

**FACULTY OF SCIENCE  
MEETING OF FACULTY  
Tuesday, 4 December 2018  
Leacock Council Room - L232**

**ATTENDANCE:** As recorded in the Faculty Appendix Book

**DOCUMENTS:** S-18-17, S-18-18

Dean Lennox called the meeting to order at 3:00 p.m. and welcomed members to the fourth Faculty of Science meeting of the 2018-2019 academic year.

**1. Adoption of Agenda**

Item #7, Reports on Actions of Senate, will be dealt with after Item #5, Dean's Business, of the Agenda.

Prof. Lydon **moved**, seconded by Prof. Perepichka, that the amended Agenda be adopted.

**The motion carried.**

**2. Minutes of 13 November 2018**

**S-18-17**

Clarifications to the Minutes on Item 5 (a), Dean's Business (iii) the Gault Nature Reserve

(i) The Associate Director of the Gault Nature Reserve is Mr. David Maneli.

(ii) At the previous Faculty meeting, it was inadvertently mentioned that Prof. John Gyakum was one of the three members of the Executive Committee of the Gault Nature Reserve, but as recorded in the Minutes, the Committee members are: Prof. Nigel Roulet (Geography), Prof. Frédéric Guichard (Biology), and Prof. Jeff McKenzie (Earth & Planetary Sciences).

Prof. Gyakum **moved**, seconded by Prof. Roulet, that the amended Minutes be adopted.

**The motion carried.**

**3. Business Arising from the Minutes**

There was no business arising from the Minutes.

**4. Report of Committee**

- Academic Committee

**S-18-18**

Associate Dean Hundemer introduced and described the new/revised courses and the program changes listed below.

**I. NEW COURSES**

- |     |                                     |                                    |                       |
|-----|-------------------------------------|------------------------------------|-----------------------|
| (1) | <u>Mathematics &amp; Statistics</u> |                                    |                       |
|     | MATH 682                            | Statistical Inference<br>4 credits | <b>AC-18-20 (Rev)</b> |

MATH 683 is a new course designed for graduate students in the Quantitative Life Sciences Ph.D. program (QLS) who have not previously taken inferential statistics. Moreover, the creation of MATH 683 was mandated by the *Ministère de l'Éducation et de l'Enseignement supérieur* (MEES). The purpose of the course is to prepare QLS students for the more advanced statistics courses.

Associate Dean Hundemer **moved**, seconded by Prof. Stephens, that the course be adopted.

**The motion carried.**

- |     |   |  |                 |
|-----|---|--|-----------------|
| (2) | <u>Atmospheric &amp; Oceanic Sciences</u> |  |                 |
|     | ATOC 557                                  | Research Methods: Atmos-Ocean<br>3 credits | <b>AC-18-52</b> |

The new course, ATOC 557, is a high-level statistics course specifically for students in the Atmospheric & Oceanic Sciences programs. Students will learn all the important tools they need in order to be successful researchers.

Associate Dean Hundemer **moved**, seconded by Prof. Gyakum, that the course be adopted.

**The motion carried.**

- |     |                       |   |                 |
|-----|-----------------------|---|-----------------|
| (3) | <u>Biology</u>        |   |                 |
|     | BIOL 565<br><b>54</b> | Cell and Tissue Mechanobiology<br>3 credits | <b>AC-18-54</b> |

BIOL 565 is a new course introducing students to the emerging field of mechanobiology and mechanotransduction. The course mainly covers how cells interact with other cells or the environment in a mechanical manner.

Associate Dean Hundemer **moved**, seconded by Prof. Fussmann, that the course be adopted.

