



**Minutes of the Faculty Council Meeting of
April 12, 2016 at 12:10 p.m.
Michael E. Charles Council Chamber (GB 202)**

PRESENT

Doug Reeve (Speaker)
Edgar Acosta
Grant Allen
Chris Ambidge
Cristina Amon (Dean)
Susan Andrews
Jason Bazylak
J. Christopher Beck
Sharon Brown
Markus Bussmann
Alan Chong
Tom Coyle
Kevin Dancy
Jim Davis
Levente Diosady
Khuong Doan
Phil Fan
Jason Foster
Krisztina Harmath
Marianne Hatzopoulou
M. Reza Iravani
David James
Ezzat Jaroudi
Dawn Kilkenny
Don Kirk
Mark Kortschot
Frank Kschischang
Elias Kyriacou
David Lie
Antonio Liscidini
Don MacMillan
Farid Najm
Jun Nogami
Graeme Norval
Jon Albert Obnamia
Jeffrey Packer
Nelly Pietropaolo
Jonathan Rocheleau
Lisa Romkey
Scott Sanner
Amer Shalaby
Ali Sheikholeslami
Jeffrey Siegel

Chandra Veer Singh
Brent Sleep
Micah Stickel
Pierre Sullivan
Steven Thorpe
Deborah Tihanyi
Olev Trass
Shahrokh Valaee
David Yang
Christopher Yip
Safwat Zaky
David Zingg
Jean Zu

REGRETS

John Harrison
Bryan Karney
Milan Maljković
Alexander McLean
Elodie Passeport
Ted Sargent
Samantha Stuart
David Yang

GUESTS

Helen Bright
Chris Brown
Dani Couture
Christina da Rocha-Feeley
Michelle Deeton
Leslie Grife
Cori Hanson
Oliana Harris
Oghosa Igbinakenzua
Susan Lee
Anthony Morra
Ann Perry
Dan Pettigrew
Catherine Riddell
Alex Tichine
Geoff Wichert
Yi Zhu
Ziegler Caroline (Secretary)

1. Speaker's Welcome and Approval of Agenda

Council Speaker Doug Reeve thanked members joining the final Faculty Council meeting of the 2015-2016 academic year and welcomed all present, in particular student members of Council.

The meeting agenda and reports were circulated on March 31. Report 3500, Faculty Council meeting dates for 2016-2017, and Report 3501, the appointments to standing committees, were distributed on April 6. Report 3505, the Report of the Engineering Alumni Honours & Awards Committee, which had been embargoed, was distributed on April 7.

The minutes from the February 29 Faculty Council meeting will be brought forward at the first meeting of Council next fall, and the item was removed from the agenda.

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

THAT the agenda be approved as amended.

2. Introduction of New Faculty

Jean Zu, Chair of the Department of Mechanical & Industrial Engineering, introduced her new faculty member, Scott Sanner.

3. Memorial Tribute

Jean Zu read the following memorial tribute in honour of Professor Emeritus Abdo Abdelmessih.

Be it resolved –

THAT the Council of the Faculty of Applied Science & Engineering record with deep regret the death on January 3, 2016 of Professor Abdo Abdelmessih.

Professor Abdo Abdelmessih was born in Khartoum, Sudan on May 25, 1932. Abdo graduated with a BSc in Mechanical Engineering from Cairo University and completed post-graduate studies, taking courses at MIT, UC Berkeley and Oklahoma State University, where he earned his MS in Mechanical Engineering. After moving to Toronto with his wife in 1963, Abdo earned his PhD in Mechanical Engineering at the University of Toronto and went on to become a full professor in the Department of Mechanical & Industrial Engineering until his retirement in 1997. Abdo touched the lives and minds of over 4000 engineering students during his 31-year tenure of dedicated excellence in teaching and research in the area of heat transfer. He supervised many undergraduate, post-graduate and doctoral students and post-doctoral fellows, and was the author of over 70 scientific papers and publications. He gave numerous scholarly addresses in Canada, the US and Europe and acted as a referee for many scientific journals. Abdo was loved and respected by colleagues and students alike.

