UNIVERSITY OF TORONTO

OFFICE OF THE GOVERNING COUNCIL

FOR RECOMMENDATION **PUBLIC** **OPEN SESSION**

TO:	Committee on Academic Policy and Programs
SPONSOR:	Sioban Nelson, Vice-Provost, Academic Programs
CONTACT INFO:	(416) 978-2122, vp.academicprograms@utoronto.ca
PRESENTER:	See Sponsor
CONTACT INFO:	
DATE:	February 7 for February 27, 2018
AGENDA ITEM:	3

ITEM IDENTIFICATION:

Proposal for a new Graduate Diploma in Health Research (G.Dip.H.R.), Faculty of Medicine

JURISDICTIONAL INFORMATION:

The Committee on Academic Policy and Programs approves proposals for new graduate diploma programs and the closure of such programs *(AP&P Terms of Reference, Section 4.4.b.ii)*

GOVERNANCE PATH:

1. **Committee on Academic Policy and Programs [for approval] (February 27, 2018)**

PREVIOUS ACTION TAKEN:

The proposal for the Graduate Diploma in Health Research received approval from the Faculty of Medicine's Faculty Council on February 12, 2018.

HIGHLIGHTS:

This is a proposal is to establish the Graduate Diploma in Health Research (G.Dip.H.R.), offered by the Institute of Medical Science (IMS) in the Faculty of Medicine. The G.Dip.H.R. will be a stand-alone, direct-entry program diploma, or type 3 diploma as defined in the *Quality Assurance Framework* of the Ontario Universities Council on Quality Assurance. It consists of 2.5 full-course equivalents and registration will be part-time only.

Potential applicants will be registered students in good academic standing in the Doctor of Medicine (MD) program in the Faculty of Medicine, University of Toronto who wish to pursue

health science research. Applicants will apply through a competitive process to the diploma in the Fall of Year 1 of the MD and, if accepted, start in January of that year. Expected intake is 15 students per year and students will be registered part-time for 5 consecutive sessions (W/S/F/W/S).

The diploma will provide students with high-quality training in health research that will allow them to understand, interpret and apply the rapid changes in the scientific underpinnings of health care. It will broaden the students' awareness of the scope and depth of health research, and provide them with skills and networking interactions to facilitate their career development. It will also address an identified need in the training of physicians, especially of physician-scientists, and will provide one possible pathway to a career as a physician-scientist. The offering builds upon the success of an existing not-for-credit option for medical students that provides an opportunity for a small number of them to engage in research-related activities.

Consultation on the proposal has taken place within the Faculty of Medicine and with the Dalla Lana School of Public Health.

FINANCIAL IMPLICATIONS:

Any new financial obligations resulting from this program will be met at the Faculty level.

RECOMMENDATION:

Be it Resolved:

THAT the proposed new Graduate Diploma in Health Research, as described in the attached proposal from the Faculty of Medicine dated February 12, 2018, be approved effective January 1, 2019.

DOCUMENTATION PROVIDED:

- *Cover*
- *Proposal for a new Graduate Diploma in Health Research, Faculty of Medicine*

University of Toronto
New Graduate Program Proposal

This template is for all proposals for new graduate programs. It will help to ensure that all evaluation criteria established by the Quality Council are addressed in bringing forward a proposal for a new program. Separate templates have been developed for other types of proposals.

Full name of proposed program:	Graduate Diploma in Health Research
Degree name and short form:	Graduate Diploma in Health Research, G.Dip.H.R.
Program name:	Health Research
Professional program:	No
Unit (if applicable) offering the program:	Institute of Medical Science (IMS)
Faculty/division:	Medicine
Dean's office contact:	Allan Kaplan, Vice-Dean, Graduate and Academic Affairs, Faculty of Medicine
Graduate Unit Proponent:	Mingyao Liu, Director, Institute of Medical Science
Proponent:	Neil Sweezey, Director, Comprehensive Research Experience for Medical Students (CREMS) Programs, MD Program, Faculty of Medicine
Version date:	February 12, 2018

New Graduate Program Proposal

Graduate Diploma in Health Research
Institute of Medical Science (IMS)
Faculty of Medicine

Contents

1 Summary

This proposal is to establish the Graduate Diploma in Health Research (G.Dip.H.R.), offered by the Institute of Medical Science (IMS) in the Faculty of Medicine (FOM). This will be a stand-alone, direct-entry program known as a type 3 diploma, as defined in the Quality Assurance Framework of the Ontario Universities Council on Quality Assurance (http://oucqa.ca/framework/1-6-definitions/). Consistent with School of Graduate Studies requirements for graduate level studies, admission to this master's level Diploma of 2.5 full course equivalents will require a four-year Bachelor's degree. The designation is an appropriate recognition of the academic level, duration and subject matter involved. Potential applicants will be registered students in good academic standing in the 4-year-long Doctor of Medicine (MD) Program of the FOM, University of Toronto. The entire Diploma curriculum will be completed within the MD timeframe. For 5 consecutive terms, Diploma students will be registered as part-time graduate students, beginning with the Winter term of the first MD year.

The purpose of the Diploma is to provide accepted applicants, who will be in the MD program, high quality training in health research in order to understand, interpret and apply the rapid changes in the scientific underpinnings of health care. The Diploma specifically targets those future physicians who will need the additional skills necessary to contribute to health-related studies in their future careers and the select group who will become leaders in health research. The FOM of the University of Toronto, a widely recognized world leader in health-related research and teaching (Section 14, Quality and Other Indicators, page 25), is uniquely positioned to enhance its activities in physician-scientist training through the establishment of this Diploma.

The Diploma will be unique among Canadian Faculties of Medicine in terms of the scope, program duration, credentialing and concurrent delivery of training with regular medical school classes. The aim is to engage selected medical students in health research with the intent to develop enriched, graduate level research knowledge and skills that will inform and support a future career in the field of health research. Moreover, the formal credentialing and recognition of this program will provide graduates with a competitive advantage when seeking future senior positions involving health research.