**The motion carried.**

## II. COURSE REVISIONS

- |     |                                     |  |                 |
|-----|-------------------------------------|--|-----------------|
| (1) | <u>Mathematics &amp; Statistics</u> |  |                 |
|     | MATH 455                            | Honours Analysis 4<br>Change in prerequisites<br>3 credits | <b>AC-18-37</b> |
|     | MATH 457                            | Honours Algebra 4<br>Change in prerequisites<br>3 credits  | <b>AC-18-38</b> |

MATH 455 and MATH 457 had been renumbered several years ago; however, the prerequisites for these two courses had also been renumbered but the changes to the

prerequisites had not been formally made. Therefore, the proposed revisions involve correcting the prerequisites for these courses.

Associate Dean Hundemer **moved**, seconded by Prof. Stephens, that the changes be approved.

**The motion carried.**

(2)

<u>Physics</u> PHYS 449	Majors Research Project Change in prerequisites, restrictions 3 credits	<b>AC-18-43</b>
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The proposed changes to PHYS 449 are (i) the removal of two prerequisites because, historically, the purpose was to have the research project be experimental in nature; however, theoretical-type projects have been permitted for many years, and (ii) the prerequisites are not included in the Physics joint major programs.

Associate Dean Hundemer **moved**, seconded by Prof. Grütter, that the changes be approved.

**The motion carried.**

(3)

<u>Earth &amp; Planetary Sciences</u> EPSC 303[from -203]	Structural Geology Changes in number [from -203]; term; title; prerequisites; restrictions 3 credits	<b>AC-18-47</b>
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A new instructor has reworked the above course and it now requires a 200-level, U1 prerequisite to ensure adequate knowledge for the subsequent course. Given that the prerequisite is at the 200-level, it was deemed necessary to renumber EPSC 303 (from -203), and to clearly state that EPSC 303 is a U2 course. Also, a restriction has been added to exclude students who have previously taken EPSC 203 from taking EPSC 303 again for credits.

Associate Dean Hundemer **moved**, seconded by Prof. Paquette, that the changes be approved.

**The motion carried.**

EPSC 320	Elementary Earth Physics Changes in course activities; supplementary information 3 credits	<b>AC-18-48</b>
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EPSC 320 has been incorrectly described as a lecture course with a laboratory component. This has never been the case; therefore, the proposed changes in course activities will correct the error.

Associate Dean Hundemer **moved**, seconded by Prof. Paquette, that the changes be approved.

**The motion carried.**

Course Retirement

EPSC 330

Earthquakes & Earth Structure  
3 credits

**AC-18-49**

The rationale for retiring EPSC 330 is that the course content is covered in a 500-level course, which serves well for both undergraduate and graduate students.

Associate Dean Hundemer **moved**, seconded by Prof. McKenzie, that the retirement be approved.

**The motion carried.**

(4)

Atmospheric & Oceanic Sciences

ATOC 548[from -646]

Mesoscale Meteorology

**AC-18-51**

Changes in number [from -646]; description; prerequisites;  
restrictions

3 credits

The above course has been renumbered due to the level of instruction and because it will be available to both undergraduate and graduate students. The course description, prerequisites and restrictions have been revised accordingly to correspond with a 500-level course.

Associate Dean Hundemer **moved**, seconded by Prof. Gyakum, that the changes be approved.

**The motion carried.**

(5)

Computer Science

COMP 208

Computer Programming for PSE

**AC-18-55**

Changes: title, description, administering faculty, prerequisites,  
corequisites, restrictions, supplementary information

3 credits

The most important change to COMP 208 is that it is currently being administered by the Faculty of Engineering, and the present proposal is that it be administered by the Faculty of Science. Historically, COMP 208 was intended to be taken by Engineering students, but it has been open to Science students for many years now – hence the change in administering faculty. The title has been changed to correctly reflect the audience for this course. Other changes include course description, prerequisites, corequisites, restrictions, and supplementary information.

Associate Dean Hundemer **moved**, seconded by Prof. Chmura, that the changes be approved.

