McGill

Report of the
Academic Policy Committee D14-25

460th REPORT OF THE ACADEMIC POLICY COMMITTEE TO SENATE
On APC meeting held on November 20th 2014

I. TO BE APPROVED BY SENATE

(A) NEW TEACHING PROGRAMS REQUIRING SENATE APPROVAL (approvals of new minors and options added to existing programs and major revisions to programs are reported in Section IV.A.1.a. for information) - *none*

(B) ACADEMIC PERFORMANCE ISSUES / POLICIES / GOVERNANCE/AWARDS

Regulations on Cyclical Academic Unit Reviews – *Appendix A*
At a meeting on November 20th, 2014, APC reviewed the changes made to the Regulations on Cyclical Academic Unit Reviews, after the Cyclical Unit Review Office conducted a review of its operation, mandated by APC. This led to procedural and operational changes and to the modification of the Regulations on Cyclical Academic Unit Reviews. These revisions reflect the feedback obtained from past review committees and aim at streamlining and improving the review process.

APC therefore recommends that Senate approve the following resolution:

Be it resolved that Senate approve the proposed Regulations on Cyclical Academic Unit Reviews

Policy on late withdrawals – *Appendix B*
At a meeting on November 20th, 2014, APC reviewed the proposal for a Policy on late withdrawals. The current practice in most faculties at McGill is to record a "W" as the final grade if a student is allowed to withdraw late for mental health (and other approved) reasons. The recording of a "W" on an official transcript reportedly causes anxiety and prejudice to students, especially when applying for graduate school or professional programs. The goal of this Policy is to set accurate, fair and compassionate guidelines to address difficult situations students may encounter, such as mental and physical illness and personal tragedies. It stipulates that, in the event of a full term withdrawal warranted by such difficulties (and approved by the Associate Dean or the Director of the program), courses and grades may be removed from the official transcript. They will however stay on the advising transcript in Minerva.

APC therefore recommends that Senate approve the following resolution:

Be it resolved that Senate approve the proposed Policy on Late Withdrawals

(C) CREATION OF NEW UNITS / NAME CHANGES / REPORTING CHANGES

Proposed name change for the McGill Centre for the Study of Host Resistance – *Appendix C*
At a meeting on November 20th, 2014, APC reviewed and approved a proposal to refocus and change the name of the McGill Centre for the Study of Host Resistance to McGill International TB Centre (MITBC), which will bring together researchers with a common interest but different backgrounds and expertise. The MITBC will help foster trans-disciplinary groups and actively promote interdisciplinary research to establish a focal point of global excellence in translational

Tuberculosis (TB) research. This centre will gradually become a major partner in national and international TB control programs, and have better access to international funding that is hard to secure as individual researchers or smaller groups.

APC therefore recommends the following resolution:
Be it resolved that Senate approve the proposed name change for the McGill Centre for the Study of Host Resistance to McGill International TB Centre (MITBC) and so recommend to the Board of Governors.

(D) CHANGES IN DEGREE DESIGNATION - *none*

(E) INTER-UNIVERSITY PARTNERSHIPS – *none*

(F) OTHER – *none*

II. TO BE ENDORSED BY SENATE / PRESENTED TO SENATE FOR DISCUSSION – *none*

III. APPROVED BY APC IN THE NAME OF SENATE

(A) DEFINITIONS – *none*

(B) STUDENT EXCHANGE PARTNERSHIPS / CONTRACTS / INTERUNIVERSITY PARTNERSHIPS

a) Faculty-wide partnerships

b) Faculty-specific partnerships

(C) OTHER - *none*

IV. FOR THE INFORMATION OF SENATE

A) ACADEMIC UNIT REVIEWS
B) APPROVAL OF COURSES AND TEACHING PROGRAMS

1. Programs

a) APC approvals (new options/concentrations and major revisions to existing programs)

i. Major revisions of existing programs - *none*

b) APC Subcommittee on Courses and Teaching Programs (SCTP) approvals (Summary reports: http://www.mcgill.ca/sctp/documents/)

i. Moderate and minor program revisions

Faculty of Agricultural and Environmental Sciences
Approved by SCTP on 16th October 2014, reported to APC on 20th November 2014
B.Sc. (Ag.Env.Sc.); Specialization in Applied Ecology (24 cr.)
B.Sc. (Ag.Env.Sc.); Specialization in Soil and Water Resources (24 cr.)

Faculty of Education
Approved by SCTP on 16th October 2014, reported to APC on 20th November 2014
B.Ed.; Teaching English as a Second Language; TESL Elementary and Secondary (120 cr.)
M.A.; Teaching and Learning; Non-Thesis; Science and Technology (60 cr.)
M.A.; Teaching and Learning; Non-Thesis; Mathematics (60 cr.)

ii. Program retirements

Faculty of Medicine
Approved by SCTP on 16th October 2014, reported to APC on 20th November 2014
M.Sc.; Experimental Medicine; Family Medicine (45 cr.)

2. Courses

a) New Courses
Reported as having been approved by SCTP on16th October 2014:5
Faculty of Education: 5

b) Course Revisions
Reported as having been approved by SCTP on 16th October 2014:30
Faculty of Agricultural and Environmental Sciences: 1
Faculty of Education: 21
Faculty of Law: 1
Faculty of Medicine: 7

c) Course retirements
Reported as having been approved by SCTP on 16th October 2014:9
Faculty of Education: 8
Faculty of Law: 1

(B) OTHER - *none*

McGill University
Regulations on Cyclical Academic Unit Reviews

Rationale

McGill has an obligation to conduct program reviews to ensure quality and accountability, in keeping with the Policy adopted by Quebec universities within the CREPUQ framework (1991-1999). Furthermore, in keeping with McGill's commitment to excellence in research and in undergraduate and graduate teaching, as judged by the highest international standards, there is a need for a procedure to assess the quality of our programs in relation to the research and reputation of the professors who offer them, as well as the student experience. For these reasons, cyclical reviews of academic units were introduced in 2011, to replace the academic program reviews that were implemented from 2004 to 2009.

Cyclical academic unit reviews are intended to go beyond program reviews; they allow the University, the Faculties, and the units themselves to assess their objectives, priorities, activities and achievements, and to compare themselves to equivalent units in peer institutions, with a view to improving quality and maintaining excellence. Academic unit reviews help to ensure that the unit's objectives are aligned with Faculty and University priorities and plans, as well as meeting the requirements of the Bureau de coopération interuniversitaire.

Review criteria

Each cyclical academic unit review is conducted by a committee, reporting to the relevant Dean and to the Provost. The following criteria should be addressed in the unit's self-study document, as appropriate, as well as the review committee's report:

1. Objectives, Priorities and Activities

- The academic unit's objectives, and priorities. A multi-year plan, including strategies for maintaining and/or further improving the performance of the unit and a consideration of whether current activities are the best means for achieving the unit's objectives.
- The relationship of these objectives, and priorities to Faculty and University strategic plans. Strategies for ensuring alignment with Faculty and University priorities and plans.
- The unit's current strengths and weaknesses, including, where feasible, comparison with equivalent units elsewhere (normally in the U15 and/or American Association of Universities (AAU)) identified for 'bench-marking' purposes.
- Degree of involvement of students and student groups in the unit's activities.

2. Research, Scholarship and Creative Work:

- Extent and quality of the unit's research, scholarship and creative work (publications, research contracts, patents, etc.).
- Success in obtaining peer-reviewed external funding for research, including collaborations and interdisciplinary research.
- Impact of research, as indicated by citations, honours and awards, and other evidence of recognized achievement.
- Involvement of members of the unit in highly regarded academic or professional journals and associations.
- Other contributions towards enhancing McGill's position as an internationally recognised, research-intensive institution.

3. Academic Programs, Teaching and Learning

- Learning goals of the unit's undergraduate and graduate programs.
- Scope, quality and potential of undergraduate and graduate programs, considered in light of learning goals and outcomes, enrolment trends, disciplinary trends, graduation rates, and other relevant performance indicators.
- Success of the unit in encouraging a student-centred learning environment, academic excellence, critical reasoning, inquiry-based pedagogy, promotion of research at the undergraduate level, professional training (where relevant), etc.
- Quality of academic environment; promotion of internationalism and interdisciplinarity; scope and quality of student advising.
- Effectiveness of graduate teaching and supervision; nature and extent of graduate student funding; success rate regarding graduate student employment in the field, etc.
- Quality of students.

4. Diversity and Community Involvement:

- Contributions of the unit to relevant external communities, professional bodies and disciplines.
- Performance on issues related to employment equity and equal educational opportunity.

5. Structure, Management and Administration:

- Effectiveness and appropriateness of the unit's structure, management and administrative processes.
- Adequacy of staffing arrangements.
- Processes in place to ensure quality and to track how well the unit is doing.
- Quality and effectiveness of institutional resources: libraries, IT services, etc.

Preparation of the self-study document

Each academic unit will prepare a self-study document. The head of the academic unit under review will be responsible for overseeing the preparation of the self-study and will ensure that the process is inclusive, involving academic and non-academic staff, as well as students.

In order to minimise workload and duplication, to the maximum extent possible, the self-study will draw on existing data and information such as Annual Reports and other documents that are prepared routinely. The Cyclical Unit Review Office (CURO) will provide quantitative and qualitative information to the unit head.

Self-study documents should be brief and to the point. Supporting documentation should take the form of appendices. The self-study (including appendices) should be submitted in electronic format.

Timing and committee structure

Academic units (including departments, schools, institutes, and faculties without departments) will be reviewed approximately once every 7 years, commencing in September 2011. The review committee will consist of the following: the committee chair (from another faculty, nominated by the Provost); two external members chosen from comparable academic units in peer institutions; one or two McGill faculty members from different units normally within the same faculty, who are not members of the Faculty Administration, nominated by the Dean; one or two student members from a different unit nominated by the relevant student societies).

