

FACULTY OF SCIENCE
Meeting of Faculty
Tuesday, 11 September 2018
Leacock Council Room - L232

ATTENDANCE: As recorded in the Faculty Appendix Book

DOCUMENTS: S-17-40, S-18-1 to S-18-3

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

As is the tradition in the Faculty of Science, Dean Lennox welcomed and congratulated new Assistant Professors. He said the Faculty of Science has some of the world's most exceptional students and in order for that to be matched, the Faculty of Science has been able to attract some exceptional new professors from around the world. Every department hires new professors after conducting rigorous search and assessment processes to find professors with outstanding research and teaching potential, in addition to being very strong contributors in service. The Faculty is privileged to attract these outstanding professors from around the world.

On behalf of the Faculty, Dean Lennox congratulated recently tenured Professors, new Full Professors, and new Emeriti Professors for their outstanding contributions and accomplishments.

New Professors		
Department	Name	Rank
Biology	Arnold Hayer	Assistant
Biology	Jennifer Sunday	Assistant
Biology	Abigail Gerhold	Assistant
Chemistry	Eric McCalla	Assistant
Chemistry	Maureen McKeague	Assistant (Jt. with Dept. of Pharmacology & Therapeutics, Faculty of Medicine)
Computer Science	Reihaneh Rabbany	Assistant
Computer Science	Jin Guo	Assistant
Computer Science	Elizabeth Patitsas	Assistant (Jt.) (Special Category) in the Dept. of Integrated Studies in Education, Faculty of Education & School of Computer Science, Faculty of Science)
Earth and Planetary Sciences	Nagissa Mahmoudi	Assistant
Geography	Christian von Sperber	Assistant

Geography	Grant McKenzie	Assistant
Mathematics & Statistics	Michael Lipnowski	Assistant
Physics	Adrian Liu	Assistant
Physics	Cynthia Chiang	Associate
Physics	Jonathan Sievers	Associate
Psychology	Jessica Flake	Assistant
Psychology	Eric Hehman	Assistant
Tenured Professors		
Department	Name	Rank
Atmospheric & Oceanic Sciences	Timothy Merlis	Associate
Biology	Sarah Woolley	Associate
Earth and Planetary Sciences	Vincent van Hinsberg	Associate
Physics	Jack Childress (Sankey)	Associate
Full Professors		
Department	Name	Rank
Chemistry	Christopher Barrett	Professor
Chemistry	Janine Mauzeroll	Professor
Mathematics & Statistics	Adrian Vetta	Professor
Physics	Matt Dobbs	Professor
Physics	Alexander Maloney	Professor
Emeriti Professors		
Department	Name	
Biology	Dr. Rajinder S. Dhindsa	
Computer Science	Dr. Denis Thérien	
Physics	Dr. Mark Sutton	
Physics	Prof. Jean Barrette	

1) **ADOPTION OF AGENDA**

Prof. Damha **moved**, seconded by Prof. McKenzie, that the Agenda be adopted.

The motion carried.

2) **RESOLUTION ON THE DEATH OF PETER MILNER, EMERITUS PROFESSOR OF PSYCHOLOGY**

Prof. Norman White from the Department of Psychology, read out the resolution on the death of Emeritus Professor Peter Milner.

Peter Milner, a professor in the Department of Psychology from 1956 until his retirement in 1989, died on June 2, 2018, just a few days short of his 99th birthday. Peter was born in England and trained as an electrical engineer at Leeds University. He worked on radar during WW2, and was then sent to Canada with his new wife, a Cambridge-educated psychologist named Brenda Langford Milner, to help develop a nuclear energy research facility at Chalk River Ontario. Mrs Milner soon became a graduate student of D.O. Hebb, who had recently become head of the Psychology Department. Peter read the materials she was studying, in particular, a draft of Hebb's book 'The Organization of Behavior' and decided that studying the brain and behavior was more interesting than engineering. Accordingly, he switched fields and also became Hebb's student. Shortly after receiving his PhD, he was hired as an assistant professor.

While he was a graduate student Milner and a post-doctoral fellow, James Olds, made a fortuitous error while placing an electrode into a rat's brain, and found that the rat would learn to perform almost any response to receive short bursts of stimulation. The phenomenon that came to be known as electrical self-stimulation of the brain was studied by scientists all over the world, resulting in (literally) thousands of publications. Many students were attracted to neuroscience by the phenomenon and became working scientists who have made numerous contributions to the field.