2 Effective Date

Students anticipated to start the program: January, 2019

3 Program Rationale

Physician-Scientists are qualified as experts in both health care and health-related research, and thus are uniquely positioned to understand, prioritize, conduct and translate health research to clinical application. They are highly sought after by academic institutions in North America and around the world. In practice, the order in which individual physician-scientists receive their training varies: some qualify as scientific researchers first, others as physicians first, and yet others have interspersed, concurrent and/or coordinated clinical and scientific elements of their training. Examples of these last groups are formal MD/PhD programs and Clinician-Investigator Programs in research training for

physicians combined with post-graduate clinical (Fellowship) training. The Diploma will provide one of multiple possible entrance pathways to a career as a physician-scientist through experiences in health research for medical students. It will serve a subset of medical students, interested in health research training, who seek a curriculum that is more extensive than one or two summer research experiences. This will inform the decisions of some students as to whether a more substantial future commitment to a health research career is desired. For others who have already made that decision, it will permit them to maintain and nurture their previously acquired research involvement while initiating their clinical training, without prolonging the time required to complete their MD. Importantly, achievement of such a credential is expected to provide interested students with a competitive advantage in acquiring both future training opportunities and eventually independent research funding in the increasingly competitive health research environment.

The proposed Diploma is informed by, and builds upon, the popularity and success of an existing not-for-credit option for medical students to conduct research. This existing option is the Research Scholar experience, offered since 2010 for a limited number of students within the MD Program. The Diploma will broaden the students' awareness of the scope and depth of Health Research, providing them skills and networking interactions to facilitate their career development. It will also address identified needs in the training of physicians, especially of physician-scientists.

The Diploma will be offered though the IMS, a large Extra-Departmental Unit: B (EDU:B) within the FOM that offers MSc and PhD degrees in medical science. Specific IMS half- courses will be available as appropriate electives. This graduate unit is the appropriate home for the Diploma because of its traditional focus on translational ("bench to bedside") health research and its involvement in physician-scientist training. IMS also has a large number of clinical faculty with graduate faculty memberships who will participate in teaching responsibilities and as role models. Moreover, for some highly talented Diploma graduates who will pursue careers as physician-scientists, the faculty from IMS and our other partner units may become desirable future training supervisors and career mentors.

Mode of Delivery

The Diploma program will be delivered as a combination of didactic lectures, mentorship, interactive seminars and an online instructional element. The Diploma is a standalone diploma, delivered on a part-time basis, for students who are enrolled in the second entry undergraduate MD Program of the FOM. The core mentored Supervised Research Project (MSC1991Y) course will involve experiential learning as well as face-to-face interactive supervision. Didactic classroom lectures, interactive seminars and tutorials will be delivered face-to-face. The course *Research Skills for the Physician-Scientist* will consist of 4 modules: (1) *Preparing for Research,* (2) *Translational Research Topics for Physicians,* (3) *Special Topics in Health Research,* and (4) *Dissemination of Results*. The mode of delivery for each module is selected to optimize the delivery of the material and to support the achievement of the learning outcomes. The specific courses of the Diploma are described in Section 9, Program Description.

Appropriateness of Nomenclature and Name:

This is a master's level standalone type 3 direct entry diploma called G.Dip.H.R. The nomenclature (Graduate) denotes the level of the course work and supervised research training, and (Diploma) appropriately situates the program. The program name (Health Research) clearly conveys the range of subject areas. Students will develop a conceptual understanding of fundamental aspects of the

disciplines of health research and will demonstrate the appropriate level of analytical, interpretive, methodological and expository skills through course-specific applications.

Distinguishing Features and Context:

The Diploma will be open exclusively to U of T medical students who at the time of admission have (at a minimum) a 4 –year bachelor's degree. For the class starting in 2016, this was 87% of the class. It will be delivered on a part time basis, spread across 20 consecutive months embedded in the MD Program. It will not extend the time required to complete the MD degree program. It will explicitly provide all students exposure to a range of research approaches, including those of physician-scientists working in areas outside the specific fields of the student's own research.

None of the other Canadian programs that engage medical students in health research are strictly comparable. The University of Alberta awards an additional notation "With Special Training in Research" on the MD degree and on the academic transcript of students who complete a least one summer full time plus subsequent part time school-year hours conducting supervised research. The University of Manitoba regularly offers a Bachelor of Science in Medicine [BSc (Med)] program that is traditionally completed by roughly 50% of the undergraduate medical class of 110 students, who undertake a research experience of 7 months split over the two summers after the first and second years. That program does *not* run concurrently with the MD program, involves much larger numbers of trainees than we propose and shorter training at a lower (undergraduate) level of training.

Queen's University, and the Universities of Montreal, Manitoba, Sherbrooke, Laval and Calgary offer a traditional, full-time MSc program to individual medical students. Most commonly, upon completion of the second medical school year, these students are temporarily released from their medical school program for 12 to 15 months to complete a thesis-based MSc, and then rejoin the third medical year. Although these programs also offer training at a graduate level, they involve smaller numbers of trainees than we propose and they extend the time to completion of the MD degree by at least one year. These comparisons are summarized in the Table in Appendix E - Canadian Comparators of GDipHR.

The highly competitive MD-PhD programs, offered at the University of Toronto and elsewhere in Canada and the United States, are quite different from the Diploma in scope, duration, goals and target trainees. They target a very select group of students who, already committed to a career in health research, undertake to complete both the MD and PhD degrees in roughly eight years. New graduates of MD-PhD programs may reasonably expect to be closer to preparedness for a leadership career in health research than a new graduate with an MD/ Diploma who did not already have a graduate degree in health - related research before starting medical school. The Diploma will offer a unique research-focused offering with a smaller scope appropriate for those who wish to decide if a more substantial future commitment to a health research career is desired, or who wish to keep their pre-existing research skills current while undertaking their initial clinical training in the MD Program.