Deleted: , as well as copies of the unit's reviews from previous years

Deleted: Maximum length for the main document (excluding appendices) is 20 pages – a template will be provided (see Appendix 1). The self- study should start with a brief profile of the unit, offering reflection and critical self-analysis, and summarize any significant changes since the last review (not relevant for the first cycle), as well as any matters of particular interest or concern. The self-study should then address the review criteria (see above).

Deleted: s, proposed to the Academic Policy Committee (APC) of Senate by the Dean of the faculty in question (with input from the unit)

As part of the review process, the committee will conduct a site visit. The review committee will meet with individuals/groups associated with the unit, such as the unit head, faculty members support staff and students. Planning and setting up of the site visit will be co-ordinated by the academic unit and CURO.

The unit's self-study documentation must be submitted not later than one month prior to this site visit. The information provided to units by CURO will be submitted to the unit not later than 4 months before the site visit, in order to allow sufficient time to prepare the self-study.

The review committee will prepare a report, due within one month of the site visit. The report should conform broadly to the review criteria (see above). Units have the option of responding to the report, before the dossier is forwarded to the Dean and Provost, for action as appropriate. Outcomes of the reviews shall be reported to APC and Senate for information.

Deleted: Deans will be asked for written comments on the rep

Deleted: APC shall receive a copy of the final report, responses and comments and these reports shall be brought to Senate periodically for discussion. Feedback will be provided to deans and units. (See Appendix 3 for Timelines.)

Administration of the reviews

Reviews are overseen by the Cyclical Unit Review Office (CURO), which reports to the Associate Provost (Policies, Procedures and Equity). Templates and other administrative procedures are available on the CURO website (www.mcgill.ca/curo/academic-unit-reviews).

Approved by Senate: January 2011

Revised: Nov. 2014

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[1] Interdisciplinary programs without an administrative home unit will be reviewed separately, using a similar process.

University Policy on Late Withdrawals
November 4, 2014

Mandate:
The Subcommittee on Student Affairs Policies tasked a working group to reflect on the official transcript implications of late course withdrawal for students who have been granted late withdrawal due to documented, serious mental health issues. The working group was asked to consider making a change to the practice of recording the 'W' on the transcript in these circumstances.

Membership:
Nicole Allard, Director of Advising (SOUSA), Faculty of Science
Andre Costopoulos, Dean of Students, Student Life and Learning (and originally Associate Dean of Arts)
Heidi Emami, Assistant Registrar, Enrolment Services
Kathleen Massey, Registrar and Executive Director, Enrolment Services (Chair)
Judy Pharo, Director of Advising, Faculty of Engineering
Anna Walsh, Associate Registrar, Enrolment Services

Approach:
The working group met on three occasions to discuss existing practices and the issues that arise with regard to recording a 'W' as the course grade when students withdraw from courses after the last date to add or drop without financial penalty (which typically falls in the third week of the term).

Two surveys were conducted:

1. a Canadian survey of institutional members of the Association of Registrars of the Universities and Colleges of Canada (ARUCC), and
2. a survey of the Association of American Universities (AAU) Registrars.

Findings:
The current practice in most faculties at McGill is to record a 'W' as the final grade if students are permitted to withdraw late for mental health (and other compelling and approved) reasons. Some faculties rarely use this approach or use a 'WF' – Withdrawal Failure with no effect on CGPA (e.g. Management and Engineering). The practice of using a 'W' was found to be consistent with the majority of AAU institutions and with many Canadian universities, although the last date to withdraw from a course without academic penalty varied somewhat among universities (many have a later date). Most institutions use just the grade of 'W', but some use variations of 'W' to signal a 'qualification' of the decision to allow a student to withdraw from a course (e.g. 'W Failure', 'W due to hardship', 'W due to illness').

Some implications of 'W' on the McGill official transcript:
The recording of a 'W' on the official transcript reportedly leads to problems for McGill students. Students report that the presence of a 'W' on their transcripts creates a permanent artifact of a very difficult time in their lives and the reminder can also act as a trigger for feelings from that period. Others, including associate deans, report that the 'W' is sometimes treated negatively when students apply for admission to professional and graduate programs or for fellowships. There is no grade point associated with the 'W' on the McGill transcript and its meaning is defined on the key on the reverse of the transcript as 'Withdrew', so it is a unfortunate that some organizations and institutions regard it negatively in this context. It may lead to situations where the students are penalized repeatedly for an earlier, difficult, and yet resolved time in their lives.

Broader mandate proposed:
Although the mandate of the working group as defined by ESAAC was to consider alternative official transcription practices specifically in reference to students dealing with mental health issues, the members believe that this is rather narrow. There are other compelling circumstances that create the same transcript outcomes ('W') that, in the opinion of members, should be addressed. This document has included those in its deliberations.

Principles:
The members sought to identify new practices that are accurate, fair and take exceptional circumstances into consideration. Further, the working group sees a distinction between the advising transcript on Minerva and the official transcript the University sends to external parties in terms of the recording of late withdrawal decisions. In principle, the policy is to be used to address situations students encounter, including those of a personal physical and mental health nature, family health, and personal tragedy.

With regard to the advising transcript, the working group members recommend that the advising transcript be accurate and thorough, without compromising privacy. The 'W' must be recorded on the advising transcript, with no change to current practices proposed in this regard. It is not advisable to include the reason for the withdrawal on the advising transcript as this is often sensitive and is certainly regarded as private. Given the relatively wide distribution of access to the advising transcript, the reasons and supporting documentation should be kept in a secure repository like a sealed envelope or separate file, accessible only to those who require it for their role.

Recommendations:

1) The official transcript should reflect accurate information designed for public consumption. Exceptionally, this record need not be as exhaustive as the advising transcript, as some information is necessary for academic advising purposes, but not for other external third parties such as universities, granting agencies, etc.

2) In exceptional cases (those of a physical and mental health nature, family or personal tragedy) where a full term withdrawal is warranted, the courses and grades may be removed from the official transcript, but will appear in detail on the advising transcript (a note will appear on the official transcript, indicating university withdrawal with the date that the student withdrew). It will be the Associate Dean or Director for the program who will make this withdrawal decision. This will only be considered for a withdrawal of all classes in a term (not for select classes or just a few classes). This need not happen for every full term withdrawal – only in the exceptional cases mentioned above. All withdrawals stay on the advising transcript on Minerva while the courses would be removed from the official transcript.

Rationale:
The above, more flexible approach will give advisors and associate deans/directors the tools necessary to provide more options to students and to adjust the student's official transcript to alleviate the anxiety that may arise from the reminder of a difficult time in a student's life. It also ensures that the student record and advising transcript are thorough so that advisors have complete information about the student, necessary when developing effective academic support plans.

Official and Advising Transcripts - Definitions

The official transcript and the unofficial/advising transcript are documents of a student's entire academic record at the university. They include all attempted work, withdrawn courses (noted with grades of W, WF) and final grades obtained in any and all programs.

The **advising/unofficial transcript** is an internal document available to students and advising staff electronically through the Student Information System. Along with student's entire academic record, it also includes any incomplete grades (e.g. K, L), fine flags and internal notations (e.g. Associate Dean flag). Below is a sample:

McGill

Student Advising Transcript - Unofficial

✧ A diamond appears beside a course number to indicate a multi-term course.

* An asterisk appears next to the credit value of courses not counted in the total credits earned.

Remarks column:
I - Course is included in credits and included in the GPA.
E - Course is excluded from credits and excluded from the GPA.
A - Course is excluded from credits and included in the GPA.

Please click help for more transcript information.

Student Name:
McGill ID:
Permanent Code:
Email Address:
Advisor(s): Bosch Larose, Marieke

Student Holds

Hold Type	From Date	To Date	Amount	Reason	Originator	Holds
Associate Dean	Apr 20, 2012	Dec 31, 2099		Extra elective cr. not allowed	Arts and Science	

Subject	Number	Title	Cr. / C.E.U.	Grade	Remarks	Earned	Class Avg.

PREVIOUS EDUCATION
US High School

Credits Required for B Science - Liberal - 120 credits

Fall 2008

Bachelor of Science
Full-time Year 0
Major Freshman Program

Credits/Exemptions

From: Advanced Placement Exams - 21 credits

BIOL	111
BIOL	112
ENVR	200
HIST	211
HIST	221
MATH	140
PSYC	100

The advising transcript sample – continued:

CHEM 110	001	General Chemistry 1	4	C+	4	B+
FRSL 211D1 ✧	002	Oral and Written French 1	3	B	3	
MATH 141	001	Calculus 2	4	C	4	B-
PHYS 101	001	Intro Physics - Mechanics	4	C+	4	B+

					Att Cr	Earned Cr	GPA Cr	Points
		Advanced Standing & Transfer Credits:	21.00					
TERM GPA:	2.36			TERM TOTALS:	15.00	15.00	15.00	35.40
CUM GPA:	2.36	TOTAL CREDITS:	36.00	CUM TOTALS:	15.00	15.00	15.00	35.40

