UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Minutes of the Faculty Council Meeting of

Thursday, November 29, 2012

12:10 – 2:00 p.m.

Michael E. Charles Council Chamber, Galbraith Building

Present:
Tony Sinclair (Speaker)
Maged Ahmed
Grant Allen
Cristina Amon (Dean)
Jason H. Anderson
Joe Baptista
Jason Bazylak
J. Christopher Beck
Sharon Brown
Markus Bussmann
Phil Byer
David Chartash
Yu-Ling Cheng
Nicholas Chin
Alan Chong
Chris Damaren
Amit Deshwar
Khuong Doan
Douglass Duffy
Elissar El-Hage
Greg J. Evans
Carolyn Farrell
Jerry Fung
Shadi Ghajar
Tabish Gilani
John Harrison
Jason Hearst
Heather Hines
Jennifer Hsu
Charles Q. Jia
Krirshan Kandiah
Bryan Karney
Penny Kinnear
Roasanna Kronfli
Matt Lattavo
Jessica Li (designate)
Peter Luo
Rishi Maharaj
Brenda McCabe
Susan McCahan
Barbara McCann
Farid Najm
Jun Nogami
Graeme Norval
Jeffrey A. Packer
Doug D. Perovic
Jane Phillips
Lisa Romkey
Michael Sabatini
Paul Santerre
Shamim A. Sheikh
Laura Shen
Brent E. Slee
Micah Stickel
Krithika Sugavanam
Kenneth Tallman
Karla Telidetzki
Frank J. Vecchio
Bo Wen Wen
Farhad Yahyaie
Mark (Guanzhou) Ye
Christopher Yi
Jean Zu

Guests:
Estina Boddie
Sonia de Buglio
Liz Do
Ishan Gupta
Cecilia Konney
Emily Meyertholen
Tom Nault
Deborah Peart
Chirag Variawa
Jiabin Wang
Geoff Wichert
Caroline Ziegler

Regrets:
Phil Anderson
Jim Dawson
Murtaza Hitawala
Ted Sargent
David Zingg

1. Welcome/Adoption of the Agenda

Council Speaker Tony Sinclair thanked members joining the second Faculty Council meeting of the 2012-2013 academic year and welcomed all present, in particular undergraduate and graduate student members. He noted that members had received the agenda and reports on November 15.

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

> THAT the agenda be adopted.

2. Approval of the Minutes of the Previous Meeting

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

> THAT the minutes of the meeting of September 7, 2012 be approved as circulated.

3. Memorial Tribute to Elaine Granatstein

The Speaker called upon Jiabin Wang, Head of the Engineering and Computer Science Library, to read the following memorial tribute to Mrs. Elaine Granatstein:

Elaine Granatstein completed her undergraduate and graduate degrees at the University of Toronto in mid-life. After obtaining her Bachelor of Arts degree, she attended the Faculty of Information and received her Masters of Library Science (MLS) in 1979.

Shortly after, Elaine began her tenure at the University of Toronto Libraries as the Engineering Reference Librarian, where she flourished, developing a deep knowledge of the library's collection and a thorough understanding of the information needs of the faculty, staff and students in Applied Science and Engineering. As she became more familiar with the discipline and its specialties, Elaine also learned about the research projects of Engineering faculty and graduate students and was able to assist them with all manner of complex reference questions, ferreting out difficult to find facts and information and obscure publications.

When her predecessor retired, Elaine became the Head of the Engineering Library. In this role, she was responsible for all aspects of the library's operations including planning and developing space and services, selecting and hiring staff, and liaising with faculty, students and other library departments on campus. She also planned and implemented orientation and library instruction programs for faculty, staff and students, and participated in the selection of journal and book purchases.

Elaine was the quintessential science librarian. Joan Leishman, recently retired UofT Deputy Chief Librarian and Director of Science Libraries, said "Elaine was quiet and unassuming but so dedicated to her work and to serving the engineering students and faculty. She defined the Engineering and Computer Science Library.

It always amazed me how she knew the collection inside out right down to specific volumes and titles in each of the various specialty areas."

Elaine had great compassion for the suffering of others, which she applied in a very practical way by helping them as she could. Toan Nghiem, who worked in the Engineering Library for several years after arriving in Canada as a refugee, sent an email upon hearing of Elaine's passing in which he said "I will always remember her as a beautiful human being. I owe so much to Elaine that I will never be able to pay back. She made all the arrangements so that I could attend engineering school while working at the Engineering Library. It is from the Engineering Library under Elaine's guidance that I have grown up and integrated into Canadian culture. I am in Vietnam right now [working as an engineer] ... Elaine will always have a special place in my heart."