Be it further resolved –

THAT a record of his service be inscribed in the minutes of this Council, and that a copy be sent to his family as an expression of the respect and gratitude of the members of Council.

The Speaker assumed concurrence with these resolutions, and Council stood to observe one minute of silence in honour of Professor Abdelmessih.

4. Dean's Report

Dean Cristina Amon provided the following remarks.

(a) CEIE Update

We continue to make progress on both the construction of the building and planning of interior spaces although we are a few months behind schedule. By the time of our next Faculty Council meeting in October, we hope to be several stories above ground.

As mentioned at the last Council meeting, we have formed four implementation working teams to assist with the detailed planning. The groups are meeting actively and their work should be completed in May.

A related working group has been created to inventory and audit our existing maker spaces in the engineering precinct, such as the machine shop and small woodworking shop in Mechanical Engineering, and the IBBME design studio in the basement of the Mining Building. The working group will review the current spaces as well as the available equipment and capabilities, level and hours of access, and training required to use the equipment. We will use this information to make decisions on space and any additional equipment that may be required to enhance the experiential learning that will be offered in the CEIE.

At the last Council meeting, the Dean shared the wonderful news that the Ontario government has allocated \$15M in the 2016 budget to the CEIE. This, coupled with donations from alumni and investments from the Faculty and University, has ensured that we have the funds needed to be mortgage free when the building opens. It has also provided us with an opportunity to invest some of the money originally earmarked for the building in other necessary infrastructure projects. In the next few weeks, the Dean will be issuing a call for proposals for large-scale infrastructure projects, with a total pool of approximately \$20-30M. Costs will be shared equally between the departments and the Faculty, and the process will be handled in a similar manner to the Dean's Strategic Fund. This new fund, coupled with the money being invested by the federal government to accelerate infrastructure projects at universities and colleges across Canada, will enable us to make significant headway over the next two years to improve our facilities.

(b) External Review

Our Faculty's external review will be scheduled for this fall, with the writing of the self-study underway. We have begun seeking input into the self-study and met with student leaders and a diverse group of undergraduate students last Thursday to obtain their feedback on a variety of topics. We are working with the Engineering Society to create further opportunities for students to provide input.

A website is being developed to house information related to the review, and Council members will be kept up to date on further consultation opportunities.

(c) Celebrating Engineering Excellence

The ninth annual Celebrating Engineering Excellence reception will be held on Thursday, April 14 from 4:00-6:00 p.m. in GB202. It is an excellent opportunity for us to acknowledge the contributions of our teaching and administrative colleagues, and a wonderful celebration of the end of the academic year. We look forward to seeing staff and faculty there.

(d) Engineering Society

The Engineering Society elected its 2016-2017 executive last week. Dean Amon thanked past president Ernesto Diaz Lozano Patiño and his executive team for their leadership and representation of student interests at Faculty Council this past year.

The Engineering Society and Faculty had an extremely active and productive year, which included a contest for new verses for the Godiva hymn and streamlining processes for the Engineering Society endowment fund.

The Dean also acknowledged Oghosa Igbinakenzua, the former Vice-President, Academic, for his tremendous efforts in increasing student involvement in academic advocacy.

(e) Convocation

There will be three spring convocation ceremonies on June 8 and 9 this year to accommodate the growing number of Engineering graduates. All are encouraged to attend their department, division or institute's convocation reception for students and guests, to welcome our new alumni and meet their families.

There were no questions for the Dean.

5. Business Arising from the Meeting of February 29, 2016

Don MacMillan, Faculty Registrar, updated Council on the implementation of Report 3492, a change in the Faculty's probation policy, which was approved at the February 29 Council meeting. The changes, which will ease the requirements for students to lift probation and remove unnecessary stresses as they advance in their program, have been made retroactive to September 2016, affecting 291 student records.

6. New Coats and Jackets Examination Policy

Pierre Sullivan, Chair of the Examinations Committee, presented Report 3491 Revised, a proposal to adopt a policy requiring students in examination rooms to place their coats and jackets on the back of their chair instead of storing them at the back of the exam room. This is modelled on a policy in Arts and Science and will ensure that our students are subject to the same regulation when writing exams in either division. The proposed Engineering policy further requires students to remove their watches or timepieces and place them on their desk during exams.

