

**FACULTY OF SCIENCE
Meeting of Faculty
Tuesday, May 24, 2011
Redpath Museum Auditorium**

ATTENDANCE: As recorded in the Faculty Appendix Book.

DOCUMENTS: S-10-27 to S-10-36

Dean Grant called the meeting to order at 3:04 p.m.

Dean Grant welcomed members to the last meeting of the academic year. He said that this meeting was always the best attended, perhaps because of the reception in the Redpath foyer that would follow the meeting.

(1) ADOPTION OF AGENDA

Prof. Barrette **moved**, seconded by Prof. Burns, that the Agenda be adopted.

The motion carried.

(2) (a) RESOLUTION ON THE DEATH OF EMERITUS PROF. JAL CHOKSI, DEPARTMENT OF MATHEMATICS & STATISTICS

902.1 Prof. Niky Kamran from the Department of Mathematics & Statistics, read a formal resolution on the death of Emeritus Professor Jal Choksi.

It is with regret that I must inform the Faculty that Professor Jal Choksi died on March 30, 2011.

Jal Choksi joined the Department of Mathematics and Statistics in 1968, first as a visiting professor, then on the regular staff from 1971, becoming a Full Professor in 1976 and an Emeritus Professor in 2000. His path to McGill was a long one. Born into Bombay's Parsi community in 1932, he moved to England in the 1950's, first obtaining an undergraduate degree in Mathematics at Cambridge in 1954, then a doctorate in Mathematics at Manchester in 1957. From then, he had a six-year stint at the Tata Institute for Fundamental Research in Bombay in the early sixties, then temporary appointments at Yale and Illinois.

Jal's area of research was mathematical analysis, and in particular ergodic theory, an abstraction of problems arising in statistical physics, whose concern is what happens to physical systems as they are allowed to run for a long time. This is a deep and difficult area of mathematics, where the significant questions are often formidably difficult to tackle. The development of this subject during the 20th century was shaped by the contributions of Poincare, Birkhoff, Von Neumann, Kolmogoroff, Sinai and Kakutani. Jal's work was well respected by the leaders in the field. In particular, he was invited to Yale by Kakutani, with whom he had a successful research collaboration. Jal's knowledge of classical analysis was broad and deep, and his scholarship was exemplary. His last paper, written after he became an Emeritus Professor and published in *l'Enseignement Mathematique*, is a masterly account of Vitali's Convergence Theorem on term by term integration, in which he untangles the precise nature of the contributions made by Lebesgue, Beppo Levi, Fatou and Riesz, bringing to light some facts which were not captured in Hawkins' otherwise excellent treaty on the history of Lebesgue integration.

It is a sign of the esteem in which he was held by his colleagues that he was the person chosen in 1979 to replace Edward Rosenthal as Chair. Rosenthal started as Chair in 1962, occupied the position for 17 years, and was the Department's father figure, and so Jal's tenure as Chair was a major transition. His time marked the beginning of the Department's program of academic renewal, after the mid-seventies doldrums. He continued, after his stint as Chair, as a valued advisor on the Department's academic development.

If one should describe Jal's way of being in a few words, it is one of calm wisdom, combined with amusement at the world's follies, with the odd sign of irritation showing through. He cared deeply about his job, and in particular about students; they often confided in him, and he was mentor to more than one. Jal supervised four Ph.D. students over the course of his career, and he kept close relations with each of them. His breadth of knowledge was wide, and not only of mathematics, but also of literature, and in particular of music, in which his knowledge was encyclopaedic, and deep; a passion that went all the way back to his youth. An anecdote amongst many that reveals the depth of his knowledge of music concerns the coda of the first movement of the Beethoven violin concerto, where Jal knew the precise differences in the orchestral score between the various versions composed by Beethoven, and could comment with authority on the choices made by the main interpreters of this concerto since the early recordings of Fritz Kreisler, issued in the 1920's.

The Faculty of Science extends its condolences to Jal Choksi's beloved wife, Shernaz, his children Rustum, Anjali and Jahangir, their partners and his grandchildren.