In The Organization of Behavior, Hebb had proposed that perception is based on groups of neurons called 'cell assemblies'. One of Milner's early papers, 'The Cell-Assembly: Mark II', proposed an important modification of Hebb's theory. On the basis of this paper Milner was hired as a consultant by IBM labs to participate in the development of the field that we now know as artificial intelligence.

In 1970, the various notes that he had provided to his classes were combined and published as a textbook, 'Physiological Psychology'. The book was very highly regarded, translated into numerous languages, and dominated its market for several years. His final publication, a monograph called 'The Autonomous Brain', summarized his ideas about the neural basis of attention and learning. Milner trained many graduate and post-doctoral students who became working scientists and teachers at universities all over North America and beyond. These include John Pinel (UBC), W. Mac Burnham (Toronto), Ronald J. Racine (McMaster), Richard J. Beninger (Queens), Graham Goddard (Dalhousie, Otago), Shinshu Nakajima (Dalhousie), Michael Corcoran (Saskatchewan), Aaron Ettenburg (Santa Barbara), Patrick Mason (US Air Force Science and Technology), Imre Szabo (Pecs), Dale Corbett (Memorial), and Keith Franklin (McGill).

In 2005 Milner received the Gold Medal for Distinguished Lifetime Contributions to Canadian Psychology from the Canadian Psychological Association. The award recognized both his major influence on the development of the field now known as Behavioral Neuroscience, and his exceptional contribution of ideas to the understanding of basic psychological processes.

Dean Lennox said that he would consider the resolution as being adopted unanimously.

Dean Lennox said that he would like Prof. Lydon (Chair, Psychology) or Prof. White to read the resolution at the next Senate meeting.

3) **SITTING STUDENT REPRESENTATIVES** **S-18-1**

Dean Lennox read out the list of student members, and welcomed them to the Faculty of Science. He encouraged student members to participate in meetings and to bring up issues of concern, because student voices play an important role in the decision-making process. Dean Lennox added that he would also be available to meet separately with the SUS.

4) **MINUTES OF 22 MAY, 2018** **S-17-40**

Prof. McKenzie **moved**, seconded by Prof. Damha, that the Minutes be approved.

The motion carried.

5) **BUSINESS ARISING FROM THE MINUTES**

There was no business arising from the Minutes.

6) **INTRODUCTION OF THE OFFICE FOR SCIENCE EDUCATION (OSE)**

Dean Lennox said that the Faculty has taken a new initiative to create the Office of Science Education (OSE). This is to recognize that, although the Faculty has for decades led McGill, and often beyond, in teaching and learning innovations, it had not done so systematically, or with a dedicated translational/sharing plan. After having observed the impact that Teaching & Learning Services (TLS), under the direction of Dr. Laura Winer, Director of TLS, has had on guiding course design, curriculum changes, and teaching innovations such as Active Learning Classrooms, the Faculty is now directly partnering with TLS. Dean Lennox said he was delighted that Ms. Marcy Slapcoff of TLS has joined the Faculty of Science as the Director of the OSE for 75% of her time. Because of the importance for both teaching and learning experiences in the Faculty of Science, Prof. Tamara Western is moving into a new role as Associate Dean (Education) for the Faculty of Science. [AC1]Moreover, Dr. Anita Parmar, Associate Director of B21, who spearheaded the AAU STEM Program, will also be joining the OSE team.

Director Slapcoff said she has been working in TLS for the past 12 years. She said her background was in education, working in institutions, higher education, and non-profit organizations. She is thrilled to be part of this new initiative in the Faculty of Science and believes that TLS has done a great job at reaching out across the university. She knows many of the Faculty members, having worked with them, whether integrating more research into the undergraduate curriculum, creating innovative assessment methods, or working in new classrooms or new labs over the years. She has always found it a challenge and an honour to be involved with Faculty who are so committed to teaching and learning. She believes that, with the creation of the OSE, it will be possible to create more of an infrastructure to really support Science, test the effectiveness of new approaches, share findings and share successes.

Dr. Anita Parmar said she has worked with many professors in the Faculty of Science. She has been involved with B21, and with her experience, combining B21 with the OSE was something she was looking forward to.

Associate Dean (Education) and Professor of Biology Tamara Western said she became interested in Science education when she was a graduate student working with a

genetics professor in UBC as a T.A., as well as with a professor in Education, working on active learning techniques to use in genetics tutorials. At McGill, Associate Dean Western said she was involved in teaching very large classrooms, redesigning laboratory courses, and as Associate Dean (Academic) she was involved with more education projects, largely because of her interest and past work with Director Slapcoff at TLS, looking into how to bring research into the classroom. More recently, she said she has worked with Dr. Parmar, bringing graduate students into pedagogical design.