In addition to her significant administrative and reference roles in the Engineering Library, Elaine sat on Faculty Council and on many library committees during the course of her career, always addressing her responsibilities with diligence. Beyond the library, she was the mother of two children, Michael and Carole, and wife for 51 years to the eminent Canadian historian Professor J. Granatstein. Although she rarely talked about herself, Elaine was frequently paid tribute in her husband's works.

Elaine will be well remembered and sadly missed by her colleagues and friends at the Faculty of Applied Science & Engineering, and at the University of Toronto Libraries.

On a motion moved by Dean Cristina Amon and seconded by Faculty Registrar Barbara McCann, it was resolved –

> THAT the Council of the Faculty of Applied Science & Engineering record with deep regret the death on November 19, 2012 of Elaine Granatstein, Librarian Emerita who served the Faculty well for many years as the Head of the Engineering Library from 1983 until her retirement in 2003.

It was further resolved –

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

Members of Council stood and observed one minute of silence in honour of the late Mrs. Granatstein.

4. Report of the Dean

Dean Cristina Amon welcomed members to Faculty Council and provided an update.

(a) Annual Report

The Faculty's fourth Annual Report of Performance Indicators was released earlier this month and featured in the most recent Faculty e-newsletter. As in previous years, data and metrics in areas of strategic interest from the past 10 years have been gathered, and new programs and initiatives launched in 2011-2012 have been highlighted. The Report is used as a tool to rigorously track and assess our progress towards accomplishing our goals and to drive us to achieve even more in our pursuit of excellence. The Report is available for download on the Faculty website and, as always, feedback is most welcome.

(b) Boundless Campaign

The Engineering Boundless Campaign was launched on September 15 with an *Afternoon of Engineering Innovation*. Close to 500 alumni, donors, faculty, students, staff and members of the Engineering community attended, celebrating the impact that our work has on Canadians and across the world.

It was announced at the event that we have already raised over $80 million dollars toward our $200 million goal, including $12 million specifically earmarked for the new Centre for Engineering Innovation and Entrepreneurship, which will be constructed on the parking lot next to Simcoe Hall. The Building Planning Committee, chaired by Professor Emeritus Ron Venter and with representatives from all constituency groups in our Faculty, will soon be selecting architects to design the building.

(c) CEAB

The CEAB review of the Faculty's undergraduate programs was held on October 21-23. The official report from CEAB is expected in early January, however indications from the visiting team's exit interview is that our extensive preparation has paid off: they were thoroughly impressed with the excellence and innovation of our programs, faculty, students and staff. The information compiled for the review will also be used for curriculum and outcome-based assessments. The Dean thanked all once again for their hard work and dedication throughout the process.

(d) ASK Portal

The Faculty has launched the ASK Engineering Portal through the Registrar's Office. This tool will allow students to ask questions in a central location, and receive answers from the appropriate people or offices. The project stemmed directly from student feedback and is being piloted this semester, with the aim to be fully deployed next semester.

(e) Governance Task Force

The creation of a task force to review the Faculty's constitution, including the membership composition of Council, was announced at the previous Council meeting in September. The task force has been meeting regularly to develop proposals and is

beginning consultations. Dean Amon encouraged members to contact any of the task force members if they wished to discuss the constitution. Task force members are: Phil Byer, Professor Emeritus, Department of Civil Engineering (Chair); Chris Damaren, Vice-Dean, Graduate Studies; Sara Dolcetti (IND 0T9), Alumna; Greg Evans, Professor, Department of Chemical Engineering & Applied Chemistry; Matthew Lattavo (CivE 1T4), VP Academic, Engineering Society; Barbara McCann, Faculty Registrar; Chirag Variawa, (MSE 0T9, MIE PhD candidate) Member of Governing Council; and Caroline Ziegler, Faculty Governance Officer (Secretary).

(f) Master of Engineering in Cities Engineering and Management

At the previous Council meeting, the Master of Engineering in Cities Engineering and Management (MEngCEM) program was approved. The program has now been approved by both University governance and Quality Council, and will begin in September 2013. Chris Kennedy of the Civil Engineering Department has been named program director.