The resolution carried unanimously.

**(b) RESOLUTION ON THE DEATH OF EMERITUS PROF. ANDREAS P. CONTOGOURIS,
DEPARTMENT OF PHYSICS**

902.2

Prof. Jean Barrette, Department of Physics, read a formal resolution on the death of Emeritus Professor Andreas P. Contogouris.

Faculty of Science members, it is with regret that I inform you of the death of Emeritus Professor of Physics Andreas P. Contogouris in Montreal, on March 18, 2011 at the age of seventy-nine. After his PhD in theoretical physics at Cornell University, he held positions in Athens, at CERN (Geneva, Switzerland), and at the Université de Paris-Sud (Orsay, France). Andreas arrived at McGill University in 1968 as a tenured associate professor. He rose through the ranks, and retired as a Full Professor in 1993. He was made Professor Emeritus on September 1st, 2009.

Andy (as he was known in Physics) Contogouris was a theoretical physicist, and most of his work was in the field of particle physics. His theoretical work has contributed much support and interpretation for the many results that came out of the experimental collaborations working during what now appears as the "Golden Years" of particle physics. He was an expert in the calculation of electromagnetic radiation by strongly interacting systems, an area that requires a combination of precise techniques and physical intuition. Professor Contogouris has written in excess of one hundred and fifty refereed papers and conference proceedings, and several of these contributions have stood the test of time and are now considered classic results.

Andreas Contogouris was a passionate man, well known for his total devotion to physics, and for his high research standards. He has continued to train a continuous stream of graduate students and postdoctoral fellows up to his retirement. After leaving McGill, he took up an appointment at the University of Athens, where he pursued his research interests.

The Faculty of Science extends its condolences to Professor Contogouris' wife, Iris Angelidis, to his daughters Myrto and Ersy, grandsons Sam, Ben, Aidan, Jason, and Jasper, and to his friends. We have lost a colleague who greatly enriched the life of this university.

The resolution carried unanimously.

**(c) RESOLUTION ON THE DEATH OF EMERITUS PROF. EDWARD J. STANSBURY,
DEPARTMENT OF ATMOSPHERIC & OCEANIC SCIENCES**

902.3 Prof. John Gyakum, Chair of the Department of Atmospheric & Oceanic Sciences, read a formal resolution on the death of Emeritus Professor Edward J. Stansbury.

Dr. Edward J. Stansbury, Emeritus Professor of Meteorology in the Department of Atmospheric and Oceanic Sciences, passed away in February 2011. Professor Stansbury was affiliated with the Department of Physics from 1956 until his retirement in 1986, while also participating in the Professor Stewart Marshall's Stormy Weather Group.

He was born in Oakville, Ontario on August 1, 1927, earned his B. A. in Mathematics and Physics at the University of Toronto in 1949, and an M. A. (1950) and Ph. D. in Physics (1952), also from the University of Toronto. He held positions as a Research Assistant at the U. of T. and at Bell Telephone Laboratories before arriving at McGill University in 1956. He joined the Eaton Lab, participated in electron beam studies, and later in a study of physical processes involved in the formation of the "E-cathode". In 1959, he joined Dr. Marshall's Stormy Weather Group in the study of nucleation of ice. This research led to the publication of seminal work, with his Ph. D. student, Gabor Vali, which still stands as the most adequate theory of heterogeneous ice nucleation.

While research and teaching were a major focus of Dr. Stansbury's career, the university was quick to recognize his administrative talents and appointed him Associate Dean for Student Affairs and later Dean of the Faculty of Arts and Science. In 1971, he was appointed Dean of the Faculty of Science, a position he held until his appointment as Vice-Principal (Planning) in 1976. During his 10 years of service as V.-P. until his retirement in 1986, Dr. Stansbury was instrumental in transforming McGill from a "private" university to a special Quebec "public" university, in which McGill achieved the same level of government funding as other Quebec universities. He represented McGill skilfully and professionally during this long tenure. He was well known both inside and outside the university for his insight and thoughtful approach to all challenges, and was highly respected for his expertise and knowledge of the Quebec system of higher education.