Aligning Academic Priorities: U of T and FOM

The Graduate Diploma is consistent with the academic mission of the University, the FOM and with the goals of Physician-Scientist Training within the FOM. The Physician-Scientist Training is designed to prepare physicians-in-training for a career of leading medical discovery, and the application of new knowledge to improve human health. Within the MD Program, physician scientist training would then be divided into two streams, each one distinct in its target audience and goals. The MD/PhD program is designed for medical students who wish to integrate their undergraduate (MD) and graduate studies (PhD) with the intent to become physician-scientists. Generally speaking, students

take 8-9 years to complete this program (i.e. MD program is 4 years, PhD program is 5 years). For most MD students interested in pursuing research training, this is not a feasible option. Hence, the proposed Diploma will add a new entrance pathway for physicians-in-training wishing to develop research skills to conduct and participate in research studies in the future. This proposed Diploma addresses the needs of this identified target group of medical students at the beginning stages of their clinical training, builds upon existing programs and partnerships that the MD Program has with graduate units within the FOM, and with the McLaughlin Centre, a research unit in the FOM that supports excellence in genomics research and education.
Support for the Diploma will also come from the Institute of Health Policy, Management and Evaluation (IHPME) in the Dalla Lana School of Public Health (DLSPH), as further described in the letter from the DLSPH (Appendix F).

4 Fields/Concentrations

N/A

5 Need and Demand

The existing not-for-credit Research Scholar experience option within the broader Physician-Scientist Training program has been popular with research supervisors and in demand by MD students for 8 years. Between 2014-2017, there have consistently been more prospective supervisors proposing projects (30 - 50) than could match with eligible students (24 -31), and in turn more applications than were funded in competition (11 -16). Importantly, the official recognition of the completion of the graduate Diploma (i.e. parchment) makes this an attractive learning opportunity. A proportion of these students have realistic ambitions to become independent leaders of health research, who will be sought after by academic institutions in North America and around the world. For them, the opportunity offered by the Diploma to develop further specialized research-skills under the supervision of high-calibre health researchers at the University of Toronto will be highly advantageous.
There are two broad groups of first year medical students whose needs will be targeted by the proposed Diploma. The first group are those who find that a single summer of research training is insufficient to learn or achieve enough to meet their needs. Some of these students have not yet committed to embarking on a life-long career as a physician – scientist, in which a significant percentage of their career will be devoted to research. In Canada, training for this type of career is typically through attainment of a graduate degree (MSc or PhD) which requires additional time commitment beyond four years of MD training. This group of students will be able to use the proposed graduate Diploma program to obtain relevant research training and experience within the time frame of a regular four-year MD program, and help them decide whether they wish to pursue additional training that would lead to a career as a physician-scientist.
The second group of targeted students are the roughly 20 - 30 % of recent 1st year medical students (50 - 75 students) who have an MSc or doctorate in health research prior to entering medical school. The proposed Diploma will provide some of the students in this group with an opportunity to continue their research training, building further upon what they have already achieved. They will be able to stay current in their research field and maintain their health research involvement during the MD Program, be mentored by experienced University of Toronto graduate faculty, conduct research

relevant to their interests, have contact and engage with physician-scientists during their clinical training and explore enriching options and opportunities. Roughly 25% of students pursuing the not-for-credit Research Scholar offering have been from this second group. A comparison of the Diploma program with other programs offered in Canada is presented in Section 3, above, and in Appendix E - Canadian Comparators of GDipHR, page 43.

6 Enrolment

Expected enrolment to steady state levels of 30 students are outlined below based on Fall/Winter/Summer registration:

Table 1: Graduate Enrolment Projections

Year of Study	2018-19	2019-20	2020-21	2021-22	2022-23
Year 1 (Jan–August)	15	15	15	15	15
Year 2 (Sept–August)	N/A	15	15	15	15
Total	**15**	**30**	**30**	**30**	**30**

The numbers shown (representing about 6% of each year's medical class) are based on budgetary estimates of the numbers of students that can be supported in the Diploma program. The number of students enrolled in the Faculty's MD Program is not altered by the number of students enrolled in the Diploma. Only students registered and in good academic standing in the MD program may apply and remain in the Diploma program (see Section 7, below), and a medical student's optional application to the Diploma does not alter his or her enrollment in the MD program. Currently, we do not anticipate any international students to be enrolled in the program. However, the MD program has started to accept applications from international students so it is possible in the future that international students could apply and be accepted into this program.

7 Admission Requirements

Diploma students must meet the School of Graduate Studies minimum admission requirements for master's level diploma programs, including a four year Bachelor's Degree. They must also be enrolled, and in good academic standing, in the first year of the MD Program of the FOM of the University of Toronto. All courses in all four years of the MD Program at the University of Toronto are evaluated using a credit/no credit grading scale, which is commonly referred to as 'Pass/Fail' at other

institutions. The CR/NC approach to transcription of grades is congruent with our competency-based curriculum and approaches to student assessment. It is also in line with the trend in grading policy across Canada. Diploma students are expected to maintain CR status across all courses and not to be on academic probation for any part of the MD Program. Those who do not meet these criteria will not be eligible to apply or to remain in the Diploma program.

Acceptance of eligible medical students into the Diploma program will occur as follows. At the beginning of the fall term, all first year MD students will be notified about the Diploma Program and directed to resources including the Program's website that will list constituent Faculty and areas of research activity. Any interested students will have until Oct. 20 to apply to the Program through the SGS Online Application Admission (OAA) system

- Curriculum Vitae
- a personal statement explaining their interest in the Program
- a description of a research project they are interested in
- written confirmation of Good Standing in the MD Program (letter from the program, signed by the Registrar/Vice-Dean)
- undergraduate and/or graduate academic transcripts

Applications will be submitted to the Adjudication Committee for competitive selection. Adjudicators will assess each application for overall acceptability as well as provide a cumulative numerical score for rank ordering by November 25. By Dec. 7, the students with the top 15 applications will be informed of their selection as is usual for graduate programs. The IMS Director of Education and the Graduate Coordinator for GDipHR will sign off on the adjudication process.

The requirement for concurrent enrollment in the University of Toronto Doctor of Medicine degree program throughout the registration in the Diploma is by definition central to the learning outcomes for the program. The MD Program office will promptly notify the Diploma program office should any GDipHR student's continuation in the MD be threatened for academic reasons. Withdrawal from the MD Program would automatically constitute withdrawal from the Diploma. The need for a Bachelor's degree at enrollment is consistent with the requirements of the School of Graduate Studies (SGS).

8 Program Requirements

Please see Appendix B for proposed calendar copy.

Completion of the course *Supervised Research Project* (MSC1991Y)

Completion of the course *Research Skills for the Physician-Scientist* (MSC1992Y). It is composed of 4 modules: (1) Preparing for Research, (2) Translational Research Topics for Physicians, (3) Special Topics in Health Research, and (4) Dissemination of Results. Modules will include a combination of face-to-face seminars presented by faculty; graded seminars and oral presentations by students; grading of responses by students to critical questions from their peers and faculty; and online learning.