(g) External Reviews

The Institute of Biomaterials and Biomedical Engineering underwent the external review on November 19 and 20, and we look forward to receiving the review team's report. The Department of Materials Science and Engineering and the Edward S. Rogers Sr. Department of Electrical and Computer Engineering will be reviewed this spring.

(h) Administrative Leave

The Dean will be taking the second half of her six-month administrative leave from January 1 through March 31, 2013. Yu-Ling Cheng has once again kindly agreed to take on the role of Acting Dean during this time.

5. Academic Plan Update

Our Academic Plan was approved by Faculty Council in October 2012. It was developed through consultations based on a framework arising from the Faculty's self-study, which was prepared in 2010 for the Faculty's external review. It establishes goals and metrics through 2016 in seven key areas: culture of excellence; positioning; educating future engineers; student experience; research foci; outreach, collaboration and influence; and resource allocation.

Dean Amon highlighted some of the significant progress made in the last year toward the goals outlined in our Academic Plan.

(a) Culture of Excellence

We are now ranked #13, six places higher than last year, in the Academic Ranking of World Universities (ARWU).

The diversity of our students has increased. The number of international students has risen to 21.1 per cent of our undergraduate class, 25.7 per cent in our incoming first year class, and 22.6 per cent of our graduate class. We have also increased our number of incoming first year female students, at 25.4 per cent after a three-year plateau of around 23%. The overall percentage of our female faculty has also risen. At 15.7 per cent, we are higher than the Ontario percentage of 12.5 per cent, but still lower than the Canadian average of 16.1 per cent. We will increase our efforts to continuing to increase gender diversity among students and faculty.

Engineering's faculty and staff excellence is evidenced by the 20 major awards we garnered in 2011-2012. Although we represent 5.5 per cent of engineering professors in Canada, we received more than 25 per cent of the major provincial, national, and international awards. We are on track this year to be equally successful.

(b) Positioning

Over the past few years we have made significant strides in increasing communication and transparency with our stakeholders on areas of importance to the Faculty. Mechanisms used include annual reports of performance indicators, regular e-newsletters and Town Halls, twitter accounts and digital displays.

(c) Educating Future Engineers & Student Experience

We have the highest overall entrance average to date of Ontario secondary school students in our incoming first year undergraduate class, rising from 85 per cent in 2006 and 90.4 per cent in 2011, to 91.3 per cent in 2012.

The Faculty has continued our efforts to increase undergraduate research opportunities as well as strengthen our summer internship and Professional Experience Year (PEY) program. Students can also study abroad through our Structured Exchange Pathways program.

We have created MEng-specific graduate courses, and this past year introduced new graduate certificates in Energy Studies, Healthcare Engineering, Computational Mechanics in Design, and Robotics and Mechatronics. We have also created five new ELITE certificate courses, four of which are taught by industry professionals, and are offering select courses on evenings and weekends along with an online course.

(d) Research Foci

We are committed to fostering multidisciplinary and collaborative research by supporting current, and creating new, research centres around strategic research themes that make significant, relevant impacts on society. New institutes and centres include the Centre for Resilience of Critical Infrastructure (CRCI); University of Toronto Institute for Multidisciplinary Design and Innovation (UT-IMDI); and the Centre for Research in Sustainable Aviation (CRSA).

(e) Resource Allocation

The Faculty has made a number of facilities and space improvements, such as the IBBME undergraduate teaching lab renovation, air-conditioning upgrades in the Galbraith and Mechanical buildings, relocation of PEY and the Engineering Career Centre to the Fields Institute, the renovation of the student design labs, the Cross-Discipline Energy Fundamentals Lab and the MIE Student Services Centre, the creation of the Lassonde Mining Building Attic, and the renovation and expansion of BioZone in the Wallberg building.

The Dean concluded by saying that we will continue to work toward achieving our goals in the pursuit of excellence in everything we strive to do. She invited members to read the full Academic Plan, posted on the Faculty's website, and encouraged feedback.

The Speaker added that he had recently participated as an external reviewer at the University of Alberta, where it was said that our Faculty represents the gold standard in engineering.

6. Combined BSc-UTSC/MEng Program

Chris Damaren, Vice-Dean, Graduate Studies, presented Report 3361, which is a proposal for a five-year program that will allow students to complete a BSc in any one of the four undergraduate Specialist programs in Environmental Science at the University of Toronto Scarborough (Environmental Biology, Environmental Chemistry, Environmental Geoscience, and Environmental Physics), and an MEng in either Chemical Engineering and Applied Chemistry or in Civil Engineering.