Ted Stansbury was an avid lover of music, and Scottish country dancing. His keen intellectual curiosity was evidenced by his regular attendance at McGill seminars until very recent years. Dr. Stansbury epitomized the gentlemen scholar, with his kindness, intelligence, and a quiet, thoughtful reserve. He will be sorely missed by his colleagues and former students. The Faculty of Science offers its most sincere condolences to his family.

The resolution carried unanimously.

(3) **REPORTS OF COMMITTEES**

a) **Faculty of Science Excellence Award**

903.1 The Faculty of Science Excellence Award rotates yearly among “M,” “C,” and “T” classifications. For the 2010-2011 year, it was being given to a “C.”

903.2 Prof. Doina Precup, Chair of the Faculty of Science Excellence Award Committee, introduced the award.

903.3 The Committee consisted of:

Diane Koziol (M), Department of Physics
Doina Precup, (Chair), School of Computer Science
Frank Scopelleti (T), Department of Biology
Angela White (C), Department of Mathematics & Statistics

903.4 The following people were nominated:

Linda Bray, School of Computer Science
Jackie Castreje, Department of Mathematics & Statistics
Louise Decelles, Department of Physics
Kristy Thornton, Department of Earth & Planetary Sciences

903.5 Prof. Precup said that the committee had had a very difficult job, because of the outstanding profiles of all the nominees, and their invaluable contributions to the Faculty.

903.6 Prof. Precup read the following citation:

The Faculty of Science Excellence Award goes to **Louise Decelles**, from the Department of Physics. Louise stood out not only for her dedication, energy and competence in her usual duties (such as dealing with the undergraduate students taking undergraduate physics courses), but also for actions that go beyond her job. She has initiated, with Diane Koziol, a series of lunchtime talks by professors for staff members, which won a national award from the Canadian Association of University Business Officers in 2007. This initiative has since morphed into the very popular STARS series. Louise has also spearheaded significant charity efforts in the department every year.

903.7 Dean Grant, on behalf of the Faculty of Science, congratulated **Louise Decelles** and presented her with a certificate and flowers.

903.8 Ms. Decelles thanked everyone in the Department of Physics. She said that the Department of Physics was the best department at McGill, and that she was very fortunate to work for Prof. Charles Gale, Chair of the Department, and to have as her supervisor Diane Koziol, and as her colleague Sonia Vieira. She said that the best professors were in Physics, and Physics had also produced the best Dean. She emphasized that she was very pleased to be a member of the Department of Physics, because of the mutual respect there among people.

903.9 Dean Grant thanked the Chair, Prof. Precup, and the other members of the Faculty of Science Excellence Award Committee for all their hard work.

b) Leo Yaffe Teaching Award

903.10 Prof. Edith Zorychta, Chair of the Leo Yaffe Teaching Award & Principal's Prizes, introduced the Leo Yaffe Teaching Award for the Faculty of Science.

903.11 For the 2010-2011 year, the Committee consisted of:

Christopher Barrett, Department of Chemistry
 Vojkan Jaksic, Department of Mathematics & Statistics
 Martin Lechowicz, Department of Biology
 Craig Mandato, Department of Anatomy & Cell Biology
 Wayne Pollard, Department of Geography
 Edith Zorychta (Chair), Department of Psychology
 Students:
 Katherine Daignault (Mathematics, Classics)
 Natalie Talmi (Chemistry)

903.12 Prof. Zorychta read out the names of the nominees. She strongly encouraged departments to re-nominate professors who had already been nominated, and to nominate more professors in future years. She added that the nominating process had been streamlined.

903.13 The nominees were:

Antony Humphries, Department of Mathematics & Statistics
 Michael Langer, School of Computer Science
 John Lydon, Department of Psychology
 Kenneth Ragan, Department of Physics

903.14 Prof. Zorychta read the following citation:

The Leo Yaffe Award is given each year to recognize a faculty member for superior teaching at the undergraduate level in the Faculty of Science. The recipient for 2011 is **Professor Kenneth Ragan** from the Department of Physics, an exceptional teacher who has had a remarkable influence on thousands of McGill students.