Director Slapcoff said that the goal of the OSE is to align a commitment to teaching and learning with actions that support, recognize and reward effective teaching in the Faculty of Science.

How?

1. Support teaching innovation at the individual, departmental & Faculty levels
2. Collect data about the effectiveness of new approaches to teaching & facilitate Faculty of Science contributions to the scholarship of teaching & learning
3. Collaborate with faculty, students & staff, both within Science & across the McGill community.
4. Develop partnerships with external groups interested in science education.
5. Share findings & celebrate successes

Associate Dean Western added that the Faculty of Science takes great pride in research intensiveness yet it tends to focus primarily on research in the laboratory. However, there is also an opportunity here to do research in the field of the scholarship of teaching and learning, assess how things are working in the classrooms, and publish in that field as well. The OSE will help facilitate creating assessments as the faculty is working on making changes to courses.

As the former Associate Dean (Academic), Associate Dean Western said that the Faculty of Science really values students' feedback. In both the Academic Committee meetings and Faculty meetings, participation is very important in the approval of courses and programs. Additionally, to further expand the participation of undergraduate students, the Tomlinson Education Award for Change (TEACH), which is similar to the Tomlinson Engagement Award for Mentoring (TEAM), will be created.

Associate Dean Western said that the OSE will be reaching out to departments and student societies. The OSE is located in Wilson Hall at McGill, and members are welcome to drop by the office or contact them by email.

7) **REPORTS OF COMMITTEES**

(a) Nominating Committee

S-18-2

1. Science Nominating Committee (for information):

The Nominating Committee consists of the Science Senate Representatives, and almost all are Chairs of the Faculty of Science; the Convenor is Prof. John Gyakum. The Committee approves and recommends memberships to the Faculty of Science committees.

2. Science Chairs' Council (for information):

The Science Chairs' Council serves as an advisory committee to the Dean, and consists of the Dean, the Associate Dean (Academic), the Associate Dean (Education), the Associate Dean (Research), Associate Dean (Graduate Education), the Director of Advising Services, and the heads of all units in the Faculty of Science, including the MSE and the Redpath Museum.

3. Tenure Committee (for information):

The Tenure Committee consists of Faculty of Science representatives and Senate representatives from various faculties.

4. Committee on Student Standing (for approval):

The Committee on Student Standing (CSS) reviews student appeals of decisions made by the Director of Advising Services, Nicole Allard. The new members are Prof. Laura Pavelka (Chemistry) and Prof. Andrew Cumming (Physics).

5. Academic Committee (for approval):

The Academic Committee reviews and approves all academic content taught in the Faculty of Science. The new members are Prof. Clark Verbrugge (Computer Science) and Prof. Andrew Cumming (Physics).

6. Scholarships Committee (for approval):

The Associate Dean of Graduate Education serves as the Chair of the Scholarships Committee. The Committee is also made up of department representatives. The new members are: Prof. Nicolas Moitessier (Chemistry), Prof. Tim Hoheisel (Mathematics & Statistics), and Prof. Jacques Archambault (Microbiology & Immunology).

7. Leo Yaffe & Principal's Prizes Committee (for approval):

The Leo Yaffe and Principal's Prizes Committee recommends candidates for these awards for excellence in teaching. The new members are Prof. Gary Brouhard (Biology) and Prof. Masad Damha (Chemistry).

8. Council of Graduate and Postdoctoral Studies (for approval):

Representatives of all faculties sit on the Council of Graduate and Postdoctoral Studies.

9. B.A. & Sc. Program Administration Committee (for approval):

The B.A. & Sc. PAC reviews changes to, and coordinates the administration of, the B.A. & Sc. degree programs. Only the Science membership is for approval by the Faculty of Science. The new members are: Associate Dean (Academic) Axel Hundemer (Chair), Prof. Derek Ruths (Program Director), and Prof. Alanna Watt (Biology).

Prof. Lydon **moved**, seconded by Prof. Gyakum, that the membership of the above Faculty committees be approved.

The motion carried.

Dean Lennox thanked members for agreeing to serve on the above Faculty Committees.