Completion of a 0.5 FCE elective course selected from an approved list (Appendix A). Substitution of any other graduate-level course relevant to the student's research course but not found on the approved list will require completion of a course exemption form signed by the IMS Graduate Coordinator and the selection of the course will be done in consultation with the Program Director Maintain good academic standing in the MD program.

Relationship of program structure and requirements to learning outcomes:
The *Supervised Research Project* (MSC1991Y) and *Research Skills for the Physician-Scientist* (MSC1992Y) courses are structured to provide experiences and critically reviewed, graded activities that prepare the student to conduct and disseminate health research. The elective 0.5 FCE course presents an opportunity to explore a field of potential interest in greater depth to assisting the student in selection of areas for future study, acquisition of complementary knowledge and skills applicable to an already selected field of study and / or appreciation of the relevance of the field of interest to the broad goals of clinical medicine.

Providing mental or physical health accommodations:
The potential need to provide mental or physical health accommodations has been considered in the development of this program. The identification of any such need in a Diploma student will trigger a consultation with the Office of Health Professions Student Affairs (OHPSA), which supports MD students and helps them with career counselling, career exploration, personal counselling & student wellness, academic coaching & prep, getting involved & co-curricular activities and summer mentorship programs. Detailed information can be accessed through:
http://www.md.utoronto.ca/OHPSA

9 Program Description

The Diploma program consists of two full courses, MSC1991Y and MSC1992Y, and an elective half course:

MSC1991Y (*Supervised Research Project*) involves mentored, supervised experiential learning. The supervisor provides guidance as needed during the conduct of the project, during reflection upon what has been learned thereby and during the dissemination of novel results to target audiences. This classical form of research learning is considered essential to graduate level research training.

MSC1992Y (*Research Skills for the Physician-Scientist*) will consist of four sections of equal weight, involving a blend of lectures, seminar - discussions, project assignments and on-line material. The modes of delivery are selected by topic in order to maximize efficiency of the experiences and retention of the material. The four course sections will be (1) *Preparing for Research,* (2) *Translational Research Topics for Physicians,* (3) *Special Topics in Health Research,* and (4) *Dissemination of Results*.

The **elective graduate level half course** will be chosen by students from amongst the list (Appendix A, pages 27 and following) of available courses offered by the IMS and the Department of Laboratory Medicine and Pathobiology (LMP) in the FOM, and the Institute of Health Policy, Management and Evaluation (IHPME), Dalla Lana School of Public Health (DLSPH), with the approval of the Program Director/Graduate Coordinator. Each available elective course will be delivered as per its respective School of Graduate Studies (SGS) calendar course description.

Critical to achieving the learning outcomes of the program, students interact with and learn from SGS-appointed faculty. While some are full-time research scientists, others are physician-scientists who commit a portion of their professional time to clinical activities and hence serve vital functions as role models.

PROGRAM SCHEDULING - relationship between MD and Diploma programs
All Diploma students must also be registered in the undergraduate MD program, which has Fall and Winter terms in each year, but not Summer terms in the first two years. The Diploma program will begin at the start of the 2nd (Winter) term of the MD Program's first year. The Diploma students will be registered on a part-time basis program over 5 consecutive terms, proceeding with a registration sequence of winter /summer /fall /winter /summer (*see Table 2*, below). Therefore, Diploma students will also be registered concurrently as full-time MD students in the Winter term of the first MD year and during the Fall and Winter terms of the second MD year.

In order to limit the additional workload generated by Diploma-related activities during the regular MD program, the aggregate of Diploma activities will occupy at least 40 hours per week during the Summer sessions, but no more than 10 hours per weeks during the Fall and Winter sessions. Recent changes to the scheduling of MD for-credit activities early in the MD program have created the opportunity for a small number of MD students to pursue cognate academic activities. The Diploma, with its research focus in the area, will be highly attractive to a small subset of highly qualified MD students.

Table 2: Timing of Delivery of Program Content

Diploma Activities	Full-Course Equivalent (FCEs)	MD Year 1 Winter	MD Year 1 Summer	MD Year 2 Fall	MD Year 2 Winter	MD Year 2 Summer
(a) Research Skills for The Physician Scientist, MSC1992Y 4 Modules (.25 FCE each) within one course	1.0					
(1) Preparing for Research		X				
(2) Translational Research Topics for Health Professionals			X			X
(3) Special Topics in Health Research (spread out over 4 terms)			X	X	X	X
(4) Dissemination of Results						X
(b) Elective (flexible timing*)	0.5	*	*	*	*	*
(c) Supervised Research Project, MSC1991Y (continuous)	1.0	X	X	X	X	X
Diploma (G.Dip.H.R.) Time commitments (a+b+c)		10 hr/wk	40 hr/wk	10 hr/wk	10 hr/wk	40 hr/wk

MD program registration (full-time)		X	—	X	X	—

The major research requirement will be, in MSC1991Y (*Supervised Research Project*), conducting and disseminating the results of original health research at a graduate level. Students will complete a final Structured Research Report and, where possible, contribute to the dissemination of the results of the research. The adequacy of the student's progress and a grading of the final Structured Research Report will be determined by a Supervisory committee of SGS-appointed faculty recruited by the primary Supervisor, using a standardized assessment form.

The experience of the Research Scholar activity suggests that the allotted time is adequate to complete the mentored Conduct of Research course component of the proposed Diploma. Much of the additional coursework associated with the present proposal can reasonably be completed during the two summer sessions, when the students will be free of workload from the medical program.
The primary research supervisor has overall responsibility for (a) mentoring the student throughout MSC1991Y (b) recruiting a supervisory committee of graduate faculty members, (c) grading the initial written plan by the student describing the health research techniques and how they are to be used in the conduct of their individual research project, (d) ensuring the timely availability of the facilities, material and training necessary for the student to complete the course requirements.
The supervisory committee members (at least two) will assist and advise the primary supervisor, help to ensure the students' needs are met and that their progress is acceptable, and will grade the final Structured Research Report.