Professor Ragan joined McGill in 1990 and immediately distinguished himself as a highly competent and enthusiastic teacher, redesigning and teaching a range of undergraduate courses from the entry level to the most advanced, while simultaneously establishing a very successful research program in astroparticle physics. Student evaluations of his teaching were consistently high across the entire spectrum of courses, but Kenneth's talent eventually led him to concentrate on one of the greatest educational challenges in his field - teaching physics to large classes of first year undergraduates who are usually obliged to study physics as part of their program, and are often completely intimidated by the subject. He has transformed the intellectual approach of many such individuals, who walk into his first class expecting to be terrified or bored, and walk out at the end of the term with an understanding and appreciation of physics that they could not have imagined possible.

When describing Professor Ragan, students repeatedly emphasize his ability to captivate their attention in the classroom – that he is funny, witty, energetic, entertaining, and a good showman. He is passionately enthusiastic about physics, in a manner that students find contagious, and many are surprised to discover that they look forward to physics classes for the first time in their lives.

They particularly appreciate his ability to demystify the theories of physics by linking course material to everyday life, deepening their understanding of the world around them. They consistently evaluate him as one of their best professors, with numerical scores of 4.3 - 4.8 on a scale with 5 as the maximum.

Professor Ragan has investigated a variety of teaching methods and technologies while planning his classes for over 700 students and he has incorporated a number of these into his lectures in order to facilitate student learning. Among his innovations, the in-class demonstration is a special feature that consistently evokes the most appreciative comments. As described by one of his former students: *“ Two years after taking his course, I can’t say that I remember all the formulas he taught us by memory, but I can vividly recall the demonstrations he did in class and the principles that these demonstrations conveyed. He is the only professor I have had that has brought in all kinds of props to demonstrate difficult concepts and make them relevant to our lives, while both entertaining and fascinating us. He taught us that physics can truly be more than a simple subject taught in a textbook, but that the laws of physics dictate everything around us and that physics can allow us to understand and explain our world.”*

In addition to his ability in the classroom, students frequently comment that Professor Ragan genuinely cares about them, and is dedicated to their success as individuals. He spends a lot of time answering questions after class, giving tutorials, responding on discussion boards and providing career advice. This can be particularly beneficial to new students, who are making the transition to university and are often away from home for the first time.

In summary, Professor Ragan is an exceptionally capable and dedicated teacher who communicates the excitement and relevance of science to McGill undergraduates at a critical phase in their education. In the words of one of his former students, he is *“very enthusiastic about physics; you can clearly tell he loves teaching as well as the science of physics itself; he is an A+ Professor”*. Kenneth Ragan’s accomplishments as a teacher are widely recognized within the Department of Physics and the entire Faculty of Science, and he is a most deserving recipient of the Leo Yaffe Award.

903.15 On behalf of the Faculty of Science, Dean Grant congratulated Prof. Ragan, who unfortunately could not attend the current meeting.

903.16 Dean Grant thanked the Prof. Zorychta and the Committee members for their diligent work on the Leo Yaffe Teaching Award Committee.

(4) CANDIDATES FOR DEGREES

904.1 Director Allard thanked Mr. Peter Barry, Chief Academic Adviser, all the SOUSA advisors, and all departmental advisors and undergraduate coordinators, for their conscientious hard work during the graduation process.

a) Bachelor of Arts and Science S-10-28

904.2 Director Allard said that 68 students were graduating with the B. A. & Sc. degree. The CGPA cut-off for the Dean's Honour List (top 10%) for B.A. & Sc. students was 3.79. The cut-off for the designation of Distinction (the next 15% below the top 10%) was 3.69.

Director Allard **moved**, seconded by Prof. Burns, that the above degree list be recommended to the Senate Steering Committee for the Bachelor of Arts and Science degree.

The motion carried.

b) Bachelor of Science S-10-29

904.3 Director Allard said there were 692 students graduating with the B.Sc. degree, and the Dean's Honour List cut-off was 3.88. The Distinction designation cut-off was 3.72.

