AC-15-70

FACULTY OF SCIENCE
ACADEMIC COMMITTEE

Minutes of the meeting held on 22 March, 2016, at 3:00 p.m. in Leacock Building, Room 738.

PRESENT: Dean Bruce Lennox (Chair), Associate Dean Tamara Western (Vice-Chair), Professors Mark Baldwin (in lieu of Caroline Palmer), William Coish, Thomas Duchaine, Vojkan Jaksic, Daniel Kirshbaum, Michael Langer, Greg Marczynski, Jeanne Paquette, Kathy Roulet; Natalie Waters; John Lin, Thérèse Koch (in lieu of Matthaeus Ware), Matthew Rowe; Josie D'Amico.

GUESTS: Associate Dean (Graduate Education) Laura Nilson; Professors Peter Grütter, Axel Hundemer; Dr. Sabine Dhir.

REGRETS: Director Nicole Allard; Professors Huy Bui, Irene Gregory-Eaves, Barbara Hales, Michel Lapointe, Anthony Mittermaier, Ana Nyzhnyk; Joanna Liu, Alvin Qui, Megan Fothergill, Mackenzie Webber.

DOCUMENTS: AC-15-56 to AC-15-69

Dean Lennox called the meeting to order at 3:05 p.m.

(1) ADOPTION OF AGENDA

Ms. Roulet **moved,** seconded by Prof. Kirshbaum, that the Agenda be adopted.

The motion carried.

(2) MINUTES OF 23 FEBRUARY, 2016 **AC-15-56**

Prof. Paquette **moved,** seconded by Prof. Langer, that the Minutes be approved.

The motion carried.

(3) BUSINESS ARISING FROM THE MINUTES

Minutes 605.5 - 605.8, Computer Science, COMP 400 (AC-15-51)

703.1 Associate Dean Western gave an update on the course title for COMP 400. At the last AC meeting on 23 February 2016, a straw vote had taken place to look into the possibility of renaming COMP 400, in order to avoid confusion for Majors students. The new title for COMP 400 is **Project in Computer Science** (from Honours Project in Computer Science); the title change and other changes were approved at the Faculty meeting, 15 March 2015.

(4) PROPOSED INTERDISCIPLINARY QUANTITATIVE LIFE SCIENCES (QLSC) PH.D. PROGRAM **AC-15-68/AC-15-69**

704.1 Prof. Peter Grütter gave an overview on the proposed Interdisciplinary Quantitative Life Sciences (QLSC) Ph.D. Program, with the aid of a PowerPoint Presentation. Also in attendance, was Dr. Sabine Dhir, Interfaculty Program Administrator, GPS. Prof. Grütter said that the proposal was not a formal one, but was rather a tentative outline of current thinking on the program, which would incorporate feedback in order to produce a formal proposal designed for committee consideration.

704.2 Prof. Grütter said that the proposal was the result of a suggestion from the Dean of Medicine and Dean of Science to devise a Ph.D. that applied quantification to the life sciences. The aim of the program will be to connect various aspects of the life sciences and of medicine with quantitative and physical science. This will involve interdepartmental and interfaculty cooperation in order to put together a cohesive Interdisciplinary Program in QLSC.

704.3 He said the aim was to train the next generation of multidisciplinary researchers to bridge the life and quantitative sciences. Furthermore, the QLSC will facilitate collaborative life science research.

704.4 The program will be set up with three different streams: Biophysics, Computational and Statistical Molecular Biology, and Ecosystems. A capstone course will cover two semesters and will bring students together. Complementary courses will consist of different suggested courses for each of the three streams. Additionally, there will be a monthly research seminar with invited speakers, a qualifying exam, and a research thesis.

704.5 The capstone course, QLSC 600, Foundations of Quantitative Life Sciences, will be composed of 8 x 3-week modules, and in addition, a one-week section on scientific computing at the beginning of each semester.

704.6 As well, a community will be built with the aid of an annual retreat, departmental seminars across the university, roundtable discussions, and rotations (if funding is available).

704.7 Units that have shown interest in offering modules for QLSC 600 are: Bioengineering, Biology, Epidemiology & Biostatistics, Human Genetics, Natural Resource Sciences, Neurology & Neurosurgery, Physics, and Physiology. Other potential units include: Biological and Biomedical Engineering, and Computer Science.

704.8 The background required of students would be the following prerequisite courses: BIOL 200, COMP 206, COMP 250, MATH 223 or MATH 236, MATH 314, MATH 323, and MATH 324.