10 Degree-Level Expectations (DLEs), Program Learning Outcomes and Program Structure

- Identify the specific learning outcomes for the proposed program for each of the DLEs and describe the elements in the program’s requirements that support these.

Table 3: DLEs

Expectations

In the absence of specific Graduate Diploma DLE's based on the OCAV DLEs, it is appropriate that the Degree Levels Expectations (DLEs) for the graduate diploma, G.Dip.H.R. be consistent with Master's DLEs.

This Table 3 summarizes how each DLE Outcome will be supported.

The *Graduate Diploma in Health Research (GDipHR)* is awarded to students who have demonstrated:

DEGREE LEVEL EXPECTATIONS	PROGRAM LEARNING OUTCOMES	HOW THE PROGRAM DESIGN AND STRUCTURE SUPPORT THE DEGREE LEVEL EXPECTATIONS	ASSESSMENT OF STUDENT ACHIEVEMENT, RELATIVE TO ESTABLISHED PROGRAM LEARNING OUTCOMES AND DEGREE LEVEL EXPECTATIONS
1. Depth and Breadth of Knowledge A systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of the academic discipline, field of study, or area of professional practice.	Depth and breadth of knowledge is defined in GDipHR as a systematic understanding, and critical awareness, of (a) current gaps in health-related knowledge and (b) of approaches to bridging these gaps in health research. **Outcomes**: This is reflected in students who are able to: 1. Identify current gaps in health research, ranging across studies in a range of fields, such as biomedical discovery; clinical (human subjects) research; health systems and services; and social, cultural and environmental factors that affect the health of populations 2. Outline current approaches to bridge such gaps in knowledge in health research 3. Explain principals and analytical skills that underlie the conduct of health	Outcomes 1, 2 and 3 will be addressed in didactic and interactive seminars taught by senior U of T faculty researchers in the *Research Skills for the Physician-Scientist* course (MSC1992Y). In achieving Outcomes 1, 2 and 3, library support is available to assist students with relevant literature searching skills. Additional opportunities to address Outcomes 1, 2 and 3 will be provided in the 0.5 FCE elective courses.	For Outcomes 1, 2 and 3, students will, in the *Research Skills for the Physician-Scientist* course (MSC1992Y), each present to peers and faculty two seminars on focussed health research topics. One topic will be related, and the other topic unrelated, to the field of their personal research projects. For each focussed topic, the student will identify a current gap(s) in knowledge, outline existing approaches to bridge such gaps, and explain a relevant principal and / or analytical skill sustaining health research in the field. All student seminars will be heard and graded by faculty (with peer feedback input directly to students). Each student will also be graded by faculty on the quality of their answers to questions asked at their own presentations, and on the required contributions to questions at seminars presented by their peers. Student-led journal club critical review of a paper from a field outside of the field of their research project to be graded by faculty. The 0.5 FCE elective courses will assess student achievement of Outcomes 1, 2 and 3 through a variety of approaches suitable to their subject areas.

DEGREE LEVEL EXPECTATIONS	PROGRAM LEARNING OUTCOMES	HOW THE PROGRAM DESIGN AND STRUCTURE SUPPORT THE DEGREE LEVEL EXPECTATIONS	ASSESSMENT OF STUDENT ACHIEVEMENT, RELATIVE TO ESTABLISHED PROGRAM LEARNING OUTCOMES AND DEGREE LEVEL EXPECTATIONS
	research in the following areas: ethics; problem-solving and decision-making; communication of results, conclusions, implications for human health, suggested follow-up study; self-management; and teamwork and leadership. (4) Discuss the approaches and techniques of researchers in fields other than their own.		
2. Research and Scholarship A conceptual understanding and methodological competence that i) Enables a working comprehension of how established techniques of research and inquiry are used to create and interpret knowledge in the discipline; ii) Enables a critical	Research and Scholarship is defined in GDipHR as having a conceptual understanding and methodological competence that enables the creation and critical interpretation of new knowledge; and the capacity to apply established principals and techniques to the proposition of novel hypotheses or novel approaches to hypothesis testing: **Outcomes:** This is reflected in students who are able to:	Outcomes 1, 2, 3 and 4 will be addressed by the supervisor / mentor of the *Supervised Research Project* (MSC1991Y) through role modelling in laboratory meetings and direct one-on-one supervision and mentoring. Outcomes 1, 2, 3 and 4 will also be addressed in faculty - presented didactic seminars of *Research Skills for the Physician-Scientist* (MSC1992Y). Selected topics will be addressed in core areas of health research principals and techniques with which all health researchers should	For Outcomes 1, 2 and 3, students in *Supervised Research Project* (MSC1991Y) will provide required written plans describing pertinent health research techniques and how they are to be applied in the conduct of their individual research project. Graded by their Research Mentor / other faculty). For Outcome 4, students will provide a required, brief written summary of discussions they have had with their MSC1991Y mentor of the student's suggestion of at least one novel question or modified methodological approach (not originating with the mentor) that could in theory be incorporated as an aspect of the student's project. The summary will include a rationale as to why the suggestion was or was not accepted

DEGREE LEVEL EXPECTATIONS	PROGRAM LEARNING OUTCOMES	HOW THE PROGRAM DESIGN AND STRUCTURE SUPPORT THE DEGREE LEVEL EXPECTATIONS	ASSESSMENT OF STUDENT ACHIEVEMENT, RELATIVE TO ESTABLISHED PROGRAM LEARNING OUTCOMES AND DEGREE LEVEL EXPECTATIONS
evaluation of current research and advanced research and scholarship in the discipline or area of professional competence; and iii) Enables a treatment of complex issues and judgments based on established principles and techniques; and, on the basis of that competence, has shown at least one of the following: i) The development and support of a sustained argument in written form; or ii) Originality in the application of knowledge.	(1) Discuss the features of established techniques of health research that permit the creation and interpretation of knowledge; (2) Identify strengths and weaknesses in the current state of health-related knowledge and literature; (3) Use established principles and methods to simplify the answering of complex questions by breaking them down into more simple component parts; and (4) Demonstrate originality by proposing a novel hypothesis/asking a novel question, or by designing a novel methodological approach to testing an hypothesis / answering a question	have a minimum level of familiarity. These topics include: quantitative and qualitative techniques, clinical and translational research, basic biomedical / molecular / developmental / stem cell biology Outcome 4 will be addressed by the supervisor / mentor of the *Supervised Research Project* (**MSC1991Y**) by providing the student one or more citations of a paper(s) in the published literature that demonstrates Outcome 4.	for application in practice. Graded by Mentor / other faculty.
3. Application of Knowledge Competence in the research process by applying an	Application of Knowledge is defined in GDipHR as conducting a continuum of health research from idea	Outcomes 1 and 2 will be addressed and taught by the supervisor / mentor of the *Supervised Research Project* (**MSC1991Y**) through role modelling in	Outcomes (1), (2) and (3) will be assessed in graded student presentations summarizing the current state (including gaps) of knowledge in their field, their choice of research question (or hypothesis)