In years 1-3, students will work on their BSc requirements. In year 4, they will work on their BSc requirements, including two FASE undergraduate half courses and up to 1.0 FCE of MEng requirements (which can be counted toward the BSc and MEng requirements) and in year 5, they will complete their remaining MEng requirements.

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

> THAT the combined BSc-UTSC/MEng program, as outlined in the attached proposal, be established.

There was no discussion. The Speaker called the question and the motion was carried.

7. Sustained Excellence in Teaching Award

Lisa Romkey, Chair of the Teaching Methods and Resources Committee, presented the proposal to create a new teaching award, as outlined in Report 3363. The award will recognize those who have demonstrated excellence in teaching in the Faculty over a sustained period of time. It will complement the Faculty's three existing teaching awards (the Faculty Teaching Assistant Award, Early Career Teaching Award, and Faculty

Teaching Award) and will contribute toward the development of teaching awards at the University and across Canada.

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

> THAT the Sustained Excellence in Teaching Award, as outlined in the attached proposal, be established.

There was no discussion. The Speaker called the question and the motion was carried.

8. Undergraduate Academic Certificate in Nuclear Engineering

Graeme Norval, Chair of the Undergraduate Curriculum Committee, presented the proposal to establish an undergraduate academic certificate in nuclear engineering, as described in Report 3369. This certificate will strengthen the Faculty's offerings in the nuclear engineering field and better coordinate the sequence of courses offered to students. It will require the completion of three courses, or half a minor, and according to policy approved by Council in April 2012, successful completion will appear on students' academic record.

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

> THAT the Faculty establishes an Undergraduate Academic Certificate in Nuclear Engineering and that the associated course changes be approved.

Several members supported the proposal, and suggested that a parallel effort be made to ensure the Faculty has committed resources to support the area of nuclear engineering over time.

The Speaker called the question and the motion was carried.

9. Session Dates for the 2013-2014 Academic Year

Graeme Norval, Chair of the Undergraduate Curriculum Committee, presented Report 3366, which outlines the proposed session dates for 2013-2014. The proposal was developed in consultation with the Faculty of Arts and Science, and aligns well with the opening and closing of residences in the Fall and Winter Sessions. In accordance with the University's *Policy on Scheduling of Classes and Examinations and Other Accommodations for Religious Observances*, students who cannot attend the first two days of classes because of the overlap with Rosh Hashanah will have an opportunity to review course material with either the instructor or teaching assistant. In addition, costs will be saved since no examinations fall on Saturdays and no orientations fall on weekends.

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

> THAT the proposed session dates for the 2013-2014 academic year be approved.

There was no discussion. The Speaker called the question and the motion was carried.

10. Major Changes to the Undergraduate Curriculum for 2013-2014

Graeme Norval, Chair of the Undergraduate Curriculum Committee, presented the proposed changes to the undergraduate curriculum for the next academic year, as described in Report 3368 Revised. The proposal includes the introduction of four e-course equivalents to CIV100F, MIE100S, MAT186F, and MAT187S, taking advantage of an initiative provided by the Provost. This will be a pilot project, and of the four e-courses proposed, it is anticipated that two will be offered in the fall and two in the winter.

Other major changes for 2013-2014 affect courses in Cross-Disciplinary programs, Electrical and Computer Engineering, and Engineering Science.

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

> THAT the major undergraduate curriculum changes be approved.

In response to questions from members, Susan McCahan, Vice-Dean, Undergraduate explained that e-course lectures will be posted on Blackboard and will also be available to students not registered in the course, but the online tutorials, teaching assistants and office hours will only be available to enrolled students.

While it will ultimately be up to the instructor designing the e-course, the major assessment in e-courses will likely be an in-person final exam as opposed to weekly assignments, due to the challenges inherent in proctoring online assessments.

The CEAB does not currently have a position on e-courses, but our recent accreditation visit will not be affected as it was based on the 2011-2012 academic year.

A member asked what the advantages are of offering e-courses, and if these advantages would offset the risks of students not being able to adapt to e-courses, the potential for the CEAB to not recognize the courses, and the fact that this is a pilot. Dean Amon responded that the e-courses are optional for students, and that this is a pilot because the Faculty is also learning how to best design and offer the courses. Furthermore, although U of T is a leader in Canada in the development of online courses, we are behind other international peer institutions. Professor Norval added that Engineering students now take HSS and CSS e-courses.