704.9 Prof. Grütter said there was no Ph.D. program in Canada like that proposed, and that if no program was developed, Canada would lose many bright potential graduate students. He added that there was no process at McGill to develop interdisciplinary programs such as the QLSC.

704.10 Regarding recruitment of students, the program website would contain an advertisement for the program, a database of potential supervisors and research projects, with links to the relevant departments and programs.

704.11 Regarding supervisory privileges, potential supervisors would submit a C.V. to the proposed program Executive Committee. Home units must approve. The participation of supervisors must be acknowledged in regard to workload, merit, promotion, etc.

704.12 The general idea is to provide an ad hoc program to initially enrol students by 2017. Submission to the Québec Government for approval would come later.

704.13 Prof. Grütter said he and Dr. Dhir welcomed comments and suggestions, and at the moment, the structure of the program was flexible.

704.14 Among the comments made/issues raised, include:

- that any proposals for Science Graduate Programs would have to be approved by the Academic Committee and by the Faculty of Science
- that GPS should not have the primary academic responsibility for the program; Dr. Dhir pointed out that the primary responsibility for an already existing cross-faculty program lies with an Interfaculty Studies Committee.
- that there should be wider communication and consultation with all the units in the Faculty of Science, and with any other relevant units, including those in the Faculty of Medicine
- the plan for consultation
- potential overlap between the capstone course and already existing courses
- the relation to other existing programs, both academically and administratively; the administration of the QLSC itself
- whether the proposal should be structured as an Option
- would students be working in places other than their home department? if so, how would the program be coordinated? would there be a virtual department? would there even be a home department?
- how would issues such as Intellectual Property and authorship be addressed?
- the funding model, and whether the money would be coming from the same pie as other graduate funding; would QLSC be its own funding unit? what would be the role of the units? what role, if any, would T.A.ships play?
- how would the progress and well-being of students be monitored? different units have different "cultures"; could students slip through the cracks? how would responsibility for students be apportioned between units and the QLSC program?
- how exactly the community would be organized

704.15 Prof. Grütter said that any additional feedback could be sent to either him or Dr. Dhir.

Dean Lennox thanked Prof. Grütter and Dr. Dhir for their presentation.

704.16 The Academic Committee then moved on to consider the rest of the items on the AC Agenda, following which the Committee returned to the QLSC proposal.

704.17 Further issues raised were:

- consultations should be extensive; because of the way the program is currently being organized, with input from multiple areas, it is difficult to know who to consult with
- because of the possibility of the capstone course overlapping with pre-existing courses, and of this overlap slipping through the cracks, consultation should be extensive and systematic, including going through heads of units
- if QLSC students are funded by the QLSC, but working in departments, would governmental money assigned per graduate student go to QLSC or the department?
- although the Department of Psychology had initially tried to ensure that Psychology graduate students and IPN students working in the Psychology Department, had similar stipends, this is very difficult to maintain
- whether the QLSC would be financially sustainable; a dedicated (non-academic) administrator would add to the cost of the program; furthermore, if the program does not attract more students to McGill, there would be a net financial loss
- Options do have capstone courses, but do not have funding; an Option(s) could fulfil the academic content of QLSC without any of the complications of the

QLSC; the experiences of other units, including the MSE, offering Options should be examined, to see the pros and cons

704.18 Associate Dean Western said that members could take the proposed Ph.D. program back to their departments for further input. The full QLSC proposal, as well as the PowerPoint Presentation, will be sent to the members of the Academic Committee.

704.19 Dean Lennox asked members to reflect on the three proposed streams: Biophysics, Computational and Statistical Molecular Biology, and Ecosystems.

(5) <u>MATHEMATICS & STATISTICS</u>

New Course:

MATH 125	Math. Techniques for Economics 3 credits	**AC-15-57**

705.17 There was a long discussion concerning the requirement for basic math for some students in Economics (the Faculty of Arts does not require its students to have a background in math for admission), during which Prof. Hundemer explained that MATH 125 absolutely would be necessary to provide basic math for these students, and that no existing Math course would suffice.

Associate Dean Western **moved**, seconded by Prof. Jaksic, that the course be adopted.

The motion carried.

(6) <u>PHYSICS</u>

PHYS 228	Energy and the Environment Changes: renumbered from [-184], prerequisites, restrictions	**AC-15-58**

706.1 Discussion revolved around the meaning of "course level," whether it was appropriate to renumber the course from the 100-level to the 200-level considering the added prerequisites were freshman-level, whether the course was an important part of any Physics program, and the fact that PHYS 228 would not serve as a prerequisite to any other course.