DEGREE LEVEL EXPECTATIONS	PROGRAM LEARNING OUTCOMES	HOW THE PROGRAM DESIGN AND STRUCTURE SUPPORT THE DEGREE LEVEL EXPECTATIONS	ASSESSMENT OF STUDENT ACHIEVEMENT, RELATIVE TO ESTABLISHED PROGRAM LEARNING OUTCOMES AND DEGREE LEVEL EXPECTATIONS
existing body of knowledge in the critical analysis of a new question or of a specific problem or issue in a new setting.	creation to data collection to a scientific publication and/or a presentation at an international conference / meeting. **Outcomes**: This is reflected in students who are able to: (1) Formulate a question to be addressed and/or an hypothesis to be tested (2) Design a study with its specific experimental aims. The study should account for the following: identify methodologies to be employed obtain needed regulatory approval (e.g., ethics – human / animal) recruit human subjects / acquire animals subjects establish contact with needed collaborators	laboratory meetings and direct one-on-one supervision and mentoring in the planning, conduct, analysis and reporting of the research project. Outcomes 1, 2 and 3 will also be addressed in the Research Skills for the Physician-Scientist course (**MSC1992Y**), Modules 2 (Translational Research Topics for Health Professionals) and 3 (Special Topics in Health Research). Students will experience critical analysis of a new question or of a specific problem or issue in a new setting.	and its rationale and significance to human health, the plan of their own study including aims and methodologies, and potential follow-up studies. Graded by faculty. At the end of the first winter session, the primary supervisor/mentor will grade, on a Pass/ Fail basis, a written plan by the student describing the principals and application of the health research techniques to be used in the conduct of the research project Outcome 4 will be addressed when each student presents a scholarly discussion of their approach to a research question or principles to be considered in problem solving in a research area of a peer student who is working in a different field and / or with different research methodologies from their own. The other student will then be asked to comment on the presentation (student participation required for credit). All student seminars will be heard and graded by faculty (with peer feedback input directly to students).
4. Professional Capacity / Autonomy a. The qualities and transferable skills necessary	Achieving the high levels of Professional Capacity and Autonomy that are required of an independent researcher is beyond		

DEGREE LEVEL EXPECTATIONS	PROGRAM LEARNING OUTCOMES	HOW THE PROGRAM DESIGN AND STRUCTURE SUPPORT THE DEGREE LEVEL EXPECTATIONS	ASSESSMENT OF STUDENT ACHIEVEMENT, RELATIVE TO ESTABLISHED PROGRAM LEARNING OUTCOMES AND DEGREE LEVEL EXPECTATIONS
for employment requiring i) The exercise of initiative and of personal responsibility and accountability; and ii) Decision-making in complex situations; b. The intellectual independence required for continuing professional development; c. The ethical behavior consistent with academic integrity and the use of appropriate guidelines and procedures for responsible conduct of research; and d. The ability to appreciate the broader implications of applying knowledge to particular contexts.	the scope of this Diploma program.		

DEGREE LEVEL EXPECTATIONS	PROGRAM LEARNING OUTCOMES	HOW THE PROGRAM DESIGN AND STRUCTURE SUPPORT THE DEGREE LEVEL EXPECTATIONS	ASSESSMENT OF STUDENT ACHIEVEMENT, RELATIVE TO ESTABLISHED PROGRAM LEARNING OUTCOMES AND DEGREE LEVEL EXPECTATIONS
5. Level of Communications Skills The ability to communicate ideas, issues and conclusions clearly.	Communications Skills are defined in GDipHR as the ability to communicate ideas, novel findings, issues and conclusions relating to health research clearly to a wide range of audiences. **Outcomes**: This is reflected in students who are able to: 1. Write about elements of research productivity with clarity and concision. Elements of research may include: reasoning methodologies results analyses originalities future directions translational and clinical impacts 2. Deliver engaging oral presentations on elements of research productivity. 3. Communicate to a variety of audiences, orally and in writing. The audiences may include professional, academic and general public end-users of their research productivity.	Outcome 1 will be addressed particularly in the final written *Structured Research Report* of each student completing the GDipHR program. It will be the primary responsibility of the supervisor / mentor of the *Supervised Research Project* **(MSC1991Y)**, in collaboration with the research project supervisory committee, to guide, teach and maintain the graduate level experience of the student in this activity. The members of the supervisory committee will meet with the student and primary supervisor at a minimum at the beginning of the first summer session and the beginning of each session thereafter. A record of the assessment of progress at each meeting will be submitted to the Diploma office. Outcomes 1, 2 and 3 are addressed in didactic sessions in the *Research Skills for the Physician-Scientist* course (MSC1992Y). The course will include seminars on career development issues, including communicating with	Outcome 1 will be evaluated primarily through the formal review and grading of the student's final written *Structured Research Report* by the research project Supervisory Committee. In order to finally pass the course, students must each submit (no later than 2 weeks after the end of the second summer session) to the Supervisory Committee a *Structured Research Report* that documents their contributions to the research project during the program, representing an equivalent amount of work to earning authorship on a paper. The committee will grade it on a (Credit / No Credit) basis. Students assessed a No Credit grade will be given a single opportunity to revise and resubmit after receiving written reasons for the No Credit grade. Instructors are not obliged to accept late work, except where there are legitimate, documented reasons beyond a student's control. Outcomes 1, 2 and 3 will be assessed through required, graded written reports and oral presentations by students at the various stages of the preparation, conduct, analysis and communication of the results of their research project. Students will be required to think on their feet, responding to critical questions and comments from mentors, other faculty and peers after the students' presentations. All student seminars will be heard and graded by faculty (with peer feedback input directly to