Standing: Interim Satisfactory

Winter 2009

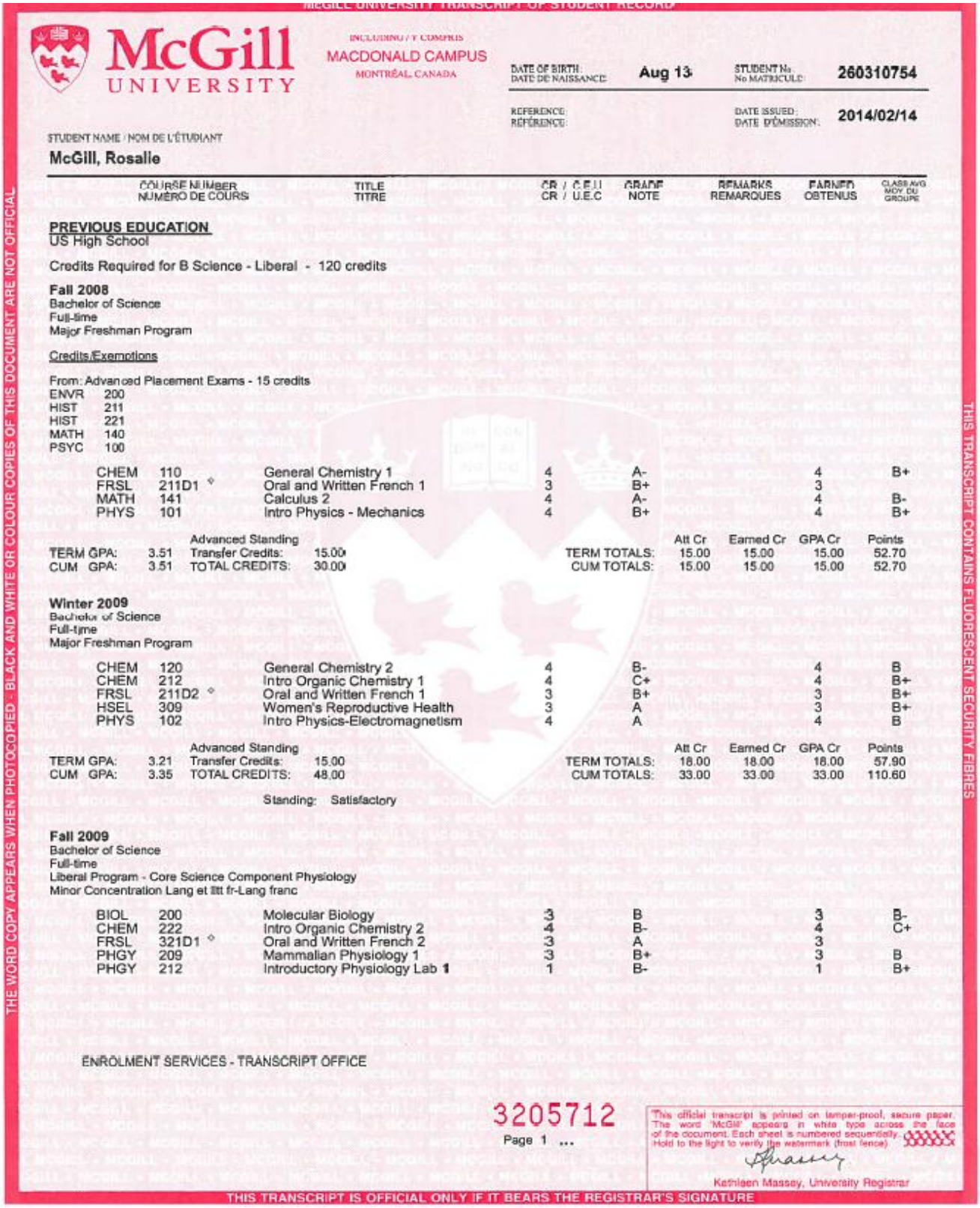
Bachelor of Science
Full-time Year 0
Major Freshman Program

CHEM 120	001	General Chemistry 2	4	B-	4	B
CHEM 212	001	Intro Organic Chemistry 1	4	C+	4	B+
FRSL 211D2 ✧	002	Oral and Written French 1	3	B	3	B+
HSEL 309	001	Women's Reproductive Health	3	B-	3	B+
PHYS 102	001	Intro Physics-Electromagnetism	4	B-	4	B

					Att Cr	Earned Cr	GPA Cr	Points
		Advanced Standing & Transfer Credits:	21.00					
TERM GPA:	2.66			TERM TOTALS:	18.00	18.00	18.00	47.90
CUM GPA:	2.52	TOTAL CREDITS:	54.00	CUM TOTALS:	33.00	33.00	33.00	83.30

Standing: Satisfactory

The **official transcript** is issued by Enrolment Services on secure transcript paper or as a secure PDF along with the signature of the University Registrar, and the transcript key. It contains the student's entire academic record with final grades (includes grades of W, WF) and does not display incomplete grades (e.g. K, L), fine flags or internal notations, such as an Associate Dean flag. The official transcript is sent to a third party as authorized by the student, or issued to the student in a sealed envelope.



McGILL UNIVERSITY TRANSCRIPT OF STUDENT RECORD

McGill UNIVERSITY

INCLUDING / Y COMPRIS
MACDONALD CAMPUS
MONTRÉAL, CANADA

DATE OF BIRTH / DATE DE NAISSANCE: Aug 13
STUDENT No / No MATRICULE: 260310754
REFERENCE / RÉFÉRENCE:
DATE ISSUED / DATE D'ÉMISSION: 2014/02/14

STUDENT NAME / NOM DE L'ÉTUDIANT
McGill, Rosalie

COURSE NUMBER / NUMÉRO DE COURS		TITLE / TITRE	CR / C.E.U. / CR / U.E.C	GRADE / NOTE	REMARKS / REMARQUES	EARNED / OBTENUS	CLASS AVG / MOY. DU GROUPE
PREVIOUS EDUCATION							
US High School							
Credits Required for B Science - Liberal - 120 credits							
Fall 2008							
Bachelor of Science							
Full-time							
Major Freshman Program							
Credits/Exemptions							
From: Advanced Placement Exams - 15 credits							
ENVR	200						
HIST	211						
HIST	221						
MATH	140						
PSYC	100						
CHEM	110	General Chemistry 1	4	A-		4	B+
FRSL	211D1 ◇	Oral and Written French 1	3	B+		3	
MATH	141	Calculus 2	4	A-		4	B-
PHYS	101	Intro Physics - Mechanics	4	B+		4	B+

					Att Cr	Earned Cr	GPA Cr	Points
		Advanced Standing						
TERM GPA:	3.51	Transfer Credits:	15.00	TERM TOTALS:	15.00	15.00	15.00	52.70
CUM GPA:	3.51	TOTAL CREDITS:	30.00	CUM TOTALS:	15.00	15.00	15.00	52.70

Winter 2009								
Bachelor of Science								
Full-time								
Major Freshman Program								
CHEM	120	General Chemistry 2	4	B-		4	B	
CHEM	212	Intro Organic Chemistry 1	4	C+		4	B+	
FRSL	211D2 ◇	Oral and Written French 1	3	B+		3	B+	
HSEL	309	Women's Reproductive Health	3	A		3	B+	
PHYS	102	Intro Physics-Electromagnetism	4	A		4	B	

					Att Cr	Earned Cr	GPA Cr	Points
		Advanced Standing						
TERM GPA:	3.21	Transfer Credits:	15.00	TERM TOTALS:	18.00	18.00	18.00	57.90
CUM GPA:	3.35	TOTAL CREDITS:	48.00	CUM TOTALS:	33.00	33.00	33.00	110.60

Standing: Satisfactory

Fall 2009								
Bachelor of Science								
Full-time								
Liberal Program - Core Science Component Physiology								
Minor Concentration Lang et litt fr-Lang franc								
BIOL	200	Molecular Biology	3	B		3	B-	
CHEM	222	Intro Organic Chemistry 2	4	B-		4	C+	
FRSL	321D1 ◇	Oral and Written French 2	3	A		3		
PHGY	209	Mammalian Physiology 1	3	B+		3	B	
PHGY	212	Introductory Physiology Lab 1	1	B-		1	B+	

ENROLMENT SERVICES - TRANSCRIPT OFFICE

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Page 1 ...

This official transcript is printed on tamper-proof, secure paper. The word 'McGill' appears in white type across the face of the document. Each sheet is numbered sequentially. Hold to the light to verify the watermark (frost fence).

Kathleen Massey, University Registrar

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THE WORD COPY APPEARS WHEN PHOTOCOPIED - BLACK AND WHITE OR COLOUR COPIES OF THIS DOCUMENT ARE NOT OFFICIAL

THIS TRANSCRIPT CONTAINS FLUORESCENT SECURITY FIBRES

McGill

Centre universitaire de santé McGill
Institut de recherche

McGill University Health Centre
Research Institute

Proposal for the refocusing and renaming of the McGill Centre for the Study of Host Resistance to the **McGill International TB Centre**

Requestors: **Marcel Behr**, Depts. of Medicine, Microbiology and Immunology, and Epidemiology and Biostatistics McGill University
Dick Menzies, Depts. of Medicine and Epidemiology and Biostatistics, McGill University
Madhukar Pai, Depts. of Medicine and Epidemiology and Biostatistics Dept. of Epidemiology and Biostatistics, McGill University

Date: Original Submission: January 23, 2014
Final amendment: October 29, 2014

McGill International TB Centre

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McGill International TB Centre

I – The need for change

The McGill Centre for the Study of Host Resistance has long been a leading research and training environment. Right from its inception, a main Centre focus has been the study of genetic resistance to tuberculosis (TB). While TB research remained a strength, other interests developed over the years, ultimately leading to a collection of researchers interested in a variety of Infectious and Auto-Immune Diseases, most of whom oversee wet-lab based research programmes. Coincidentally, there has been an evolution in the funding landscape, with a powerful surge towards translational research. To stay competitive in 2012, these changes must be considered in organizational research structures. Indeed, we received a mandate from the Faculty of Medicine to do so at the last review of the Centre, while respecting the distinctive nature of other university-recognized Centres.

Over the past few years, a community of TB researchers has assembled, some of whom have not been members of the Centre. These researchers share a common mission of bringing together TB investigators with different perspectives and expertise for both research and teaching activities related to this disease. Given the excellence of TB research conducted by these clusters, which spans the four Canadian Institutes for Health Research (CIHR)-defined research pillars, it is timely for the Host Resistance Centre to consider re-orienting its mission. This can be accomplished by bringing together McGill researchers interested in the study of TB and related diseases, no matter the type of research (lab, clinic, epidemiology, other), the subject of the research material (host, pathogen, environment), or the disease process implicated (TB disease, BCG for bladder cancer, mycobacterial cell wall as immune-adjuvant). The new Centre will foster trans-disciplinary groups and actively promote interdisciplinary research to establish a focal point of global excellence in translational TB research.