706.2 After the discussion, Associate Dean Western **moved**, seconded by Prof. Coish, that the changes be approved.

The motion carried.

6.1. B.Sc. & B.A. & Sc. Program Changes:

706.3 Among other changes, PHYS 228 was to be included in the following programs:

- B.Sc. Minor in Physics **AC-15-59**

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

The motion carried.

- B.A. & Sc. Minor in Physics **AC-15-60**

706.4 Associate Dean Western **moved**, seconded by Prof. Coish, that the changes be approved, pending approval by the B.A. & Sc. PAC.

The motion carried.

- B.A. & Sc. Major Concentration in Physics **AC-15-61**

706.5 Associate Dean Western **moved**, seconded by Prof. Coish, that the changes be approved, pending approval by the B.A. & Sc. PAC.

The motion carried.

6.1.2. Programs Affected by the Minor in Physics:

- Concurrent Bachelor of Science (B.Sc.) and Bachelor of Education (B.Ed.) – Major Concentration Chemistry with Minor Physics for Teachers (135 credits)
- Concurrent Bachelor of Science (B.Sc.) and Bachelor of Education (B.Ed.) – Major Concentration Biology - Organismal with Minor Physics for Teachers (135 credits)
- Concurrent Bachelor of Science (B.Sc.) and Bachelor of Education (B.Ed.) – Major Concentration Biology-Cell/Molecular with Minor Physics for Teachers (135 credits)

Secretary's Note: After the meeting, Ms. Roulet, McGill School of Environment, asked that PHYS 228 be included in the following Environment Programs, under the **Natural Sciences and Technology Section of the <u>Suggested Courses List</u>**:

- Minor in Environment
- Minor Concentration in Environment
- Diploma in Environment

6.2. B.Sc. Honours Program Changes:

- B.Sc. Honours in Physics and Chemistry **AC-15-62**

706.6 Prof. Coish explained that the recent amalgamation of CHEM 253 and CHEM 263 into CHEM 283 was reflected in the proposed changes. Additionally, formatting changes were being made to the presentation of the program.

706.7 Associate Dean Western said that the program outline was being brought into line with McGill's eCalendar. Among the changes was the removal of headings indicating that courses should be taken in U1, U2, or U3. She recommended that in future program revisions, units incorporate the latest university formatting.

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

The motion carried.

(7) <u>MICROBIOLOGY & IMMUNOLOGY</u>

- Program Changes

Honours in Microbiology & Immunology **AC-15-63**

707.1 Prof. Marczynski explained that MIMM 387, The Business of Science, and COMP 364, Tools for the Life Sciences, were being added to the list of Complementary Courses.

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

The motion carried.

Major in Microbiology & Immunology **AC-15-64**

707.2 COMP 364 was being added to the list of Complementary Courses.

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

The motion carried.

Liberal - Core Science Component in Microbiology & Immunology **AC-15-65**

707.3 Again, COMP 364 was being added to the list of Complementary Courses.

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

The motion carried.

(8) INTERDEPARTMENTAL HONOURS IN IMMUNOLOGY PROGRAM CHANGES
AC-15-66

708.1 Prof. Marczynski said that the replacement of BIOC 300D1/D2 with BIOC 220 and BIOC 320 was simply being reflected in the program.

Associate Dean Western **moved**, seconded by Prof. Marczynski, that the change be approved.

The motion carried.

(9) SUS ACTIVITIES **AC-15-67**

709.1 V.-P. (Academic) John Lin gave the following report:

(1) SUS elections have passed and we've introduced a new position, the Executor of Clubs and Services
(a) The role of this position is to oversee future clubs and services under the SUS.
(b) The role will also move Peer Tutoring, Medical Direction and the McGill Undergraduate Research Journal under its portfolio, from various other executive roles.

(2) The SUS will be funding two Pan-Summer Undergraduate Research Awards, and has reallocated some of its budget to do so.
(a) Criteria for receiving an award will be based on personal statements, academic merit and brief research outlines.

709.2 Dean Lennox said the Faculty was collecting information on how departments spend money from the SUS Improvement Fund, and the SUS would in future receive an annual report detailing this. He would appreciate feedback from the SUS on the report.

709.3 Dean Lennox said that the SUS was doing an amazing in its endeavour, including the SUS Improvement Fund, and the Pan-Summer Undergraduate Research Awards.

(10) OTHER BUSINESS

There being no other business, the meeting be adjourned at 5:05 p.m.