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

THAT, beginning in the Fall 2016 term, the Faculty of Applied Science & Engineering will change Regulation X.2.e to:

All coats and jackets should be placed on the back of each candidate's chair. All notes and books, pencil cases, turned-off cell phones, laptops, purses and other unauthorized aids should be stored inside a candidate's knapsack or large bag, which should then be closed securely and placed under candidate's chair. Candidates are required to place their watches or timepieces on the desk throughout the examination. Material placed on the desk may be inspected by invigilators. Candidates are NOT allowed to have a pencil case on their desk and any pencil cases found on desks will be searched. Candidates are not allowed to touch their knapsack or bag or the contents until the exam is over. Candidates are not allowed to reach into the pockets or any part of their coat or jacket until the exam is over.

Members discussed how the previous practice of requiring students to store their belongings at the back of the room was a potential fire hazard and made the contents vulnerable to theft. Professor Sullivan confirmed that students must continue to store their cell phones in their knapsack or large bag, and if the phone rings, they are allowed to remove their phones from storage, identify themselves to the invigilator, and turn them off.

The motion was carried.

7. Diversity Climate Survey Terms of Reference

Edgar Acosta, Chair of the Community Affairs & Gender Issues Committee, presented Report 3499 Revised, which describes a survey to be conducted by the committee to assess the diversity of our students, faculty and staff; help identify groups facing marginalization, discrimination, disparagement or alienation; assess whether current Faculty practices and policies support the identified groups; and invite comments on specific practices and policies and potential recommendations for changes.

The report had received overall support from the Community Affairs & Gender Issues Committee, but some items proved to be somewhat contentious, such as the definition of Legal Status and whether it should include Refugee, whether First Nations should be

separate from Ethnicity and Legal Status, and whether Religion should be included because of the potential effect it could have on recruitment and hiring practices.

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

THAT the terms of reference for a Diversity Climate Survey, as described in Report 3499 Revised, be approved.

Professor Acosta confirmed that the data collected will be anonymous, and said that the committee will consult with the University's diversity office when developing the survey.

The motion was carried.

A second regular motion was moved and seconded –

THAT the Faculty of Applied Science & Engineering undertakes to develop the Diversity Climate Survey as per the terms of reference described in Report 3499 Revised.

There was no further discussion, and the motion was carried.

8. Curriculum Changes for 2016-2017 and 2017-2018

Graeme Norval, Chair of the Undergraduate Curriculum Committee, presented report 3497, curriculum changes for the next two academic years. These include changing the programming language for APS106: Fundamentals of Computer Programming from C to Python for students in CHE, CIV/MIN, MIZE and MSE; changing the contact hours for CHE353F: Engineering Biology and CHE451F: Petroleum Processing; creating a new elective, BME4XXS: Human Whole Body Biomechanics; and creating two elective courses in the Engineering Communication Program. Professor Norval pointed out that these changes will be in effect for the 2016-2017 academic year, with the exception of the Engineering Communication Program changes, which will be in effect in 2017-2018.

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

THAT the proposed curriculum changes for the 2016-2017 and 2017-2018 academic years described in Report 3497 be approved.

At a member's request, the report will be revised to reflect that BME4XXS: Human Whole Body Biomechanics is an elective in Engineering Science's biomedical systems engineering option and robotics engineering option, as well as in the biomedical engineering minor.

The motion was carried.

9. Reports and Recommendations of Standing Committees

(a) Engineering Graduate Education Committee Information Report

Markus Bussmann, Chair of the Engineering Graduate Education Committee, presented Report 3495, which includes new graduate emphases in ELITE, Global Engineering, Robotics and Mechatronics, and Identity, Privacy and Security, to replace the existing graduate certificates. Other changes described in the report include a reduction of required courses in the Faculty's Emphasis in Advanced Water Technologies and Process Design to bring it in line with the majority of our emphases, and changes to MSE's graduate calendar entry regarding the number of courses required for students fast-tracking from the MASc to the PhD program and the expectations of students transferring from MIE's MEng to MASc program.