II – Identification

a. Name: **The McGill International TB Centre (MITBC)**
b. Membership: Faculty of Medicine
c. Names of proposers and affiliation:

Marcel Behr, William Dawson Scholar, Professor, Department of Medicine, Associate Member, Departments of Microbiology and Immunology and Epidemiology and Biostatistics, FRQS Chercheur National

Dick Menzies, Professor, Department of Epidemiology and Biostatistics and Department of Medicine, FRQS Chercheur National

Madhukar Pai, Associate Professor, Department of Epidemiology and Biostatistics, Associate Member, Department of Medicine, FRQS Senior

III – Rationale

a. Context about the disease

Despite the recognition of its cause in 19th century and the development of a vaccine and effective antibiotics in the 20th century, TB continues to be the single most important bacterial pathogen of humans, responsible for about 9 million new cases and 1.5 million deaths per year. Meeting the global challenge of tuberculosis demands a multidisciplinary approach for both philosophical and practical reasons. As Sir William Olser said, "TB is a social disease with a medical aspect". This can be seen by following TB rates of TB over time. In the first half of the 20th century, TB rates declined in many countries, but then abruptly rose during the first and second World Wars. In the late 20th century, countries with rising TB rates experience a decline in life expectancy. These global trends are also seen within Canada at a more local scale. Some of the highest rates of TB in the world are being experienced in Inuit villages of Nunavik and Nunavut, following several decades when TB appeared to be on the way to elimination.

Compounding the problem of TB resurgence in many parts of the world is the emergence of new strains of the pathogen that are resistant to the antibiotics used to treat disease. The first generation of resistance was called Drug-Resistant (DR) *Mycobacterium tuberculosis*; this then gave way to Multi-Drug Resistant (MDR) strains, followed more recently by Extensively Drug-Resistant strains (XDR). In the past few years, the world has witnessed the emergence of Totally Drug-Resistant tuberculosis (TDR) that is unresponsive to all recognized TB drugs. A key question in TB research is whether these DR strains of bacteria have intact capacity to infect, cause disease and transmit.

For a variety of reasons, TB has remained a disease of old interventions. TB diagnosis has relied for decades on techniques developed in the 1880s (culture, microscopy); TB prevention has been based on a vaccine developed in 1921 (BCG vaccine) and TB treatment has used antibiotics developed in the 1940s-1960s. There is a palpable experience of a changing landscape in TB in the past decade, with the introduction of new diagnostics and new drugs. Our group is doing research on the former (new tests, namely interferon-gamma release assays and the Gene Xpert molecular test) and is poised to being testing of new treatments, as part of a partnership that is under negotiation at the present time. A high priority for several of the Centre investigators is the development of a new vaccine. In contradiction to new tests and new treatments, where proof-of-concept has been established and the scale-up is largely an engineering issue, the barrier to a new vaccine is thought to be a conceptual challenge. To develop a novel vaccine that protects against TB and similar disease requires a profound improvement in our understanding of the disease process and the mechanisms employed by the immune system to resist infection, disease and spread of bacteria through our bodies. An interdisciplinary effort by a cluster of Centre investigators is being to challenge some of the core premises that have dominated TB vaccine research over the past decades.

McGill International TB Centre

b. Context (disciplinary, societal, institutional or Vision)

To look at TB from a single point of view would miss much of the complexity of this disease. It is axiomatic that TB continues to occur due to a combination of bacterial attributes, host factors and environmental contributors, yet few groups possess the breadth of research expertise to account for each of these, in isolation, and together. By focusing our research efforts we are poised to be such a Centre.

In 2001, Marcel Behr received a CFI award sufficient to build the walls and sophisticated ventilation systems required to build a Containment Level 3 (CL3) facility dedicated to the study of Tuberculosis at the Montreal General Hospital site of the McGill University Health Centre. In 2002, as part of the successful MIGGRIP CFI award, Erwin Schurr received equipment money to furnish the facility. The facility completed its certification by the Public Health Agency of Canada in 2005 and has a half-time manager, full training program and a growing pool of expertise. The manager has been assisting McGill's Complex Traits Group in getting its CL3 certified at the Bellini building and has been designated as manager of the new CL3 Tuberculosis lab being opened in 2015 at the Glenn campus of the McGill University Health Centre.

This facility, the only one functional at McGill, combined with other McGill platforms, expanded TB research capabilities and was pivotal in attracting new faculty at McGill. Since 2005, six new faculty were recruited. Michael Reed, Maziar Divangahi, Madhukar Pai, Dao Nguyen, Don Vinh and Andrea Benedetti. There are 2 more imminent potential recruits anticipated in 2014-2015.

Many of these members have been working together and separately on Tuberculosis and related mycobacteria as shown in the funding and publications. By bringing them together under a common umbrella will make these interactions easier.

c. Funding of MITBC members from 2009 to 2013

Full members have received a total of $20.6 million for an average of $4.4 million annually and 43% of these funds have been received on grants involving more than 1 Full member.

d. Publications of MITBC members from 2009 to 2013

There have been 335 publications by Full members from 2009 to 2013 and 56 of those publications involved more than 1 Full member. See Appendix A. During the same period, there have been 409 publications by all MITBC members and 62 of them involved more than 1 member.

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IV – Objectives

a. Description of the McGill International TB Centre

Initially the MITBC will bring together researchers from 3 universities and 2 government entities, for a total of 13 Full members and 8 Associates spanning 10 departments. 18 of these members are from McGill Faculty of Medicine.

b. Vision and specific objectives

Vision:

By bringing together researchers with a common interest but different backgrounds and expertise, we will learn from each other, we will enrich the training environment and we will be able to offer shared and complementary expertise to accelerate science and discovery. By determining the areas of synergy, we can also prioritize our needs and define recruitment priorities for the future. We will be poised for team applications at various levels (Quebec, Canada) and for different activities (training, research and infrastructure). The new Centre will increasingly become an important partner in national and international TB control programs, and through its outreach have access to international funding that is difficult to achieve as individual researchers or smaller research groups.

Specific Objectives:

1. To ensure a dynamic environment for research on all aspects of Mycobacterial diseases, their diagnosis, their treatment, their prevention and their impact on society.
2. To foster interactions through regular inter-disciplinary meetings, an active website and other forms of communication.
3. To facilitate multi-disciplinary research, for instance collection of patient data, patient samples, M. tuberculosis isolates and generation of a joint database.
4. To support training, mentoring and funding of graduate student, post-doctoral fellows and junior faculty and in providing opportunities for travel e.g. to present at national/international meetings and to conduct visits / exchanges with other groups.
5. To support teaching activities, both within and beyond the classic departmental structure, on TB and mycobacterial diseases
6. To leverage interactions above as a catalyst for team programs, at McGill or beyond (Quebec, Canada, global initiatives), in research, infrastructure and training initiatives
7. To contribute to knowledge translation activities such as interactions with industry, development and implementation of policy, sponsorship of symposia, etc.

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c. Proposed activities and research axes.

We have members spanning the four Pillars of Research as defined by the CIHR:

			Biomedical	Clinical	Population Health	Health Systems	
Members:			**Pillar 1**	**Pillar 2**	**Pillar 3**	**Pillar 4**	**Affiliations**
Alvarez	Gonzalo	Associate		x	x	x	U of Ottawa
Barreiro	Luis	Associate	x				U de M
Behr	Marcel	Full	x	x			McGill
Benedetti	Andrea	Full			x		McGill
Bernard	Nicole	Full	x				McGill
Brassard	Paul	Full			x	x	McGill & U de M
Divangahi	Maziar	Full	x	x			McGill
Gros	Philippe	Associate	x				McGill
Malik	Suneil	Associate	x		x	x	PHAC
Menzies	Dick	Full		x	x	x	McGill
Ndao	Momar	Associate	x	x			McGill
Nguyen	Dao	Associate	x	x			McGill
Olivier	Martin	Full	x				McGill
Pai	Madhukar	Full		x	x	x	McGill
Piccirillo	Ciriaco	Associate	x	x			McGill
Reed	Michael	Full	x				McGill
Schurr	Erwin	Full	x	x			McGill
Schwartzman	Kevin	Full		x	x	x	McGill
Skamene	Emil	Full	x				McGill
Soualhine	Hafid	Associate		x			INSPQ
White	John	Full	x				McGill

Moreover, beyond the span of researchers, there are already a large number of projects ongoing with two or more Centre members, built upon complementary expertise, enabling us to address questions and problems that exceed our individual research programs. For instance, in response to an unprecedented TB outbreak in Kangiqsualujjuaq in 2012 (90 cases in a population of 964 = 9% of the village with active TB), members of the Centre put together a team for a CIHR grant to address the root causes of the outbreak, using a combination of epidemiology and molecular typing. Members of the Centre participating as investigators and collaborators on this grant, which was ranked second in the competition and funded for 3 years, are: Behr, Menzies, Schwartzman, Benedetti, Soualhine, Reed and Schurr.

d. Value added (contributions to the discipline, promotion of research connections etc.)

The MITBC will solidify McGill's position as one of the premier research groups in the world on Tuberculosis. Collectively, we have access to human samples, access to patient populations here and abroad and access to a level 3 facility where we can manipulate these highly contagious bacteria in a safe environment and a core group of award-winning investigators with collaborative links around the world.

These aforementioned activities can continue in the current context and are more than likely to grow as the investigators` research and training interests continue to expand. But to take our group to the next logical level we intend to obtain formal group funding from a peer-reviewed agency, such as the FRQ (Reseaux), CIHR (Training grants) or the NIH (U19 awards). To be successful, groups applying for such team funding require a formal governance structure with bylaws, defined management roles and university support. The recognition of our currently informal group of TB investigators in the form of a Senate-approved McGill Centre is a key stepping stone to such initiatives.

e. Contribution to training (graduate students, postdoctoral scholars, etc.)