**The motion carried.**

**The following item will be presented at a future Faculty of Science Meeting in February**

(6)

Biology/Bioengineering

BIOL 219/BIEN 219 (New) Intro PHYS Mol and Cell Biol

**AC-18-53/AC-18-53A**

Changes for BIOL 219: title, description, prerequisites,  
corequisites, restrictions, supplementary information

4 credits

### III. PROGRAM REVISIONS

- (1) Neuroscience  
- Major in Neuroscience **AC-18-35**  
- Honours in Neuroscience **AC-18-36**

The proposed program changes will offer more flexibility in the choice of statistics courses and the addition of a Complementary course in linear algebra. Also, 200-, 300-, 400- and 500-level courses have been added to the list of Complementary courses, and some of the courses in Streams B and C have been rearranged.

Associate Dean Hundemer **moved**, seconded by Associate Dean Western, that the changes be approved.

**The motion carried.**

- (2) Physics  
- B.Sc.; Liberal - Core Science Component in Physics **AC-18-45**

The program changes include moving one Required course to the Complementary courses, bringing it in line with other joint major programs in Physics. The number of Complementary credits is unchanged, and the program weight is reduced by three credits to 45 credits, consistent with other B.Sc. Liberal programs.

Associate Dean Hundemer **moved**, seconded by Prof. Grütter, that the changes be approved.

**The motion carried.**

- B.Sc.; Major in Physics & Geophysics **AC-18-46**

In the above program, additional courses offering more choices have been included, a hidden prerequisite has now been added to the program, as well as two research courses, one in Earth & Planetary Sciences, and the other in Physics.

Associate Dean Hundemer **moved**, seconded by Prof. Grütter, that the changes be approved.

**The motion carried.**

- (3) Earth & Planetary Sciences  
- Honours in Planetary Sciences **AC-18-50**

The minor revisions to the Honours in Planetary Sciences have been proposed to reflect, in the list of Required courses, (i) the retirement of EPSC 330 (above), which is being replaced with EPSC 240, and (ii) the renumbered course, EPSC 303 (from -203). Moreover, in the Complementary list, EPSC 445 will replace EPSC 435.

Associate Dean Hundemer **moved**, seconded by Prof. Paquette, that the changes be approved.

**The motion carried.**

- (4) Computer Science  
- Major in Computer Science & Biology **AC-18-56**  
- Honours in Computer Science & Biology **AC-18-57**

The minor changes to the Major and Honours Programs in Computer Science & Biology involve adding COMP 204 (Computer Programming for Life Science) as an alternate course to COMP 202 (Foundations of Programming). In the Honours Program in Computer Science & Biology, a 4-credit Honours research course at the 500-level is included, offering more flexibility; at the same time, the GPA for First Class Honours has been updated.

Associate Dean Hundemer **moved**, seconded by Prof. Fussmann, that the changes be approved.

**The motion carried.**

## **5. Dean's Business**

– Announcements

### **(i) Faculty of Science Holiday Party**

Dean Lennox reminded members about the upcoming Holiday Party, which will be held in the main dining room of the Faculty Club on **Thursday, 13 December 2018**, starting at 4:00 p.m. All Faculty members and families are welcome to attend.

### **(ii) Final Examinations in December 2018**

Dean Lennox reminded members that the final examinations will take place from 6 December to 20 December 2018. He asked Chairs/Director to ensure that instructors be present during their examination to answer students' questions.

Another reminder to instructors is to check in with those students writing their examination with the Office for Students with Disabilities (OSD).

With regard to invigilation of final examinations, Dean Lennox referred members to last year's communication concerning invigilation procedures; he will be resending a reminder very shortly.

Dean Lennox emphasized that the Faculty of Science views the invigilation of examinations as being part of the teaching responsibility of a course. He added that it was extremely important that students' questions be answered in a timely manner.

Dean Lennox wished the student members at the Faculty meetings all the very best during their exams! He expressed his appreciation for the very good attendance of student representatives at Faculty meetings during the Fall term, and he hoped to see them in the Winter term.