Director Allard **moved**, seconded by Mr. Barry, that the above degree list be recommended to the Senate Steering Committee for the Bachelor of Science degree.

The motion carried.

c) Diploma in Environment S-10-30

Director Allard **moved**, seconded by Mr. Barry, that the above list containing three candidates be recommended to the Senate Steering Committee for the Diploma in Environment.

The motion carried.

d) Diploma in Meteorology S-10-31

Ms. Allard **moved**, seconded by Prof. Ryan, that the above list of three candidates be recommended to the Senate Steering Committee for the Diploma in Meteorology.

The motion carried.

Director Allard further **moved**, seconded by Prof. Burns, that the Dean be given discretionary power to make such changes in the degree list as would be necessary to prevent injustice.

The motion carried.

(5) MINUTES OF APRIL 5, 2011 S-10-27

Prof. Barrette **moved**, seconded by Prof. Gyakum, that the Minutes be approved.

The motion carried.

(6) BUSINESS ARISING FROM THE MINUTES

There was no business arising from the Minutes.

(7) REPORTS OF COMMITTEES (continued)

c) Committee on Student Standing S-10-32

907.1 Due to lack of business, there was no CSS report.

d) Scholarships Committee S-10-33

907.2 Associate Dean Grütter thanked the Scholarships Committee and the Moyse Travelling Scholarship Sub-committee, as well as Josie D'Amico and Malek Yalaoui for their work on scholarships.

Director Allard **moved**, seconded by Mr. Barry, that the course be adopted.

The motion carried.

GEOG 514	Clim Change Vulnblty & Adapt 3 credits	AC-10-70
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907.10 Director Allard said that GEOG 514 had been developed for the B.A. & Sc. Interfaculty Program in Sustainability, Science and Society.

Director Allard **moved**, seconded by Mr. Barry, that the course be adopted.

The motion carried.

SECTION C: Minor Course Changes (For Information Only)

1. Psychology

- **Changes in prerequisites**

PSYC 211	Intro Behavioural Neuroscience 3 credits	AC-10-72
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PSYC 483	Sem. in Exp. Psychopathology 3 credits	MCC-10-31
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- **Changes in description**

PSYC 450D1/D2	Research Project & Seminar 9 credits	MCC-10-32
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PSYC 498D1/D2	Senior Honours Research 9 credits	MCC-10-33
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907.11 Director Allard said that the above minor course changes were to clarify course descriptions (PSYC 450 and PSYC 498), and to make changes in prerequisites to provide proper background (for PSYC 211, addition of freshman biology courses, and for PSYC 483, addition of another 300-level course).

2. Microbiology & Immunology

- **Changes in title and prerequisites**

MIMM 387	The Business of Science 3 credits	AC-10-71
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907.12 Director Allard explained that the changes in title and prerequisite courses for MIMM 387 were in anticipation of the revamping of the Minor in Technological Entrepreneurship for Science Students, which is no longer taught by the Faculty of Management.

SECTION D: New Ad Hoc Program

- **B.A. & Sc. Joint Honours in Earth System Science & Political Science** **AC-10-51 (Revised)**

907.13 Director Allard briefly described the above ad hoc program, and said that the program contained 42 credits (24 credits required, 18 Complementary credits), plus a further six credits of advanced courses.

Director Allard **moved**, seconded by Prof. Gyakum, that the B.A. & Sc. ad hoc program be approved.

The motion carried.