There is a great demand for highly trained personnel with exposure to all facets of research in Tuberculosis, ranging from molecular, spatial and genetic epidemiology, clinical aspects in randomized controlled trials, diagnostic research, systematic reviews and meta-analyses, operational and implementation research, decision analyses and modeling, International health and translational research. Personnel who have followed the training and gathered experience for the Containment Level 3 Facility are highly sought after.

Highly qualified personnel are needed in academia, clinical, pharmaceutical and policy-setting spheres. The students enrolled in various academic departments: Anatomy & Cell Biology, Biochemistry, Biology, Microbiology & Immunology, Pharmacology & Therapeutics, Physiology, Epidemiology, Biostatistics & Occupational Health and Medicine in various divisions: Experimental Medicine, Infectious Disease, Internal Medicine and Epidemiology. They are at the undergraduate, graduate and post-graduate levels.

The MITBC offers monthly seminars presented by Faculty members, students and invited guests. Members and trainees are encouraged to present at the MITBC prior to going to International meetings. There is an Annual Research Day with poster and oral presentations with prizes including the Alfa Travel award. This award is given at the McGill University Health Centre Foundation Research Dinner which provides visibility for the winner.

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The MITBC offers a bridge funding program to ensure continual funding of all students. Finally, the MITBC offers two courses in the summer that attract an interest from TB students and researchers world-wide. The Advanced Diagnosis Course has run for three years already and has received rave reviews and more applicants than it can accept. In 2014, we are offering for the first time a course on TB Research Methods, and we have already received over 40 applications for a course that was originally intended to be limited to 30 participants.

V– Strategic positioning

a. Importance to McGill University

The Centre brings recognition to McGill University through the international profile of its members and the activities it organizes. The Centre courses attract scientists from around the world and also draw guest faculty from American, European and African institutions. By demonstrating our excellence at scientific meetings and through training initiatives, we promote the name and the values of McGill University, in Canada and abroad. In the last year alone, TB researchers at McGill have been featured regularly in National and International news such as Al Jazeera, the Wall Street Journal, The Guardian and at the High Council of Canada, CBC radio Canada. Our investigators have been in videos on YouTube and Grand Challenges of Canada as well as many prestigious scientific journals.

b. Relation to other Research Centres outside McGill University

The Centre has been developed with full recognition of potential synergies and complementarities with other Tuberculosis Research Centres. Our Centre is of comparable size with other Tuberculosis Centres, such as Johns Hopkins, Harvard, Institut Pasteur, University of Cape Town or K-Rith (Durban). However our strength is in translational research, especially the interface between basic laboratory science and epidemiologic investigations. In this manner, we can (and do) work with investigators from these other Centres, but our group is uniquely poised to take a leadership role in translational initiatives, both in Canada and abroad.

c. Relation to other Research Centres at McGill University

In Global Health, the 'Big Three' are AIDS, Tuberculosis and Malaria. McGill already has an AIDS Centre and a Centre for Host Parasite Interactions (based at MacDonald Campus), thus there is a perfect complementarity by formally designating a TB Centre. There is no competition between these groups, but rather many opportunities for these to compete together for Canadian/International funding in Global Health initiatives. At McGill there are two other Centres that share complementary interests: the Centre for Complex Traits and the Microbiome and Disease Tolerance Centre. These Centres have a distinct focus of interest, which provides a complementary perspective on how the host interacts with microbial exposures, and it is anticipated that we can work with each of these Centres, as initiatives present, to develop this aspect of our TB research in coming years. Again, there is clearly no competition with the other Centres at McGill, but plenty of room to work together with other Centres, especially in light of the expanding interest in Global Health, itself currently in search of a new leader at McGill.

d. Future development

The Centre has identified both quantitative and subject growth for coming years. We aim to recruit two new members in the coming years, to increase our strength in social epidemiology and mathematical modeling. In terms of subject growth, we have identified the diseases that share commonality with Tuberculosis, known as the non-tuberculous mycobacterial diseases, as a particular interest, as many of these are growing in incidence and complexity in Canada and other industrialized countries.

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VI– Membership and structure

a. Administration

The administration of the Centre consists of a Director and 2 Associate Directors. The inaugural Director of the Centre will be **Marcel Behr MD**, William Dawson Scholar, Professor, Department of Medicine, Associate Member, Departments of Microbiology and Immunology and Epidemiology and Biostatistics. Dr Behr is also the Microbiologist-in-Chief at the McGill University Health Centre (MUHC). He has been elected as Director by a vote of the members and will serve for a period 5 years, at which point there will be an election to choose his successor.

The Associate Director for clinical research of the Centre is **Dick Menzies MD**, Professor, Department of Epidemiology and Biostatistics and Department of Medicine and Director Respiratory Division, MUHC and McGill University. Dr. Menzies is known at the MUHC for having directed the TB clinic for over two decades and is globally recognized for conducting studies on TB diagnosis tests and leading large clinical trials of antibiotic treatments.

The Associate Director for global research of the Centre is **Madhukar Pai MD**, Associate Professor and Director, PhD Epidemiology Program for the Department of Epidemiology and Biostatistics and Associate Member, Department of Medicine. Dr Pai is an internationally recognized authority on diagnostic research and policy who is a consultant to the Bill and Melinda Gates Foundation for the scale-up of population-level interventions in India.

b. Website http://www.mcgill.ca/tb/

c. Membership process

Investigators at McGill University with a published interest in mycobacterial disease and/or funding for the study of mycobacterial diseases and/or a self-identified interest in mycobacterial disease will be invited to submit their CV and an application for membership. Individuals who are Full Members of other McGill recognized Senate Centres may still participate as Associate Members. Application will consist of one-half page statement of intent, describing how individual believe they can contribute to the goals of the renewed Centre. The initial review committee will consist of the founding director (Emil Skamene), the current director (Marcel Behr) and one extra-mural member (Joel Ernst, NYU).

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d. Membership by category

Full members:

i. Full members: Must be McGill faculty and one can only be a Full member of 1 senate-recognized McGill Centre. Currently, there are 13 Full Members across 6 departments: Medicine, Biochemistry, Epidemiology & Biostatistics, Human Genetics, Microbiology & Immunology and Physiology.

Director: Marcel Behr, William Dawson Scholar, Department of Medicine, Associate Member, Departments of Microbiology and Immunology and Epidemiology and Biostatistics, FRQS Chercheur National. Research focus is on the epidemiology and pathogenesis of mycobacterial infections, specifically M. tuberculosis (the cause of TB) and M. avium (the cause of a range of diseases including pulmonary infection and disseminated disease in AIDS patients). Tools used include DNA fingerprinting, DNA microarrays, whole genome sequencing.

Associate Director: Dick Menzies, Depts. of Medicine and Epidemiology and Biostatistics, Director of the Respiratory Division, MUHC and McGill University. Research focus is Tuberculosis - clinical studies of new diagnostic tests, long term outcome, side effects of therapy, and compliance with therapy. Epidemiology studies - of health care workers. Molecular epidemiology studies- effect of BCG on - transmission, transmission to HCW. Building related illnesses - epidemiological studies: of effect of GUV light, effect of microbial contamination and endotoxin.

Associate Director: Madhukar Pai, Depts. of Medicine and Epidemiology and Biostatistics, Director, PhD Epidemiology Program. Dr. Pai holds an FRQS Chercheur Boursier Senior. He has served as co-chair of the Stop TB Partnership's Working Group on New Diagnostics and served as a member of the Stop TB Partnership's Coordinating Board. Madhu's research is mainly focused on improving the diagnosis of tuberculosis, especially in high-burden countries like India and South Africa. He received the 2007 Union Scientific Prize from the International Union Against Tuberculosis and Lung Disease (IUATLD). In 2011, he received the Canadian Rising Star in Global Health award from Grand Challenges Canada. In 2012, he received the Chanchlani Global Health Research Award from McMaster University, Canada.

Andrea Benedetti, Depts. of Medicine and Epidemiology and Biostatistics and holder of an FRSQ Chercheur-Boursier Junior 1. Dr. Benedetti is interested in challenges related to analyzing TB data. She holds operating funds from the Canadian Institutes of Health Research to study statistical methods in molecular epidemiology with applications to tuberculosis research. The overall objective of this project is to investigate the impact of TB-fingerprint change rates (assumed due to underlying spontaneous mutation) on conclusions drawn from epidemiologic studies of TB-transmission.

Nicole Bernard, Department of Medicine. The research focus is the study of the immune correlates of protection against HIV infection in a subset of individuals who remain uninfected despite multiple exposures to this virus. The research program is based on the hypothesis that NK cells play a role in protection from HIV infection. NK cells, as key players in innate immunity, can mediate antiviral functions early after exposure to HIV infected cells and possibly prevent the establishment of a progressive infection.

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Paul Brassard, Depts. of Medicine and Epidemiology and Biostatistics McGill University and Université de Montréal. As a medical epidemiologist his major focus of research has been dealing with infectious diseases prevention and control in marginalized groups such as the urban Aboriginals, homeless and intravenous drug users and the remote Aboriginal communities of the Quebec Arctic. His topic of interest have been tuberculosis and sexually transmitted diseases focusing recently on the natural history of the human papillomavirus and its association with cervical cancer in Northern Canada.

Maziar Divangahi, Depts. of Medicine and Microbiology and Immunology, holder of a CIHR New Investigator award. The goal of his research program is to investigate the cross-talk between innate and adaptive immunity against two intracellular pulmonary pathogens, influenza and Mycobacterium tuberculosis (Mtb). To achieve the research goals, the lab has established mouse models of influenza pneumonia and M. tuberculosis as well as primary cell cultures.

Martin Olivier, Depts. of Medicine and Microbiology and Immunology. The present interest in the laboratory is to further investigations in immune evasion by parasites, specifically to discover other negative regulatory mechanisms (e.g. Proteasome, phosphatases, surface receptors) modulated by Leishmania or other pathogens (Mycobacteria, Trypanosoma, Malaria, HCV) to subvert the innate immune response of the host and thus favoring pathogens installment and propagation.