(b) Scholarships Committee

S-18-3

Associate Dean Nilson said that the Scholarships Committee Report lists awards given to continuing students based on their academic performance for the 2017-2018 academic year. The SGPA cut-off for receiving a Faculty award was 3.97, and this was the same cut-off as in 2016-2017. There were a total of 388 awards given out. This consisted of named awards, provided by generous donors, as well as the Dean's contribution to top up these awards to ensure that all of the students with a 3.97 SGPA received comparable awards. Associate Dean Nilson thanked the Faculty donors for their generosity in making these awards possible. In addition, the top 10% of students in the Faculty are named to the Dean's Honour List (DHL). The cut-off for the DHL was 3.96 SGPA for B.Sc. students, and 3.89 SGPA for B.A. & Sc. students.

Dean Lennox reiterated that it is through the generosity of the Faculty's alumni and the Friends of McGill, that he is able to acknowledge outstanding students and reward them.

On behalf of the Faculty, he would also like to extend thanks and appreciation for making these awards possible. Dean Lennox thanked Associate Dean Nilson for her report and for her comments.

8) **DEAN'S BUSINESS**

- Announcements

(i) ***The Royal Victoria Project:***

Dean Lennox said that on 24 May 2018, the Québec government authorized McGill to develop the design for the Royal Victoria Project. The university will receive \$37M at this stage for pre-design, and the project will cost roughly \$650M in total. In the next two years, McGill will complete the planning stages. The Faculty of Science will have a significant presence in the new Royal Victoria site. Dean Lennox said he will be presenting the Academic Plan and the pre-design, as it currently exists, to a Faculty meeting in the Fall of 2018. There will be wide consultation in the form of Town hall meetings and departmental presentations.

(ii) **2018 Undergraduate Research Conference**

On Thursday, 4 October 2018, the 14th Annual Faculty of Science Undergraduate Research Conference will be held. There will be a poster competition starting at 2:00 p.m. in the lobby of the Arts building. A panel of expert judges will adjudicate the projects. At 5:00 p.m., Associate Dean (Research) John Stix will give the keynote address in Moyse Hall. This will be followed by the prize ceremony, and a reception in the lobby of the Arts Building. Dean Lennox encouraged faculty members to attend this important and deserving event.

Secretary's Note: The keynote talk was entitled "Having fun with research as a student and a professor."

b) **UPDATE ON COMMUNICATIONS IN THE FACULTY OF SCIENCE**

Dean Lennox introduced Mr. Fergus Grieve, Communications Strategist for the Faculty of Science. Mr. Grieve gave the following update on the Faculty's strategic communications plan.

The premise of this plan is that a consistent, purposeful approach to communications will help the Faculty of Science achieve its objectives. The first section of this plan identifies areas of the Faculty's activities where the task of communication requires especial attention; it sets out the principles that will guide our approach to communications in these areas; and it lists action items with respect to each of these principles. The second section expands on these action items, providing more detail on how they will be implemented. The details of the plan are found in Attachment #1 to the Minutes.

Mr. Grieve thanked members for their time and interest. He said that he welcomed members' comments and suggestions.

Dean Lennox said he could not overstate how complex it is to implement a communication strategy. He said that Mr. Grieve brings the professional experience required for this. Dean Lennox said that receiving feedback on different perspectives is valuable.

9) **REPORTS OF ASSOCIATE DEANS**

a) Director (Advising Services) Nicole Allard

Director Allard said she would like to take the opportunity to thank everyone involved with orientation on Discover McGill Day. She said that staff went above and beyond what was

required of them, especially considering the very hot conditions in the Gym. Director Allard asked Chairs/Directors to pass on the message to all staff involved with the orientation.

b) Associate Dean (Academic) Axel Hundemer

Associate Dean Hundemer gave a brief update on enrolment statistics. He said that after the Add/Drop period, he would present the final report at the Faculty meeting scheduled for 23 October 2018. He said that interest in the B.Sc. degree has increased in almost all admission groups. The number of applications from overseas high schools has increased by 25%. Moreover, applications from CEGEPs, Ontario high schools, and high schools in the rest of Canada have increased, whereas the applications from U.S. high schools have decreased by about 10%.