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

10. Faculty Council Meeting Dates, 2016-2017

The Speaker presented Report 3500, the Faculty Council meeting dates for 2016-2017, which will be on October 25 and December 1, 2016 and February 28 and April 10, 2017.

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

11. Faculty Appointments to Standing Committees of Council

The Speaker presented Report 3501, appointments to the standing committees of Council and the Academic Appeals Board for the 2016-2017 academic year. A final version of this report, including the names of student members, will be distributed to Council in the fall.

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

12. Report of the Engineering Alumni Honours & Awards Committee

The chair of the Engineering Alumni Honours & Awards Committee, Safwat Zaky, thanked committee members for their work and presented Report 3505, which lists the candidates for induction into the 2016 Engineering Alumni Hall of Distinction, and recipients of the Engineering Alumni Medal, 2T5 Mid-Career Award, 7T6 Early-Career Award, Malcolm McGrath Award, L.E. (Ted) Jones Award.

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

13. Recognition of Service

Grant Allen, Chair of the Department of Chemical Engineering & Applied Chemistry, recognized the contributions made by Professor Chris Ambidge, who is retiring in July 2016.

Dean Amon acknowledged and thanked Mark Kortschot, who served as Chair of the Division of Engineering Science from 2011 to 2016, and David Zingg, who served as Director of the University of Toronto Institute for Aerospace Studies from 2006 to 2016.

Dean Amon presented Professors Ambidge, Kortschot and Zingg with gifts as tokens of the Faculty's appreciation.

14. Discussion Items

(a) Update on Course Evaluations

Lisa Romkey, Chair of the Teaching Methods & Resources Committee, updated Council on course evaluations within the Faculty.

After explaining the role of the Provostial Course Evaluation Committee and the Faculty's Teaching Methods & Resources Committee, Professor Romkey described the data from course evaluations, including pre- and post-online evaluation response rates. The pre-online response average in fall 2012 was 48 per cent and in winter 2013 was 39 per cent. By contrast, the online average in winter 2015 was 35 per cent and in fall 2015, 40 per cent. The Engineering departmental variation of online averages was 31-50 per cent, and the inter-Faculty variation was 30-51 per cent.

Professor Romkey described the Faculty's efforts to encourage students to respond to the online course evaluations, such as a marketing campaign that ran between March 26 and April 13. Other strategies to improve participation rates include allowing students time in class to complete the evaluations, providing them with specific examples of how they might benefit from the course feedback they provide, reminding them of the evaluation period, allowing instructors to ask for specific types of feedback at specific intervals during the course, and implementing the University's formative feedback system ("Blue Pulse"), which integrates ongoing online feedback with Blackboard or another course management system.

Other ideas for improving participation rates may include using leaderboards to show rates by course or program, prompting students to complete the evaluations when logging into Blackboard, or sharing data with students in a course only if a pre-determined participation rate, such as 60-70 per cent, is reached.

Trends indicate high response rates in courses with 30 or fewer students and in biomedical courses, and low participation rates in core technical courses in years two through four and in engineering economics. Trends also show a correlation between Question 15 ("What is your overall rating of the instructor as a teacher?") and Question 3 ("The instructor [name] created an atmosphere that was conducive to my learning"), and lower scores on question 13 ("The feedback I received on tests, assignments, labs and/or projects provided guidance on how to improve my understanding of course materials").

There are currently no plans for the Teaching Methods & Resources Committee to move TA evaluations online because of the poor response rate for course evaluations, but the committee is considering efforts to improve the Faculty's existing paper-based TA evaluation process. This may include streamlining the process, clarifying the role of each TA listed in each course, and considering new (validated) questions from the University's question bank. The Teaching Methods & Resources Committee will seek feedback from the Faculty on the TA evaluation framework in the fall of 2016, and hopes to implement the changes in December.

Members discussed the necessity of making changes to the TA evaluations Faculty-wide, and the possibility of allowing students 15 minutes in class to complete the evaluations on their phones. A member pointed out that students are sometimes asked the same questions multiple times. Professor Romkey confirmed that the University is not willing to tie grades to the completion of evaluations.