(8) DEAN'S BUSINESS

a) Dean's Multidisciplinary Undergraduate Research List (DMURL) S-10-35

908.1 Associate Dean Grütter said that the DMURL recognized undergraduate students who had done research in a field other than their primary area. He congratulated the students named in Document S-10-35, and encouraged other students to undertake multidisciplinary research.

b) Research Innovation and Commercialization

908.2 Dean Grant said that the Faculty wished to recognize members whose inventions merited filing of a first patent application in the previous 12-month period. For the 2010-2011 academic year, these were:

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|---------------------|--------------------|
| 1. James Gleason | 6. Theo Van de Ven |
| 2. Derek Gray | 7. Karine Auclair |
| 3. Doina Precup (2) | 8. Bill Chan |
| 4. Youla Tsantrizos | 9. Masad Damha |
| 5. Pat Kambhampati | 10. Joelle Pineau |

908.3 Dean Grant presented certificates to the above people, and congratulated them.

908.4 Student co-inventors were also recognized, with certificates presented at departmental events.

908.5 Similarly, the Faculty recognized new Licenses signed in the previous 12-month period for intellectual property developed by a Faculty of Science researcher. In 2010-2011, these inventors were:

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|----------------|-----------------------|--------------------|
| 1. Masad Damha | 2. Nicolas Moitessier | 3. Isztar Zawadzki |
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908.6 Dean Grant extended warm congratulations to the above three inventors.

c) Fessenden Prizes and Professorships

908.7 Dean Grant said that Fessenden Prizes recognize achievements in innovative research with commercialization potential. In 2011, four student prizes were awarded, but there were no faculty applicants.

Undergraduate prize in Science Innovation:
Volodymyr Kuleshov - Pricing mechanisms for bandwidth and electricity markets

Graduate prize in Science Innovation:
Fabiano Pandozzi - Portable, non-invasive instrument for the analysis of the brain and surrounding fluids
Aleks Labuda - A user-friendly optical beam deflection system
Gregor Lucic - A crowd-sourced CO₂ assay for the Montreal urban environment.

908.8 Dean Grant explained that Fessenden Professorships promote the development of spin-off companies and technologies based on intellectually rigorous research. In 2011, two Fessenden Professorships were awarded to:

Prof. Youla Tsantrizos to further develop novel inhibitors of the human FPPS and GGPPS enzymes, which are implicated in several diseases including cancer and neurodegenerative disorders.

Prof. David Burns to further develop a smart ultrasound sensitive hydrogel sensor platform.

908.9 Dean Grant, on behalf of the Faculty, congratulated the Fessenden Prize winners and the new Fessenden Professors.

(9) RESULTS OF SCIENCE ELECTION FOR SENATE

S-10-36

909.1 Dean Grant announced the newly elected Science Senators, who would begin their terms in the 2011-2012 academic year. He said that their terms will end in August 2014.

Prof. Peter Grütter (Physics)
 Prof. Andrew Hynes (Earth & Planetary Sciences)
 Prof. Bruce Lennox (Chemistry)
 Prof. Nigel Roulet (Geography)

909.2 Continuing Faculty representatives on Senate, and remaining years to serve, are:

Prof. Gregory Dudek (Computer Science)	- two years
Prof. Charles Gale (Physics)	- two years
Prof. John Gyakum (Atmospheric & Oceanic Sciences)	- two years
Prof. David Harpp (Chemistry)	- one year
Prof. Jacques Hurtubise (Mathematics & Statistics)	- two years

909.3 Dean Grant congratulated the newly elected Senators, and thanked the continuing Senators.

(10) REPORT ON ACTIONS OF SENATE

Please note that the entire Minutes of Senate are available on the Web at <http://www.mcgill.ca/senate/minutes/>.

Senate Meeting of April 27, 2011 - Prof. R. Sieber

910.1 Dean Grant said that Prof. Sieber was unable to report and that another Science Senator would be reporting at the first Fall Faculty of Science meeting.

Senate Meeting of May 18, 2011 - Prof. G. Dudek

910.2 Dean Grant said that since Prof. Dudek was out of town, he would report on the Senate meeting of May 18, 2011 at the first Faculty of Science meeting in the Fall.

(11) MEMBERS' QUESTION PERIOD

There were no members' questions.

(12) OTHER BUSINESS

- 912.1** Dean Grant invited members to the end-of-year Celebration, and to Science Convocation, to be held on May 30, 2011. He thanked members, and said he was looking forward to seeing them at the first Faculty meeting of the 2011-2012 academic year, to be held in the Fall.
- 912.2** There being no further business, the meeting adjourned at 3:45 p.m.