Michael Reed, Depts. of Medicine and Microbiology and Immunology, holder of a CIHR New Investigator award. His research focuses on molecular aspects of the pathogenesis of Mycobacterium tuberculosis. The laboratory utilizes a combination of microbial genetics, biochemistry and whole animal (mouse) in vivo infection studies to investigate the array of metabolic and virulence strategies available to this phenotypically diverse pathogen.

Erwin Schurr, James McGill Professor, Depts. of Medicine, Human Genetics and Biochemistry. His research focuses on studying the genetic factors that predispose to tuberculosis and leprosy. The laboratory is working on the identification of host gene variants that determine the protective efficacy of present and newly developed tuberculosis vaccines. There is close collaboration with several research groups in the developing world and maintain several field sites for the genetic epidemiological analysis.

Kevin Schwartzman, Depts. of Medicine and Epidemiology and Biostatistics, Respiratory Epidemiology Unit, Montreal Chest Institute. Research focuses on the clinical and economic evaluation of interventions in tuberculosis and other respiratory diseases in addition to research on the local epidemiology of tuberculosis in Montreal, including spatial and geographic aspects.

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Emil Skamene, Depts. of Medicine and Human Genetics. Among his many honors and distinctions, he was made a Knight (Chevalier) of the National Order of Quebec in 2005. In 2001, he was awarded the Prix Armand-Frappier and in 1997, he was made a Fellow of the Royal Society of Canada. Founder of the McGill Centre for the Study of Host Resistance. His laboratory has developed a gene-discovery platform in the mouse uniquely suited to the genetic dissection of complex traits, termed recombinant congenic strains (RCS). Current projects are to discover genes controlling the phenotypes of asthma and tuberculosis using the RCS.

John White, Depts. of Medicine and Physiology.. The laboratory focuses on the Molecular genetics of signaling by the nuclear vitamin D receptor and identification of vitamin D target genes implicated in its capacity to stimulate innate immune responses, the chemical biology of vitamin D analogs and the characterization of novel factor identified in the lab called ligand-dependent corepressor (LCoR).

Associate Members:

ii. Associate members: Associate membership is granted to members from other centres, universities and government organizations with a research interest linked to the MITBC. At present, it includes 8 members in 2 Canadian universities, 2 government organizations and 4 McGill faculty.

Gonzalo G. Alvarez, Medicine, University of Ottawa. Dr. Alvarez has been the Nunavut Respirology consultant for the past 7 years where he provides general lung health care in both Iqaluit and Ottawa Respirology and TB clinics for patients from Nunavut. He is currently leading the TAIMA TB program of study in Iqaluit, a study funded by PHAC aimed at raising TB awareness in the community. He is also doing two other CIHR funded studies in TB in Nunavut including improving diagnostic capabilities and awareness/education.

Luis Barreiro, CHU Sainte-Justine. Luis B arreiro's research focuses on a better understanding how natural selection has contributed to the evolution of our species and the extent to which past selection events impact present-day susceptibility to disease. Specifically, Barreiro's lab studies the evolution of immune responses both at the inter-species level as well as among different individuals and human populations.

Philippe Gros, Depts. of Medicine, Biochemistry, Human Genetics and Microbiology & Immunology. Dr. Gros is Vice-dean, Life Sciences. Research in his lab is centered on three main areas: Resistance to chemotherapy in tumour cells, Genetic basis of susceptibility to infectious diseases and Genetic basis of neural tube defects in neurogenesis.

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Suneil Malik, Lead: Infectious Diseases Program, Laboratory for Foodborne Zoonoses, Centre for Communicable Diseases and Infection Control, Public Health Agency of Canada. His role as a public health scientist is to develop innovative solutions through advances in basic science with a view to reduce mortality and morbidity due to tuberculosis. I use a systems-based approach to help identify, characterize, and modify critical innate immune pathways important in mediating adverse outcomes of infection.

Momar Ndao, Depts. of Medicine, Microbiology and Immunology. His laboratory has interests in diagnosis of parasitic diseases, the study of host-parasite interactions, screening drugs to be used as therapies for protozoan parasitic disease, developing vaccines to prevent parasitic diseases and applying proteomic technology to discover biomarkers for infectious diseases

Dao Nguyen, Depts. of Medicine, Microbiology and Immunology. Her laboratory is interested in the molecular microbiology of biofilms and Pseudomonas aeruginosa infections. Our work is focused on understanding the molecular mechanisms of biofilm formation, detachment, and antibiotic tolerance. This will provide insights into the pathogenesis of infection and potential new therapeutic targets against Pseudomonas aeruginosa biofilms.

Ciriaco A. Piccirillo, Depts. of Medicine, Microbiology and Immunology. Canada Research Chair in Regulatory lymphocytes of the Immune System. His research focuses on the immune regulation of autoimmune and infectious diseases mediated by naturally occurring CD4+ regulatory T cells (nTreg). The laboratory makes use of cutting-edge experimental strategies to characterize the relative contribution of nTreg cells as a determining factor in establishing resistance or susceptibility to autoimmune and infectious diseases.

Hafid Soualhine, Laboratoire de santé publique du Québec, Mycobactériologie et Actinomycètes aerobies. The Laboratoire de santé publique du Québec (LSPQ) is the reference TB lab in Québec. It provides scientific and technical assistance and expert advice on topics linked to surveillance and control of Tuberculosis.

Emeritus Members:

iii. Emeritus Members: Members who are no longer active in research but who maintain a strong interest in the Centre. In January 2014, one of our Full members will transition to Emeritus.

VII– Resources

a. Budget

5 year budget	**2014**	**2015**	**2016**	**2017**	**2018**
Inflows:					
Faculty of Medicine support	$70,000	$70,000	$70,000	$70,000	$70,000
User fees CL3 core facilities	$35,000	$35,000	$ 0	$ 0	$ 0
RI - MUHC CL3 core facilities	$35,000	$36,000	$37,000	$38,000	$39,000
Group grant – FRQ	$ 0	$ 0	$80,000	$80,000	$80,000
Net from summer courses	$20,000	$21,000	$25,000	$25,000	$25,000
	$160,000	**$161,000**	**$212,000**	**$213,000**	**$214,000**
Outflows:					
Student bursaries	$30,000	$30,000	$60,000	$60,000	$60,000
Travel awards	$15,000	$15,000	$23,000	$22,000	$21,000
Administrative coordinator	$30,000	$31,000	$32,000	$33,000	$34,000
Core facilities Manager	$35,000	$36,000	$37,000	$38,000	$39,000
Core facilities support	$35,000	$35,000	$35,000	$35,000	$35,000
Symposiums, workshops	$10,000	$10,000	$20,000	$20,000	$20,000
Administration	$ 5,000	$ 4,000	$ 5,000	$ 5,000	$ 5,000
	$160, 000	**$161,000**	**$212,000**	**$213,000**	**$214,000**

The proposed MITBC members bring in an average of $ 4.4 million in peer reviewed research funding annually. This amount is expected to grow as we bring in new members. These funds are directed to specific projects and do not affect the operating funds of the Centre itself. Regarding partnerships, pharmaceutical monies are difficult to obtain as most companies have been reluctant to invest in tuberculosis because the disease is most prevalent in developing countries where there is less market incentive to invest. There are some non-profit organizations such as The Bill & Melinda Gates Foundation and Aeras Global TB Vaccine Foundation advancing new vaccines, diagnostics, and drugs for the world; we are in active discussions with these organizations regarding potential partnerships.

The operating budget has been provided by the Faculty of Medicine's support for the Centre for the Study of Host Resistance and we request that this sum be transferred to this newly refocused Centre. It is supplemented by user fee revenues paid out of investigators' grants and support from the Research Institute of the MUHC (RI-MUHC) for the core Containment Level 3 (CL3) facilities.

Until recently, there have been no Quebec-based opportunities for core external funding for this group. Encouragingly, there are currently some favorable discussions with upper management of the FRQ to indicate that a new program is being developed and this Centre would qualify for application. Additionally, beyond a standard FRQ Reseau programme, to which we would certainly apply, there are also ongoing

discussions regarding an FRQ initiative focused on Northern health, for which we have been contacted as a Core group. Thus, we are now optimistic that Team funding will be obtained within 3 years.

The large CFI grant received for the Glenn yard campus has precluded infrastructure applications (other CFI grants) until we move to the new facility in 2015. There will be a large focus on getting more equipment funds shortly after the move. We are looking for training grants, both federally and internationally, and if required will team up with other centres for these initiatives. When successful, some of the funds from a group grant will be used to offset the user fees of the CL3 thereby enabling investigators to use the facility at reduced or no cost.

The summer courses we offer are not for credit courses aimed at the international research community which attracts many foreign participants; the experience gained from this year's course is very positive.

Anticipated Expenses:

The Centre for the Study of Host Resistance has been supporting students and new investigators getting set up in their careers and this tradition would be maintained in the proposed Centre. The major form of this support has been in studentships, travel to scientific meetings and maintenance of the core facility.

The Annual symposium will attract an international speaker this year; we expect travel and lodging expenses, room rental, audio-visual equipment, lunch/coffee breaks, posters. In future, we would like to expand this symposium to attract several international speakers. There are monthly meetings and other outreach activities such as the Café Scientifique on Tuberculosis that was held in March 2013. Administration fees includes registration fees of the Centre to various organizations such as STOP TB.

b. Staffing

The day-to-day running of the Centre will be performed by a coordinator who assists the Director in carrying out his duties of governing the Centre. The CL3 Facility also has a half-time Manager who oversees the running of the core and ensures training of all personnel prior to their entry into the facility.

c. Physical resources (location, space and other resources)

The majority of the MITBC researchers are based at the MUHC and will move, in early 2015, to brand-new world class facilities. This will be an opportunity to regroup members working on common themes to form research neighbourhoods. There will be a plaque installed at the new centre.

Appendix A - Bylaws

Location

The main office of the McGill International TB Centre (MITBC) will be at the McGill University Health Centre and will be identified by a plaque.