## **6. Reports of Director and Associate Deans**

a) Director (Advising Services) Nicole Allard

There was no report for the current meeting.

b) Associate Dean (Academic) Axel Hundemer

Associate Dean Hundemer said he did not have a report, but instead, he would like to ask for members' feedback in relation to MATH 682, a new graduate course (approved above) in statistics. The course was created for QLS graduate students lacking adequate knowledge in statistics. Much of the material covered in MATH 682 is thus at the undergraduate level. McGill will most likely be offering more interdisciplinary programs in the future, and some prospective applicants may not have sufficient

background in all areas of an interdisciplinary program. Since graduate students are not permitted to take undergraduate courses for credits, does the Faculty create graduate courses that cover undergraduate material? Associate Dean Hundemer asked members for comments and suggestions on dealing with this issue for other interdisciplinary courses or programs.

Some of the comments/suggestions were that:

- graduate students could take an undergraduate course but additional work or a special project would be required of them instead of creating more courses
- the issue with MATH 682 is that QLS is a program without a department, and there was no other suitable department to offer and monitor the course
- the MEES mandated an introductory statistics course at the graduate level for the QLS program, and the course was to be offered in one semester
- MATH 682 also covers content that is not included in other undergraduate courses, and the material goes beyond the 300-level undergraduate courses
- there exists a very basic statistics graduate course offered by the Faculty of Medicine, which is equivalent to a 200-level Mathematics & Statistics course

Associate Dean Hundemer said that members should feel free to contact him with any further ideas or comments.

- c) Associate Dean (Education) Tamara Western
- d) Associate Dean (Graduate Education) Laura Nilson

There was no reports for the current meeting.

- e) Associate Dean (Research) John Stix

Associate Dean Stix announced the following deadlines for January and February 2019:

(i) Dawson Scholars, James McGill Professors, and Distinguished James McGill Professors, and Open Call for CRC's 1 and 2:

Deadlines:

Faculty	mid-January 2019
University	1 February 2019.

(ii) Principal's Prize for Outstanding Emerging Researchers:

Deadlines:

Faculty	late January 2019
University	early February 2019

(iii) CFI 10 Proposals:

Deadlines:

Faculty	mid-February
University	end of February 2019

## 7. **Reports on Actions of Senate**

Senator Nigel Roulet: Joint Board-Senate Meeting of 14 November, 2018

As with all Joint Board – Senate meetings, the meeting was a thematic workshop format. The theme for this year was Lifelong Learning (LLL). Before the meeting, attendees could look at poster presentations relating to LLL from various units in McGill.

The meetings opened with a welcome and introduction by the Chair of the Board, Ram Panda, followed by some comments from the Principal on some statistics of the changing workforce, the role of robotics in replacing humans, and the skills future workers will need. Future workers will change jobs many times and this will require significant new training and upgrading. There will also be changes in student demographics.

There were three short presentations on LLL. The focus of the talks varied but the common points were: students need to be more innovative, think critically and learn to deal with complex problems. The implementation of LLL programs need to consider five points: alignment, community ship, innovation, buy in, and measurement. Finally, there was a call for de-bundling our programs to give interdisciplinary breath.

There was then forty-five minutes of round-table discussions. The tables were to consider LLL over three time scales: immediate, 5-10 years, and more than 10 years. The discussions were wide ranging and varied, but a few common points emerged. First, it is not at all clear what LLL means but LLL engages learners throughout their life. Second, a university education should provide the foundations and skills to allow people to learn over their lifetime. Third, there was a tension between a university's role in learning for knowledge and vocational training. Fourth, McGill already does a lot in LLL but these things are not well known. Fifth, there was no clear articulation of what LLL might look like and what its focus would be in the long-run different than what we do already but there did seem to be a general consensus that things will be quite different in 20 years. Sixth, McGill is not prepared for the changes that are to come and will likely have a hard time dealing with them - McGill's lack of agility will be an impediment to the introduction of LLL. Finally, the transition to a LLL institution would require McGill to look more broadly at partnerships with the community, society in general, corporations and industry, and our alumni.