Associate Dean Hundemer said that, as of 11 September 2018, U0 and U1 enrolment have increased by 4%, but that U1 enrolment has slightly decreased; however this is counterbalanced by an increase in U0 compared to Fall 2017. However, since enrolment in U0 Engineering has decreased, the increase in U0 Science enrolment could make up for the difference. There is a slight decrease in the BBL programs. However, there has been a vast increase in enrolment in the PEMC programs, which is likely due to increased interest in Computer Science.

c) Associate Dean (Graduate Education) Laura Nilson

(1) NSERC USRAs and Science Undergraduate Research Awards (SURAs):

Associate Dean Nilson reported on Summer research awards, USRAs and SURAs. The NSERC USRAs are funded by NSERC and supplemented by the supervisor, and SURAs are funded by the donor and/or the Faculty and supplemented by the supervisor. For Summer 2018, there were 68 USRA recipients and 91 SURA recipients, totalling 159 students engaged in Summer research.

Social Equity SURAs:

Associate Dean Nilson drew members' attention to different types of SURAs, namely, Social Equity SURAs, for research in Social Equity, Diversity and Social Justice. These are funded by philanthropy, and the research projects focus on a social equity component. Associate Dean Nilson said that she wanted to inform members that SURA funding is available for social equity research projects.

In Summer 2018, the Faculty funded Social Equity SURAs to three students in the following units:

Department of Psychology:

Project title: Investigating the status of women cognitive neuroscientists in Canada using publicly available funding data

Department of Chemistry:

Project title: Assessing family care givers' needs and orienting policy making on pregnant or breastfeeding lab students

Faculty of Education:

Project title: Networks of support for underrepresented students in STEM: Identifying spaces for persistence and success

(2) myProgress:

Associate Dean Nilson said an online tracking tool named myProgress allows Graduate Program Coordinators, Graduate Program Directors, and graduate students themselves to keep track of requirements and research milestones for completing a graduate degree.

The motivation for myProgress is to streamline and to aid graduate students to keep track of their progress.

(3) myIDP (Individual Development Plan):

Associate Dean Nilson said that another GPS tool that will be launched is myIDP, which is a resource that is being provided to graduate students. It allows them, from very early in their graduate degree, to start thinking about their career goals and to develop their plans for the future so that they will be able to take advantage of the different resources available at McGill. It also helps them develop their credentials to complement their research training to set them on the right path for their post-degree careers.

(4) Graduate Mobility Awards (GMAs):

Associate Dean Nilson said that the GMAs will be offered again for the 2018-2019 academic year. The GMAs are funded by an allocation from the University and are intended to support graduate student mobility for research-related (i.e., not conference) travel. In 2017-2018, there were 66 GMA applications, and a total of 50 GMAs were given out, totalling \$131,000. For 2018-2019, the GMA budget allocation for the Faculty of Science has increased. The deadline for the first round of GMA applications for 2018-2019 will be 1 November 2018. An announcement about application instructions and deadlines will be communicated to GPCs and GPDs in the next couple of weeks.

d) Associate Dean (Research) John Stix

Associate Dean Stix said that he was looking forward to working with members of the Faculty of Science to enhance research in the Faculty. He said that members should feel free to contact him to discuss new initiatives, to answer research-related questions, and to make suggestions, etc. He will be working closely with Eduardo Ganem Cuenca, Research & Grants Facilitator, and that both Eduardo and he are the Faculty's key people for research-related issues.

(1) CFI-10 Applications:

CFI-10 applications are due on 20 September 2018. Associate Dean Stix said that Faculty members interested in applying should submit a one-page description for their anticipated research project.

(2) Faculty Equipment Competition:

The deadline to submit a two-page proposal for equipment is 1 October 2018. \$65,000 is available from the Faculty of Science to fund small equipment items. This will be open to any researcher in the Faculty. The proposals should be submitted to Eduardo Ganem Cuenca (eduardo.ganemcuenca@mcgill.ca) by the deadline.

(3) CFI-JELF Competition:

McGill has recently launched a CFI-JELF competition for funding infrastructure projects valued between \$200,000 and \$2M. The McGill deadline is 31 October 2018. Associate Dean Stix said that this would be ideal for medium-size projects.

Secretary's Note: The Faculty of Science deadline is 19 October 2018.

10) MEMBERS' QUESTION PERIOD

Dean Lennox said that any Faculty member may submit a written question prior to a Faculty meeting in order to allow time for review. He said that, although he did not receive any questions prior to the current meeting, he would be prepared to answer any questions. There were no members' questions.

11) **OTHER BUSINESS**

Dean Lennox invited members to the Beginning-of-Term Reception, to meet with their colleagues.

There being no further business, Prof. Lydon **moved**, seconded by Prof. Fussmann, that the meeting be adjourned at 4:33 p.m.

The motion carried.