DEGREE LEVEL EXPECTATIONS	PROGRAM LEARNING OUTCOMES	HOW THE PROGRAM DESIGN AND STRUCTURE SUPPORT THE DEGREE LEVEL EXPECTATIONS	ASSESSMENT OF STUDENT ACHIEVEMENT, RELATIVE TO ESTABLISHED PROGRAM LEARNING OUTCOMES AND DEGREE LEVEL EXPECTATIONS
		potential employers, the media (TV, radio, newspapers), trainees at all levels, the general public, publishers, funding agencies, peer reviewers, applicants for funding / training positions, university and hospital administrators, government, industry.	students). Each student will also be graded by faculty on the quality of their answers to questions asked at their own presentations, and on the required contributions to questions at seminars presented by their peers. Outcome 3 will be evaluated with respect to communicating with academic and / or professional audiences of their mentors, other faculty members and their peers. Assessing the achievement of the students in communicating to general public end-users of their research productivity is beyond the scope of this Diploma program. Exercises will be reviewed, and the criteria for the final grading will be approved, at the level of the IMS Curriculum Committee.

11 Assessment of Learning

In the obligatory courses, Supervised Research Project (MSC 1991Y) and Research Skills for the Physician-Scientist course (MSC1992Y):
Assessment of the achievement by students relative to established program learning outcomes and degree level expectations (DLEs) is described above, in the right-hand (fourth) column of Table 3, in Section 10, Degree Level Expectations, Program Learning Outcomes, *Program Structure and Assessment of Student Learning.*

In the Elective 0.5 FCE Courses:
The learning expectations, learning outcomes and associated evaluations of GDipHR students taking elective graduate courses will be the same as for the other students taking the same course.
The effectiveness of the proposed Diploma program as a whole will be assessed by:
The numbers / proportion of the students successfully completing the program, and the assessments of their performance by the faculty.

Evaluations by the students of the courses they have taken, *Supervised Research Project* (MSC1991Y) and *Research Skills for the Physician-Scientist* course (MSC1992Y), along with their elective 0.5 FCE course.

The number of papers / presentations by the students, and the quality as assessed by the impact factor and stature in their particular field of the publications or the fora in which they are found.
Ongoing interest in the program, as evidenced by the numbers of applications from highly qualified students and by interest from SGS-appointed faculty in mentoring the research activity and in contributing to the mentoring / evaluating / traditional teaching of the students.
The interest in ongoing collaboration by partner Faculties / Departments
Program graduates will be asked to provide ongoing contact information, and permission to poll them triennially for information about research publications and funding, faculty appointments, and supervision / mentoring / teaching of research / Physician trainees.

Collected data will be assessed at scheduled annual meetings of the Diploma Steering Committee to discuss Diploma program assessment.

12 Consultation

Expected impact on the nature and quality of other programs at U of T:
The Diploma program will require support for a new core course (MSC1992Y); access to relevant elective graduate courses, and faculty with graduate faculty membership to support and supervise students in MSC1991Y. The training offered will have clearly described objectives and a specified level of required scholarship. The MD Program and Physician-Scientist Training will be impacted by expanding the engagement in research of a select cohort of medical students, offering them another potential entrance pathway to longer-term subsequent training as physician-scientists. For our partner graduate units, IMS and LMP in the FOM and IHPME in the DLSPH, the proposed program will provide new ways for them to engage a highly talented group of students who may wish, at a later time, to undertake further training in their respective fields. The Diploma program will provide a vehicle for the McLaughlin Centre for Genomic Medicine to leverage the funds it distributes while investing in the training of potential future leaders in genomic medicine.

Consultation
Within the FOM, initial consultation about the proposal was undertaken with Dr. Allan Kaplan, the Vice-Dean of Graduate and Academic Affairs, and Dr. Patricia Houston, Vice-Dean of Undergraduate Medical Education (MD Program). After detailed consultation with the Director of the Institute of Medical Science (IMS) and the Chair of the IMS Curriculum Committee, circulation of a draft proposal and presentation to the IMS Leadership and Executive committees, IMS agreed to be the home graduate unit for the Diploma. The focus and leadership of the IMS in translational medicine, with a strong emphasis on bench-to-bedside clinical applications and on physician-scientist training, make this a highly suitable arrangement. The Director (S. Scherer) of the McLaughlin Centre reviewed the proposal favourably and confirmed the Centre's annual contribution of funding the Diploma's 50% contribution to the stipend of 5 Diploma students. There has been extensive consultation with the Office of Graduate and Life Sciences, FOM. Important support was received from the Interim Chair of Laboratory Medicine and Pathobiology (LMP), A. Gotlieb, who agreed to solicit and encourage contributions from LMP faculty to mentor, teach, and evaluate in the Diploma program's courses

(MSC1991Y and MSC1992Y). Memoranda of Understanding (MOUs) were signed establishing partnerships between the MD Program, Graduate Diploma in Health Research as well as Institute of Medical Science and the Department of Laboratory Medicine and Pathobiology.

In the DLSPH, we consulted with the Director of Clinical Epidemiology & Health Care Research (R. Fowler), the Associate Director and Graduate Coordinator (R. Cockerill) and the Director (A. Brown) of IHPME. After subsequent consultation between Professor Brown and DLSPH Dean H. Hu, they agreed in writing to support the Diploma by: facilitating access to appropriate IHPME half-courses as electives for a limited number of Diploma students; helping recruit faculty to be teachers / seminar leaders / markers for the new MSC 1992Y course; and supporting curriculum and high quality research experiences for Diploma students. Since the more recent changes in leadership at the DLSPH, their ongoing support was confirmed after additional consultations with the Interim Dean (Professor Brown), the Associate Dean, Academic Affairs (N. Baxter) and the Acting Director of IHPME (Professor Cockerill), in the letter in Appendix F.

The Course Director (D. Katzman) of the new Health Science Research (HSR) course, MD Program, FOM, has discussed coordination of the material in HSR and the Diploma to ensure complementarity and avoid redundancy. Ongoing coordination is facilitated by the Diploma Program Director sitting on the HSR course committee.