The meeting concluded with the Principal trying some coherence among ideas, but she deferred to the Secretariat's report of the meeting. The Chair of the Board concluded by saying that shifting the LLL will require a cultural change at McGill and McGill should look to be a leader as an agent of this change.

Senator Hans Larsson: Senate Meeting of 21 November, 2018

In spite of the snowy day, most of the senate hall was filled, eager to wade through the full 2 page long agenda; suggesting most of us do not rely directly on oil and gas to get to campus, more on that later. The senate meeting package totalled 170 pages, sufficiently engineered, but not efficiently. Not the longest for this year, mind you. That goes to the February 21 meeting this year with 231 pages. The meeting started off at 14:30 at a brisk pace.

Two memorials from Medicine were read for Professor Emeritus Peter Roughley and Professor Emerita Margot Becklake McGregor. Each had exemplary careers. A quick search during the senate meeting found Dr. Roughley had 278 publications, an h-index of 65, and 14,266 citations in the field of bone and cartilage physiology. Dr McGregor had 186 publications, an h-index of 41, and 7,698 citations in the field of pulmonary disease.

Senator Fortier thanked the 75 attendees of the joint Board-Senate meeting that was tasked with thinking about "How could McGill transform itself for a world of lifelong learning?" and rifled off a series of kudos.

At the business arising from the Oct 24 meeting minutes, student Senator Dunn wanted to comment and question the CAMSR update. The motion was considered to be out of order, but he persisted to raise the issue of the Senate contribution to the CAMSR update to the Board concerning divorcing investments from oil and gas. Senator Rogowska



responded that CAMSR was revising its policy on social responsibility of investments. Senator Mikkelson chimed in, first to commend Senator Dunn on emphasising Senate's statement to CAMSR. He then questioned the current direction of CAMSR and the Board of Governors and provided five particular recommendations to go forth. One included removing the chair of CAMSR who he stated was a member of Suncor.

Principal Fortier's Remarks section included announcing the launch of Bensadoun School of Retail Management, the public consultation with Montreal on the development of McGill College Ave., and a lengthy list of community relations, that included, again, the opening of the Bensadoun School of Retail Management, with Bensadoun's contribution of \$25M, the successful brain symposium on neuroinformatics, and a \$4M gift for the Dobson Centre for Entrepreneurship.

A single question was addressed concerning indigenous curriculum content and equitable recruitment, submitted by Senators Lavoineae and Wilson. Specifically, what actions does the University plan. A response from Senator Manfredi stated there are no calls for action in the report that McGill will not address. Senator Wilson asked what does "address" mean in this context – if this was a statement of action or simply discussion. In particular, will the BoG change or simply address the renaming of the men's teams? The response was, they will all be addressed. While I've heard much discussion on this topic, there are few actual suggested solutions to a renaming, including by the students who raised this at senate. As a former Redman, I can say I did not feel the name was meant to be derogative during at least the early 90s but was a proud title. However, progressive thinking is our job and so should suggested changes in the name. **ALL REDS**, anyone?

The meeting followed with a 45 minute Open Discussion on the Recommendations of the Report of the Principal's Task Force on Respect and Inclusion in Campus Life (Mission, Trust and Information Governance). Briefly:

Mission. The discussion centred on the role of the university in providing health and social services. Senator Buddle stated we need to be clear on what can be done. On the topic of prevention, the Faculty of Medicine has a wellness office for stress management, etc. Staff needs, such as mental health, disabilities, etc. should be addressed. Senator Manfredi concluded that McGill can't provide full health services to all students and staff, but can address some specific topics.

Trust. The discussion focused on creating a community-wide discussion. This includes involving groups most affected in discussions (e.g. indigenous students in discussion on Redman name, students in discussions on student affairs). The underlying emphasis was to engender a collegial community.

Governance. This topic only received a brief mention to the need to create a greater sense of community, tied with the discussion of Trust.

