointed upon the launch of the Institute in July 2018. In accordance with university policy, we are now beginning the process to strike an Advisory Committee on the appointment of an ongoing director. We invited nominations for members of the Advisory Committee to be submitted by December 19, 2018, and after the Advisory Committee has been ratified by the Provost, we will solicit recommendations regarding the appointment of members. The search is expected to commence in early 2019.

(f) Director, Diversity, Inclusivity and Professionalism

We have initiated a search for the newly-created position of Director, Diversity, Inclusion and Professionalism. The job posting closed on December 13, 2018, and candidates will be interviewed this week and in early January. This role will support a number of inclusivity and diversity initiatives, including those regarding Indigenous and black communities, to ensure that every member of our engineering community is afforded the right to study and work in an environment free of biases based on race, ancestry, place of origin, colour, ethnic origin, citizenship or creed, sexual diversity, age, gender and ability. Working closely and collaboratively with the Vice-Dean, First Year, and interfacing with organizations such as Professional Engineers Ontario and the Canadian Council of Professional Engineers, the incumbent will also implement training and awareness initiatives to prepare students on critical aspects of ethics and professionalism in engineering.

(g) Governance Committee Vacancies

In early 2019, the university will hold elections for vacant teaching staff and administrative staff positions on Governing Council and the Academic Board. These are three-year terms that begin on July 1, 2019. Markus Bussmann is completing his second term on the Academic Board and is eligible – and encouraged – to run for a third term. It is important that our Faculty be represented on these governance bodies, and those who are interested are encouraged to seek nomination.

The Dean closed by wishing Council a happy holiday and restful break.

The Speaker thanked Dean Amon for her report.

6. Major Curriculum Changes for the 2019-2020 Academic Year

The following item will be considered by a regular motion, requiring a simple majority of members present and voting to carry.

Evan Bentz, chair of the Undergraduate Curriculum Committee, presented Report 3605 Revised, curriculum changes affecting cross-disciplinary minors and certificates, and undergraduate

programs in Chemical Engineering and Applied Chemistry, Electrical and Computer Engineering, Engineering Science, and Mechanical and Industrial Engineering. Professor Bentz reminded faculty to address graduate attributes as they develop curriculum, and invited associate chairs to share any ideas they may have on how to improve the graduate attribute and continuous improvement process with their department chairs.

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

THAT the proposed curriculum changes for the 2019-2020 academic year, as described in Report 3605 Revised, be approved.

There were no questions and the motion was carried.

7. Reports and Recommendations of Standing Committees

The following reports were approved by the Executive Committee of Faculty Council at its November 29, 2018 meeting and are being presented for Council's information.

(a) Engineering Graduate Education Committee: Update

Julie Audet, Vice-Dean, Graduate Studies and chair of the Engineering Graduate Education Committee, presented Report 3606 Revised, minor modifications to the emphasis in Analytics and the emphasis in Sustainable Aviation, and a course code change for AER1514: Mobile Robotics.

There were no questions and the report was received for information.

(b) Admissions Committee: Admissions Cycle 2018

Jason Foster, chair of the Admissions Committee, presented Report 3608, describing applications for admissions, offers of admission, registration figures, and characteristics of the first year class for the period November 1, 2017 to November 1, 2018.

Members discussed the fact that there has been a yearly increase in the number of students who apply to our programs. Even though the number of Ontario high school graduates has been in decline due to demographics, the number of international students has increased.

The report was received for information.

(c) Teaching Methods and Resources Committee: Goals for 2018-2019

Lisa Romkey, chair of the Teaching Methods and Resources Committee, presented Report 3609, the committee's goals for the academic year. These include developing best practices for onboarding new faculty members; creating recommendations for department chairs regarding the use of teaching evaluations in promotion, tenure and PTR; reviewing online course evaluations; and investigating the link between graduate attribute assessment types and knowledge/skill

development in engineering and suggesting alternatives to tests and exams. Professor Romkey also reminded departments to submit their nominations for faculty teaching awards by the end of January.

There were no questions and the report was received for information.

(d) Admissions Committee: Goals for 2018-2019

Jason Foster, chair of the Admissions Committee, presented Report 3610. After reviewing the committee's progress towards their goals from the previous year, he described their 2018-2019 goals as updating the report template used for submissions to the Executive Committee and Faculty Council; developing reports for committee members interested in data analytics; and assessing and modifying the admissions process to promote equity.

Members discussed a policy that our Faculty will implement for the next admissions cycle that will require international students to make a \$2,000 deposit toward their tuition. This is to discourage students from accepting offers then not coming, thus taking spots that could have been offered to other students. It was noted that although processing money transfers in some countries of origin can be problematic, students can instead make the deposit using a credit card.

In response to a question, Professor Foster said that departments make their own judgment calls on how to weigh extracurricular and curricular activities, and that the Admissions Committee would not attempt to standardize this throughout the Faculty or develop guidelines.

Professor Foster confirmed that admissions assessors receive equity, diversity and inclusion training to eliminate bias during the admissions process.

The report was received for information.

8. Report of the Academic Appeals Board, 2017-2018

Jason Foster, chair of the Academic Appeals Board, presented Report 3611, the Board's annual report. The Board hears appeals of undergraduate students against decisions of the standing committees of Council relating to petitions for exemptions from the application of academic regulations or standards. The Board's decisions are final within the Faculty, but students may appeal its decisions to the Academic Appeals Committee of the Governing Council.

The overall number of appeals has dropped over the years. In the 2017-2018 academic year, the Board considered 10 appeals on decisions made by the Examinations Committee, and found cause to intervene in eight of the appeals. Approximately 80 per cent of rulings are in favour of appellants because new information is submitted.