Purpose

The purpose of this Centre is to be one of the premier research groups in the world on Tuberculosis.

Management

The governance of the MITBC is directed by an Executive Board. Daily operations are managed by the MITBC Director who reports to the Executive Board. The Director is responsible for appointing Associate Directors, overseeing daily operations of the MITBC, implementation of the MITBC budget, preparation of the Annual Report, applications for external funding, human resources and financial planning. There are two Associate Directors; one for clinical research and one for global research. Associate directors are responsible for finding group research opportunities in their area of expertise and to represent the director in his/her absence.

Membership of the Executive Board

The membership of the Executive Board of the MITBC will include the Dean of the Faculty of Medicine (or delegate), the Vice-Principal (Research and International Relations) (or delegate), the Director of the MITBC, two active Full Members, a graduate student, a postdoctoral fellow and at least one person from outside the University who is not directly involved in the research centre. The Executive Board will be chaired by the Dean of Medicine (or delegate).

The board members who are also members of the research centre, and who do not serve ex officio, will be elected by their appropriate constituencies. The terms of appointment of the board members, other than the dean(s), Vice-Principal (Research and International Relations), or their delegates, will normally be five years for faculty and one or two years for students and postdoctoral fellows.

Appointment of the Director

The Executive Board will select the Director of the MITBC based on recommendations from the Centre membership. The selection will be conveyed to the Provost by the Dean of Medicine, who has the responsibility for approval of the appointments. The Director serves at the discretion of the Executive Board for nominal terms of five years, renewable with a limit two consecutive terms. The positions of Director and Associate Directors of the MITBC do not involve any teaching release.

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Annual Report

The Director of the MITBC will prepare the Annual Report, which will include all financial details of MITBC operations along with the goals of the MITBC for the coming year. The Director of the MITBC will present it to the Board for approval. Following its approval, the Annual Report will be submitted to the Provost, the Vice-Principal (Research and International Relations) and the Dean of Medicine.

Membership

The MITBC will have classes of membership covering the following categories of membership.

I. Full Member: A senior researcher, such as a faculty member whose principal research affiliation is with the MITBC; in consequence, he/she cannot be a Full Member of more than one McGill University Research Centre.
II. Associate Member: A senior researcher, such as a faculty member, with significant research affiliation with the MITBC; a researcher can be an Associate Member of more than one McGill University Research Centre.
III. Emeritus Members: Members who are no longer active in research but who maintain a strong interest in the Centre.
IV. Student, Postdoctoral Scholar, Research Associate Member: a researcher working in the research group of a Full or Associate MITBC Member.

Nominations for new Full and Associate Members of the MITBC must include full curricula vitae, an application letter and must be submitted to the full membership at a General Meeting for approval. Terms of membership are renewable, and each term will be up to six years for Full and Associate Members. Graduate student, postdoctoral scholars, research associates and technical staff in the research groups of Full and Associate MITBC Members are automatically eligible for MITBC membership.

Research Resource Allocations and Budget

The MITBC budget is prepared by the Director and submitted to the Executive Board for approval. Allocations of MITBC resources are subject to the approbation of the Executive Board. Appeals concerning resource allocation can be brought by Full and Associate Members to the Executive Board, whose decision will be final.

Annual General Meeting

There will be an Annual General Meeting of all members of the MITBC during which the Annual Report will be presented and approved. All members are eligible to vote on the approval of the Annual Reports and on the nomination of Full and Associate Members before they are presented to the Executive Board.

Meetings of the Executive Board

The Executive Board will meet at least once a year to receive the Annual Report, to review activities and membership, to approve the budget, and to resolve any governance issues that may arise.

McGill

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January 22, 2014

Dr Rose Goldstein
Chair, Research Advisory Council
McGill University
James Administration Building, Room 419

Re: Application for the renaming of the "Centre for Host Resistance" as the "McGill International TB Centre"

Dear Dr Goldstein,

It is with great enthusiasm that I endorse the effort by investigators formerly affiliated with the Centre for Host Resistance to formally refocus their efforts around the common theme of tuberculosis, as described in the accompanying document. The TB group at McGill has manifest its leadership locally, nationally, and internationally, through their clinical and research activities, the guidelines and policies which they have developed, and the cutting-edge science they continue to pursue. I consider the TB group to be an excellent example of a cross-cutting research centre, focused on investigations that transcend the CIHR-defined pillars and staking out new ground in an effort to advance research, teaching and knowledge translation. Therefore, it is most appropriate that the Centre's new focus be reflected in a new name, to formally acknowledge that this is no longer a Centre specialized in Host Resistance to a variety of pathogens, but rather a cross-disciplinary assembly of investigators sharing an enthusiasm for the study of TB and related infections.

The accompanying application provides more details about the investigators and the team they have created. I enthusiastically support this initiative and I will be happy to designate an appropriate Faculty leader to serve on its steering committee, in keeping with the new terms of governance for McGill-based Centres.

Sincerely,

David Eidelman, M.D., C.M.

cc: Dr Shari Baum
Dr Marcel Behr

McGill International TB Centre

Appendix C - Initial Executive Board Membership

Dean of Medicine (or delegate): David Eidelman

Vice-Principal (Research and international Relations) (or delegate): Shari Baum

Director: Marcel Behr

Full member 1: Associate Director Clinical Research – Dick Menzies

Full Member 2: Associate Director Global Research – Madhu Pai

Graduate Student: Robyn Lee

Graduate Student: Samuel Schumacher

Postdoctoral Fellow: Greg Fox

External Member: Joel Ernst, NYU

McGill International TB Centre

Appendix D - **Joint Publications of Full Members from 2009-2013**

1. N-glycolylated peptidoglycan contributes to the immunogenicity but not pathogenicity of Mycobacterium tuberculosis. Hansen JM, Golchin SA, Veyrier FJ, Domenech P, Boneca IG, Azad AK, Rajaram MV, Schlesinger LS, **Divangahi M**, Reed MB, **Behr MA**.*J Infect Dis*. 2013 Nov 21.
2. Nutritional status of adult patients with pulmonary tuberculosis in rural central India and its association with mortality. Bhargava A, Chatterjee M, Jain Y, Chatterjee B, Kataria A, Bhargava M, Kataria R, D'Souza R, Jain R, **Benedetti A**, **Pai M**, **Menzies D**.*PLoS One*. 2013 Oct 24;8(10):e77979.
3. Cell biology: A table for two. **Behr M A, Schurr E.** *Nature*. 2013 Sep 26;501(7468):498-9
4. Maternal sleep-disordered breathing and adverse pregnancy outcomes: a systematic review and metaanalysis. Pamidi S, Pinto LM, Marc I, **Benedetti A, Schwartzman K**, Kimoff RJ. *Am J Obstet Gynecol*. 2013 Aug 2
5. Trajectories of tuberculosis-specific interferon-gamma release assay responses among medical and nursing students in rural India. Zwerling A, Joshi R, Kalantri SP, Dakshinamoorthy G, Reddy MV, **Benedetti A, Schwartzman K, M e nzie s D, Pai M** .*J Epidemiol Glob Health*. 2013 Jun;3(2):105-17.
6. Tuberculosis vaccine trials. **Behr MA, Schwartzman K, Pai M.** *Lancet*. 2013 Jun 29;381(9885):2252-3
7. Comparing cost-effectiveness of standardized TB treatments given varying drug-resistance. Law S, **Benedetti A**, Oxlade O, **Schwartzman K, Menzies D.** Eur Respir J. 2013 Jun 13
8. Vitamin D induces interleukin-1β expression: paracrine macrophage epithelial signaling controls M.tuberculosis infection. Verway M, Bouttier M, Wang TT, Carrier M, Calderon M, An BS, Devemy E, McIntosh F, **Divangahi M,Behr MA, White JH**. *PLoS Pathog*. 2013 Jun;9(6):e1003407
9. Incidence of ethambutol-related visual impairment during treatment of active tuberculosis. Ezer N, **Benedetti A**, Darvish-Zargar M, **Menzies D**. *Int J Tuberc Lung Dis*. 2013 Apr;17(4):447-55.
10. Repeat IGRA testing in Canadian health workers: conversions or unexplained variability? Zwerling A, **Benedetti A**, Cojocariu M, McIntosh F, Pietrangelo F, **Behr MA**, **Schwartzman K**, **Menzies D**, **Pai M**. *PLoS One*. 2013;8(1):e54748.
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13. Gamma interferon release assay for monitoring of treatment response for active tuberculosis: an explosion in the spaghetti factory. Denkinger CM, **Pai M**, Patel M, **Menzies D**. J Clin Microbiol. 2013 Feb;51(2):607-10.
14. Point-of-care urine tests for smoking status and isoniazid treatment monitoring in adult patients. Nicolau I, Tian L, **Menzies D**, Ostiguy G, **Pai M**. PLoS One. 2012;7(9):e45913.
15. Multidrug resistant pulmonary **tuberculosis** treatment regimens and patient outcomes: an individual patient data meta-analysis of 9,153 patients. Ahuja SD, Ashkin D, Avendano M, Banerjee R, Bauer M, Bayona JN, Becerra MC, **Benedetti A**, Burgos M, Centis R, Chan ED, Chiang CY, Cox H, D'Ambrosio L, DeRiemer K, Dung NH, Enarson D, Falzon D, Flanagan K, Flood J, Garcia-Garcia ML, Gandhi N, Granich RM,

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18. Evaluation of the impact of interferon-gamma release assays on the management of childhood tuberculosis. Ling DI, Crépeau CA, Dufresne M, Khan S, Quach C, Dendukuri N, **Schwartzman K**, **Menzies D**, Lands LC, **Pai M**.*Pediatr Infect Dis J.* 2012 Dec;31(12):1258-62.
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21. Clinical outcomes of pyrazinamide-monoresistant Mycobacterium tuberculo**sis** in Quebec. Yee DP, **Menzies D**, **Brassard P**. *Int J Tuberc Lung Dis*. 2012 May;16(5):604-9.
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56. NOD2-deficient mice have impaired resistance to Mycobacteriu**m** tuberculosis infection through defective innate and adaptive immunity. **Div angahi M**, Mostowy S, Coulombe F, Kozak R, Guillot L, Veyrier F, Kobayashi KS, Flavell RA, Gros P, **Behr MA**. *J Immunol.* 2008 Nov 15;181(10):7157-65.