Senator Manfredi presented a series of rapid fire nominating committee memberships for approval...

Senator Nancy Ross presented an update on the Strategic Research Plan 2019. This is meant to be an addition to the 2015 SRP, that ran its course to last year and was extended by a year by Martha Crago. SRP 2019 has apparently been worked on since January 2018 with extensive consultations and meetings. However, judging by the whispers among the Science Senators corner and look of shock on Senator Lennox's face, no Science leader was included in this consultation. That became obvious in that the SRP 2019, as presented, had nothing of substance in it, except the inclusion of the already well established Sustainability initiatives.

Senator Buddle presented revisions to the Code of Student Conduct, which were last updated in 2013.

The annual report of committee on physical development was presented by Dr. Charlebois, chair of the Senate Committee on Physical Development (SCPD). Just as he got started, I had to leave to catch a 5 pm train to pick up a kid from daycare and spare the embarrassing \$1/minute late charges family life incurs. Although that seems high, the economy of spousal wrath is even more expensive. Although the Senate received a quick report from Dr. Charlebois, I was entertained by a 2 hour meeting the following day by that very committee, on which I sit. As far as I know, I am the only Science faculty on this committee (certainly the only one in attendance), so take this opportunity to summarize the content of that meeting here, on topics directly related to Fac Sci. There is no other avenue for communication of that committee to the broader collegial community (see note on Trust above), I will make up for my absence of the remaining hour of Senate with a rundown of the SCPD.

To finish the Senate meeting, Senator Gyakum noted to me the small numbers presented by Senator Buddle in the annual report of the committee on Student Discipline. The tables presented a total of 264 cases (McGill-wide), of which 257 were adjudicated by the Disciplinary Officers, and only 7 adjudicated by the Committee of Student Discipline. There was a notion of potential under-reporting in this report. The total adjudicated by the Disciplinary Officers from Fac Sci was only 17. Given the 'hundreds' of cases we've heard about from a single computer-oriented department in Science alone, I wonder how many cases there are at the pre-DO adjudication phase. If the efficiencies are similar, a quick calculation suggests upwards of 9,400 cases may have been initiated on campus last year. This would be an interesting number for senate to have to get a sense of what is going on prior to the 'supreme court' phase of disciplinary actions.

Now onto the SCPD from the following day. Points relevant to Fac Sci are:

McGill is targeting to be carbon neutral by 2040. This is difficult given that almost 90% of our on-campus carbon-equivalent emissions are from natural gas usage to operate our boilers and electric power generators. Hydro Quebec does not have the capacity, at the moment, to replace these needs, nor could we afford the upgrades.

The next round of CIF funding requests will not include the Stewart North building but potential projects include the planned Research and Innovation pavilion at Mac Campus, renovations to Lyman Duff, and energy loop and HVAC upgrades to the lower campus.

RVH planning has been limited to 50,000 square metres of guaranteed space, still a large number, with approximately 140 faculty moving. The timeline to completion is approximately 2025. Coincidentally, a similar timeline is planned for the section of Penfield circling the reservoir to Pine to upgrade the water pump station. That roadwork will start in 2019 and expected to be complete also by 2025. I asked if McGill had presented pedestrian only modes for the remainder of McTavish to the mountain and the section of Penfield around the reservoir, which with traffic is like playing real-life Frogger. But, I was told this change is unlikely given that McGill was in discussion with Montreal since the 1960s to create the pedestrian section now present on McTavish.

To wrap up near-term constructions, the entire Schulich Library will be emptied and renovated, starting next summer with construction complete by 2022.

I'm looking forward to tomorrow's senate meeting, which has a document package of 189 pages.

8. **Members' Question Period**

There were no questions.

9. **Other Business**

There being no further business, Ms. Hunter **moved**, seconded by Mr. Halloran, that the meeting be adjourned at 3:50 p.m.

**The motion carried.**

**Next Meeting: Tuesday, 15 January 2019**