The Board aims to expand the diversity of its membership, in particular, by increasing the number of female student members. It will update its manual to require that its hearing panels include at least one faculty member. It will clarify whether hearings can be recorded, and will explore formal mechanisms in which knowledge can be transferred to other standing committees of Council.

Members discussed whether it would be advantageous for the Board to maintain records of past decisions to ensure, for example, that unconscious bias has not been introduced in rulings. Professor Foster stated that it is a fundamental principle of the Board to regard appeals as individual cases, and that the process not be precedent-based. The Board will, however, work with the Engineering Equity, Diversity and Inclusion Action Group to achieve balance between these two positions.

The report was received for information.

9. Discussion Items

The following items are for discussion purposes only.

(a) Update on Amendments to the Faculty's Constitution and Bylaws

Doug Reeve, chair of the Working Group to Review the Faculty's Constitution and Bylaws, discussed the group's mandate and updated Council on its progress. The working group was appointed in July 2018 and has met eight times during the fall to discuss potential amendments to the constitution and bylaws. Some updates are required by Governing Council, such as the incorporation of new language regarding teaching-stream faculty, and the delegation of authority regarding for-credit certificates. Other changes have been to modernize the documents and, where possible, bring them into alignment with university best practices regarding language and format.

Examples of proposed changes include the way in which members are appointed to Council, although the number of individuals representing each constituent group will remain the same. The working group will also recommend that the Speaker's term be increased from one year to two, to sustain institutional history. Another recommendation will be to remove the maximum number of visitors allowed at a Council meeting and the requirement that they sit in a designated area, as these are not reasonable, required, nor currently enforced. The working group will also recommend that quorum for standing committees be increased from one-third of members, to 50 per cent.

The working group has held consultations with Council's constituent groups, namely, teaching staff, administrative staff, alumni, undergraduate students, and graduate students. Proposed amendments to the constitution and bylaws have been described in change-history documents, which will be posted on the Council website through January 2019 for review. There will also be a town hall on January 30 for those interested in submitting feedback in person. The working group will bring the proposed amendments forward for approval at Council's April 11, 2019 meeting. If approved by Council and by the University's Academic Board, the new constitution and bylaws will be in effect for the 2019-2020 academic year.

During discussions, Professor Reeve confirmed that a two-thirds majority of Council members present and voting will be required to approve changes to the constitution.

A member who had been involved in developing the original constitution asked if our Faculty will continue to have precedence over the university's recommendations. Professor Reeve said that university governance is required to approve any changes, however, we will consult with the Provost's office and the office of Governing Council and respond to their comments should our proposed changes differ.

A member of one of the Faculty's standing committee said that it is sometimes difficult for his committee to reach quorum of one-third of members, especially when including ex officio members who rarely attend meetings. He asked if the recommendation to increase quorum might be problematic. Another member suggested that this could be mitigated if students were permitted to send designates should they be unable to attend a meeting. Another member pointed out there are large constituencies from which committee members can be drawn and members who are chronically absent from meetings should be replaced. Professor Reeve will take these comments under advisement, and said that the role of the Speaker can be expanded to meet with standing committee chairs on a regular basis to discuss this and other governance-related challenges.

(b) Update on Course Evaluations

Susan McCahan, Vice-Provost, Academic Programs and Vice-Provost, Innovations in Undergraduate Education, updated Council on the evidence-based centralized Cascaded Course Evaluation Framework (CCEF) used by the university to collect course feedback from students. The framework is based on a series of broad to granular assessments of teaching priorities at the institutional, divisional/Faculty, departmental, and instructor levels.

Professor McCahan discussed several findings of a recently-published validation study, *University of Toronto's Cascaded Course Evaluation Framework: Validation Study of the Institutional Composite Mean (ICM)*. The study focused on assessing the reliability and validity of the ICM, which represents the average of five core institutional items that are included on all course evaluation surveys that use the framework. These items are intended to capture five key teaching and learning priorities at the University of Toronto: "Students are engaged", "Students gain knowledge", "Atmosphere promotes learning", "Components improve understanding", and "Students have an opportunity to demonstrate learning". The study is available on the Centre for Teaching Support & Innovation (CTSI) website, along with the updated *University of Toronto Course Evaluation Interpretation Guidelines for Academic Administrators*, which helps interpret course evaluation reports in order to assess teaching.

Students who begin the course surveys can save their input and complete the form another time. Statistics show there is a high response rate when this is allowed. Once the form is submitted, however, it is too late to make any changes.

Some evaluation questions do not apply to all courses. Examples are the capstone courses, which are exempted from the evaluation framework because of the 1:1 correlation between instructors and students, and courses in Medicine and Dentistry, where the instructor is a clinician. The framework was built to be university-wide and will be customized over time.

When evolving the framework, it will be important to look at aspects of former course evaluation systems and consider their context. To ensure that the contexts we think are being measured are actually being measured, we can also examine qualitative data and look, for example, for instances where language that is homophobic, sexist or racist is being used. We are, however, finding virtually none of this.

Teaching staff can opt out of sharing their data online, but it is good if a number of our instructors do choose to share it. Instructors can use the data collected to consider teaching practices and course design. Department chairs can use the data for PTR, tenure and promotions decisions and can access more detailed reports, including longitudinal data. In the case of cross-appointed instructors, the Faculty decides during the first week of the term which chair receives the instructor's data.

CTSI can provide individual consultations and mechanisms for improvement for instructors who require support upon receiving their course evaluation data.

10. Other Business

There was no other business.

11. Date of Next Meeting

The next Faculty Council meeting is on February 27, 2019.

12. Adjournment

The meeting was adjourned at 1:55 p.m.

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