Professor Romkey invited members to forward additional questions and comments to her.

(b) Update on Graduate Attributes and Undergraduate Curriculum

Graeme Norval, Chair of the Undergraduate Curriculum Committee (UCC), updated Council on the committee's plans to bring forward revisions to its manual and terms of reference in the next academic year.

The UCC will recommend that it merge with the Faculty's Graduate Attributes Committee, which was created by the Vice-Dean Undergraduate in 2010 to respond to the Canadian Engineering Accreditation Board's (CEAB) developing accreditation requirements. Now that the CEAB graduate attributes system has been formalized, the day-forward monitoring of data-based curriculum change can be transferred to the UCC.

Other changes will be proposed to ensure the committee's manual reflects its current operations. These include expanding its membership to include representatives from IBBME, UTIAS, the Engineering Communication Program, the Engineering Computing Facility and the Engineering & Computer Science Library. In addition, the committee's primary responsibilities will be updated to include managing the curriculum change process and the Faculty's graduate attributes and other accreditation processes and making decisions as needed for improvements, monitoring resource allocation and usage information with the departments and divisions and Registrar's office to implement tabling and scheduling improvements, and making recommendations for changes in the amount and nature of resources available in the Faculty for course delivery.

Members discussed the upcoming 2018 accreditation visit, including the status of and access to program curriculum maps, and the evidence-based processes in place in departments to inform curriculum change. Professor Norval explained that it is up to departments to manage curriculum change for their programs as they see fit, but said that the change to core courses must be documented and based on evidence of students demonstrating their level of attainment of the CEAB's graduate attributes.

The Speaker acknowledged Professor Norval's final Council presentation as chair of the Undergraduate Curriculum Committee, a position he has held for the past six years and thanked him for his service.

(c) Use of TEAL Rooms

Micah Stickel, Chair of First Year, and Tom Coyle, Vice-Dean Undergraduate, updated Council on Technology Enhanced Active Learning (TEAL) rooms in the Faculty.

The new CEIE will contain eight 36-seat TEAL rooms offering students proven alternative course-delivery approaches through large screens offering myriad options for image display, seating that facilitates small group interaction, and ample TA assistance.

The primary focus of TEAL rooms is active learning, which contrasts with passive note-taking in a typical lecture. This typically includes group activities within a lecture, team-based and collaborative learning, and flipped/inverted learning, where pre-class preparations allow for in-class time to be used for active learning experiences. Research has shown that this method of delivery has resulted in an eight per cent increase in final exam performance in U of T's department of computer science, and that 56 per cent of engineering students found active learning classes "more interesting".

A pilot TEAL room opened in the Sandford Fleming Building in September 2014 to "test drive" the type of facilities planned for the CEIE. All are encouraged to use the room for classes that would benefit from more interactive group work, particularly as a flipped or inverted classroom. Members were reminded to consider the type of delivery planned when scheduling classes, and those interested in booking the pilot TEAL room in the Sandford Fleming Building for the 2016-2017 academic year were asked to contact the Registrar's Office by the end of April.

The use of TEAL rooms in other institutions, such as MIT, the University of Minnesota, the University of Oklahoma, and Montana State University, was described. These models include round tables that seat multiple students surrounding the instructor's work station, and whiteboards and video projectors with wall-mounted screens.

The use of TEAL rooms at U of T will require instructors to redesign some of their existing courses, and design new courses based on active learning concepts. The Faculty can encourage instructors to adopt active learning approaches by establishing a community of practice, and through the Engineering Instructional Innovation Program (EIIP), which funds proposals to create or substantially renovate a specific undergraduate course, closely related group of courses, or learning experience.

Information in today's presentation will be distributed to professors throughout the Faculty via departmental chairs and associate chairs.

15. Other Business

There was no other business.

16. Date of Next Meeting

The first Faculty Council meeting of the 2016-2017 academic year is on October 25, 2016.

17. Adjournment

The meeting was adjourned at 2:04 p.m.

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5/31/2016 3:00 PM