Centre universitaire de santé McGill
McGill University Health Centre
Les meilleurs soins pour la vie
The Best Care for Life

To : Anna Birnie-Lefcovitch
Special Project Officer
Research and International Relations, McGill University

Date: May 1, 2014

From: Marcel Behr, Dick Menzies, Madhukar Pai

Re: Centre application to RAC

Dear Ms. Birnie-Lefcovitch,

Thank you for the opportunity to present our application, in writing and in person, to the RAC. Thank you also for the feedback you have sent us. We have revised our application (attached) attending to the specific issues raised. In addition, please find below a point-by-point reply to each of these comments.

Yours,

Marcel Behr, Dick Menzies, Madhukar Pai

Point 1: Please expand on how the TB Centre will help McGill researchers maximize/capitalize upon partnership opportunities beyond what currently occurs. Describe the added valued to having a formal centre in more detail.

The MITBC will solidify McGill's position as one of the premier research groups in the world on Tuberculosis. Collectively, we have access to patient populations (here and abroad), their associated to clinical samples and a TB-specific level 3 containment laboratory where we can manipulate these highly contagious bacteria in a safe environment. These ingredients are then blended in an environment where we have a core group of award-winning investigators with collaborative links around the world.

These aforementioned activities can continue in the current context and are more than likely to grow as the investigators' research and training interests continue to expand. However, to bring our group to the next logical level, we intend to obtain formal group funding from a peer-reviewed agency, such as the FRQ (Reseaux), CIHR (Training grants) or the NIH (U19 awards). To be successful, groups applying for such team funding require a formal governance structure with bylaws, defined management roles and university support. The recognition of our currently informal group of TB investigators in the form of a Senate-approved McGill Centre is a key stepping stone to such initiatives. This expanded text can be found on page 8, section c "Value added" of the report.

Regarding partnership opportunities with industry, the TB drug market lacks sufficient financial incentives to stimulate a single private pharmaceutical company to invest in the new research required to sustain a treatment pipeline. The TB epidemic is concentrated in developing countries where drugs must be low in cost to remain accessible. It does not generate the kind of revenue streams that private companies usually deem necessary to justify the research costs and strategic risks involved in pharmaceuticals. In the last year, some companies, such as Pfizer, withdrew from the TB R&D field entirely, while others such as Otsuka, decreased their investments in drug discovery programs. Opportunities arise from time to time and MITBC is certainly willing to pursue opportunities with help from McGill business engagement/commercialization specialists/units.

Point 2: Please indicate how the McGill TB Centre will compete and collaborate with leading research centres that already exist. For example, describe unique/special qualities of the research projects that will be pursued, equipment/facilities, student opportunities, partnerships, and overall potential for impact.

Within Quebec, there is no other TB Centre.

In the rest of Canada, the only other TB Centre of which we are aware is at U.B.C.: http://ctbr.ubc.ca/. For Canadian funding, in most domains of research, we are confident that we can out-compete this centre which is smaller in numbers, publications and global outreach. If a national TB initiative were announced by the CIHR, there is sufficient complementarity between our groups that we could successfully work with this group to compete for a team grant, with the McGill TB Centre as the lead.

Beyond Canada, there are a number of TB Centres, either in the United States or elsewhere, e.g. Cape Town, S.A., Durban, S.A. and Paris, France. In terms of number and quality of investigators, we compare favourably. Our advantage is that we consider our Centre is more comprehensive than most, because many are either strong in the lab or strong in the field; we truly have strength from the lab to epidemiologic research to policy. Additionally, we have a local epidemic where we are both studying TB and intervening, with the introduction of new medical protocols for the detection and management of patients. Therefore, when contrasted to TB Centres in Harvard, Pasteur Institute or UCT, for instance, we can compete independently or partner with these groups for international research contracts. This is why we were recently invited to apply for a USAID contract, for which the results are pending, and why we expect to continue to be involved in international efforts (e.g. funded by the Bill and Melinda Gates Foundation) to understand and address the ongoing TB epidemic. This is detailed in the proposal on page 10, section b.

Point 3: It may also be beneficial to establish programming directed at students who wish to become policymakers. Please indicate if and how you intend to recruit additional researchers from non-medical fields and develop comprehensive programming for students with diverse career aspirations.

As we have mentioned in the oral presentation and our website, TB is a social disease with a medical aspect. One of our immediate priorities is to reach out to investigators with non-medical backgrounds to increase the scope of our team and gain a greater appreciation for how different research methodologies can offer new perspectives on the ongoing TB epidemic, within Canada and elsewhere.

Regarding policy, as noted in our presentation to the RAC, we are actively involved in TB policy from the Canadian TB Standards to World Health Organization guidelines. Just this week another WHO policy paper was released with input from our investigators. We have provided more details in the application as to our contributions to formulating guidelines and ensuring that these initiatives are realized in the field.

Point 4: Reviewers recommend connecting internally at McGill on programming that is participatory and reaches out explicitly to aboriginal peoples, who are among Canada's most vulnerable populations and are at higher risk for TB infection.

Thank you for this suggestion. We have previously attempted such to forge such links, but we did not have the suggested names provided by the RAC. We will now reach out to these individuals to ask whether they are interested, and if so, in what capacity, in working together with us. Normally the first line of contact will be via phone and email, followed by an invitation to present on their work at one of our monthly Centre meetings. Outreach with researchers/teams from other faculties will be on-going.

Point 5: Please clarify the roles and responsibilities of various committee members. For example, why does the Centre have two associate directors, and how are their roles defined and distinguished?

We have both programmatic and pragmatic reasons for having a Director plus two Associate Directors. On a programmatic level, the Directors have distinct backgrounds and expertise, positioning us in International Outreach (Pai), Clinical and Epidemiologic Research (Menzies) and Laboratory Research (Behr). This enables us to invite speakers and recruit students from a broad range of institutions worldwide who enrich our Centre with their own experiences and interests. Additionally, at a pragmatic level, each of us travels, to India, Ecuador or Nunavik, and two of us have clinical responsibilities at the McGill University Health Centre. As a result, it is not always possible to rely on one person as a contact person for media interviews or to host monthly meetings. Since the three of us have successfully worked together on grants, papers and courses, we see many advantages to having a team of Directors, who can provide reciprocal support as needed. Finally, we submit that three provide a greater perspective of opportunities and challenges than one, especially as we look towards obtaining a team grant to support our activities.

In the future, we expect there to be turnover of our Directorship, as is natural in an ongoing academic Centre. The bylaws we propose reflect our current reality, but we do not feel constrained to force future leadership to have three Directors in 5-10 years' time. So long as the Centre members agree, we can foresee modifying our bylaws on the number of Directors in the future, to best represent the Centre.

Point 6: Budget

We have developed a 5 year budget, as requested, that takes into account changes in revenues over the coming years and incorporates a planned team grant, starting in year 3. Details of this expanded budget are found in the full application.

Julie Degans
Academic Program Officer
Office of the Associate Provost, Policies, Procedures and Equity
845 Sherbrooke West, James Administration Building
Montreal, Quebec – H3A 2T5
Tel: 514 398 2985

November 4, 2014

Dear Julie,

As regards to the points that were made during the APC October 9th meeting in regards to the renaming and refocusing of the Centre for the Study of Host Resistance, please find the answers below following each comment.

Comment 1: The acronym of the renamed Centre was discussed: the committee thought that MITBC could be misleading *(note: could be mistaken for MIT in BC).* While the committee has no objections to the name and the acronym, the members wanted to make sure that the people proposing the renaming are aware of this.

Reply: We have looked at a number of variants, including MiTBC or McTBC, but each had its own issues. When we broke it down, MIT is in Massachusetts so we did not see an overlap with BC. In the end, we thank the members of the committee for this comment but we have decided to keep the current acronym, namely MITBC.

Comment 2: The committee would like to clarify whether there are still members affiliated with the McGill Centre for the Study of Host Resistance (as it appears to be the case, according to the Centre's webpage), and if yes, if they will be affiliated with the new Centre, and if they are in agreement with the refocusing and renaming of the Centre.

Reply: In 2012 we held meetings with all members of the Centre for the Study of Host Resistance and voted upon the proposed changes which were accepted unanimously. Following this vote, all members were invited to join the MITBC and many have done so. There have been no meetings of the Centre for the Study of Host Resistance since, nor has its web site have been updated recently. As far as process goes, we consider that the Centre for the Study of Host Resistance is no

longer an active entity. We could shut down its website if requested, but given its name and global recognition, we felt it best to retain that website with direct links on the individual pages to the new Centre. This way if people find our old papers from the pre-2012 era and find the Host Resistance name, they can trace back to us for follow-up studies, reprint requests, etc.

Comment 3: The committee was also a little surprised to find out that a webpage for the MITBC already exists, even if the Centre has not been formally created (http://www.mcgill.ca/tb/home-page). Members pointed out that it would be useful if IT services could set up a redirection (from the McGill Centre for the Study of Host Resistance webpage to the MITBC one).

Reply: We are sorry that we inadvertently worked out of order, given the advice we had been provided. We thank you for clarifying the process. We will proceed now to requests a redirection.

Comment 4: It was also suggested that, on page 10 of the proposal, paragraph V. c should read as follows: *"McGill already has an AIDS Centre and a ~~Centre for Parasitology~~ Centre for Host Parasite Interactions…"*

Reply: Thank you for pointing this out. This has been changed. Note also, we have included an updated proposal with this letter.

I hope this answers the queries raised during the meeting, but I remain available for any further clarification.

Yours truly,

Marcel Behr