A member asked why the e-courses are being proposed for first year courses. Professor McCahan responded that the multiple sections offered in first year courses will allow students to switch to an in-person section if desired; the courses will appeal to students outside U of T, especially those who have less physical access to advanced

placement services; and they will appeal to gifted high school students who have exhausted the math and physics courses at their own schools.

Another member asked that the Faculty commit adequate resources to the design and delivery of e-courses.

It was reiterated that this will be a pilot project and that feedback from the instructor, teaching assistants and students will be assessed and may modify delivery.

The Speaker called the question and the motion was carried.

11. Reports and Recommendations of Standing Committees

The Speaker reminded members that the following information reports were distributed on November 15. Because of the fullness of the agenda, the reports were not individually presented.

(a) Engineering Graduate Education Information Report

Report 3360 Revised, an update from the Engineering Graduate Education Committee, documents the approval of 12 new courses in various programs, the renaming of a course in Electrical and Computer Engineering, and the deletion of three courses in Mechanical and Industrial Engineering.

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

(b) Minor Undergraduate Curriculum Changes for 2013-2014

Report 3367 from the Undergraduate Curriculum Committee describes minor changes to courses in Chemical Engineering, Civil Engineering, Cross-Disciplinary Programs, Electrical and Computer Engineering, Engineering Science, and Mechanical and Industrial Engineering.

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

(c) Admissions Cycle, 2012

Report 3365, an update on the admissions cycle, summarizes the activities of the Admissions Committee over the past year, including details on the characteristics of First Year intake, results of individual programs from 2002-2012, admissions scholarships, and net First Year transfers.

Members attributed a higher than predicted applicant yield to the efforts of our recruitment team, our high placement in international rankings, and the appeal of a growing number of undergraduate minors and certificates.

A member asked if the number of international students in individual departments might need to be re-balanced or capped if it differed from the Faculty's average, to which the Dean responded that the goal is 25% across the Faculty as per the Academic Plan.

The Report was received for information.

(d) Admissions Committee Goals, 2012-2013

The goals of the Admissions Committee were circulated as Report 3364 and include updating the Committee's manual and terms of reference, implementing and reporting on the Committee's scholarship strategy review, reviewing the current method of predicting applicant yield with a view to improving its predictive capabilities, and beginning to review the Committee's current admissions processes to determine if and how other non-cognitive variables can be factored into the admissions decision-making process.

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

(e) Teaching Methods and Resources Goals, 2012-2013

The goals of the Teaching Methods and Resources Committee were circulated as Report 3362. Goals include developing the course evaluation framework that was approved at the April 2012 Council meeting by creating a set of reliable and valid questions that reflect the Faculty's teaching and learning priorities, and by discussing the evaluation of teaching assistants within the framework. Other goals include updating the Committee's manual and terms of reference, making recommendations about the possible purchase of new software or equipment for the ECF labs, and supporting the Faculty's annual Educational Technology Conference in conjunction with the Faculty's Instructional Technology Specialist.

A member requested that students be consulted if any purchases of new software or equipment for the ECF labs will be funded through student levies. Committee Chair Lisa Romkey responded that there are four active students on the Committee, and that any such initiatives would involve strong student consultations.

The Report was received for information.

(f) Community Affairs and Gender Issues Committee Goals, 2012-2013

The goals of the Community Affairs and Gender Issues Committee were circulated as Report 3370. The Committee will evaluate best practices and current approaches in academia and industry for providing training on professionalism and inter-gender and inter-cultural interactions in the workplace. Based on this evaluation, the Committee will identify groups engaging in professionalism training within the Faculty and University, and will recommend methods of training on these issues for Engineering students.

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

12. Other Business

Greg Evans, a member of the task force to review the Faculty's constitution, commented on the large number of students attending the meeting, and thanked them for their interest.

Graduate student Chirag Variawa noted that the Faculty is well known at the University for being innovators and early adopters of University-wide technology such as Blackboard Mobile and wireless printing.

13. Date of Next Meeting

The next Faculty Council meeting date is on February 14, 2013.

14. Adjournment

The Speaker thanked members for attending and participating in the meeting. The meeting adjourned at 1:25 p.m.

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