13 Resources

13.1 Faculty Complement

Adequacy of Number of Faculty

The faculty listed in Table 4 (*pages 21 and following*) will contribute to the Diploma by directly teaching (lecturing, leading seminars) and grading students in the *Research Skills for the Physician-Scientist course* (MSC1992Y), contributing to online modules and / or serving as Research Supervisors for the *Supervised Research Project* MSC1991Y. A few will serve on the Diploma Steering Committee.

Quality of Faculty

Supervisors in the new *Supervised Research Project* (MSC1991Y) course will be highly successful Scientists and Physician-Scientists from a wide range of disciplines covering the four pillars of health research described by the Canadian Institutes of Health Research (CIHR), the major federal funder of health research. All students will be exposed to excellent representatives of both of these groups of scientists through their interactions in the new *Research Skills for the Physician-Scientist* course (MSC1992Y). The faculty members of both courses will be characterized by their experience in teaching and supervising at the graduate level, which is one of the criteria for their selection.
The Diploma aims to engage medical students, concurrently beginning their clinical training, in health research. The critical role of role modeling and mentoring is met (as individual research supervisors and / or course instructors – evaluators) by scientists who are clinical faculty, with ongoing clinical activities. In this, the University of Toronto offers faculty with depth and breadth of expertise unparalleled in Canada, as reflected in current international rankings summarized in Section 14, Quality and Other Indicators, page 25. The leaders of MSC1992Y and the overall Diploma program are themselves physician – scientists, experienced leading in institutional / departmental physician – scientist training programs. They include members of the Steering Committee (V. Venkateswaran, R.

Fowler, C. Hawkins), the G.Dip.H.R. Program Director (N. Sweezey), with oversight by N Rosenblum (Associate Dean, Physician-Scientist Training, MD Program, FOM; winner of the Maureen Andrew Mentorship Award, Society for Pediatric Research; founder of the highly successful national CIHR STIHR program, the Canadian Child Health Clinician Scientist Program). The culture of clinical faculty involves lecturing / teaching a few hours each year, consistent with expectations around their responsibilities.

Table 4: Faculty Complement

Name	Unit of Primary Budgetary Appt (for tenure and tenure stream faculty) or department (for clinical faculty)	University Rank	Graduate Faculty Membership Status (e.g., Associate/ Full privileges)	Commitment to other programs (please list other programs in which the person routinely teaches / supervises)	Nature of contribution to this program Course Instructor (CI), Thesis Supervision (TS), Clinical or practice supervisor (C/PS).
Non-Tenure Stream Clinical Faculty					
Anne S. Bassett	Psychiatry, FOM	Full Professor	Medical Science, Full	Genetics, (MD Program, Genetic Counselling)	Research Project Supervision
Butler, Marcus Ortho	Medicine	Assistant Professor	Immunology, Full	Medical Oncology, UHN-PMH	Research Project Supervisor
Douglas O. Cheyne	Neurosciences & Mental Health, SickKids Research Institute	Full Professor	Medical Science, Full	Neuro-Imaging,	Research Project Supervision
Natalie Coburn	Surgery, FOM	Associate Professor	Health Policy, Management and Evaluation, Associate	Surgery, Clinical Epidemiology & Health Care Research (IHPME)	Research Project Supervision
Peter Cram	General Internal Medicine, FOM	Full Professor	Health Policy, Management and Evaluation, Associate	Internal Medicine	Research Project Supervision
Sunit Das	Surgery, FOM	Assistant Professor	Laboratory Medicine and	Neurosurgery, Medical Science	Research Project Supervision

Name	Unit of Primary Budgetary Appt (for tenure and tenure stream faculty) or department (for clinical faculty)	University Rank	Graduate Faculty Membership Status (e.g., Associate/ Full privileges)	Commitment to other programs (please list other programs in which the person routinely teaches / supervises)	Nature of contribution to this program Course Instructor (CI), Thesis Supervision (TS), Clinical or practice supervisor (C/PS).
			Pathobiology, Associate		
Charles Deber	Molecular Structure and Function, SickKids Research Institute	Full Professor	Biochemistry, Full	Biochemistry	Research Project Supervision
W. Brent Derry	Developmen-tal and Stem Cell Biology, SickKids Research Institute	Full Professor	Molecular Genetics, Full	Human Biology	Research Project Supervision
Michael Fehlings	Surgery, FOM	Full Professor	Medical Science, Full	Neurosurgery	Research Project Supervision
Robert Fowler	Internal Medicine and Critical Care, FOM	Associate Professor	Health Policy, Management and Evaluation, Full	Program Director, Health Policy, Management and Evaluation	Program Supervisory Committee
Anne-Marie Guerguerian	Paediatrics, FOM	Assistant Professor	Medical Science, Full	Biomaterials & Biomedical Engineering; Neuroscience and Mental Health, SickKids	CI
Meredith Irwin	Paediatrics, FOM	Full Professor	Medical Science, Full	Laboratory Medicine and Pathobiology, Medical Biophysics	Research Project Supervision
Marc Jeschke	Surgery, FOM	Full Professor	Immunology, Full	Plastic Surgery, Immunology	Research Project Supervision
Warren Lee	Medicine, FOM	Assistant Professor	Medical Science, Full	Laboratory Medicine and Pathobiology, Biochemistry	Research Project Supervision

Name	Unit of Primary Budgetary Appt (for tenure and tenure stream faculty) or department (for clinical faculty)	University Rank	Graduate Faculty Membership Status (e.g., Associate/ Full privileges)	Commitment to other programs (please list other programs in which the person routinely teaches / supervises)	Nature of contribution to this program Course Instructor (CI), Thesis Supervision (TS), Clinical or practice supervisor (C/PS).
Lorraine Lipscombe	Internal Medicine, FOM	Associate Professor	Health Policy, Management and Evaluation, Associate	School of Public Health	Research Project Supervision
Steven P. Miller	Paediatrics, FOM	Full Professor	Medical Science, Full	Medical Science	Research Project Supervision
Daniel Mueller	Psychiatry, FOM	Associate Professor	Medical Science, Full	Pharmacogenetics (MD Program), Medical Science	Research Project Supervision
Donald Redelmeier	Medicine, FOM	Full Professor	Medical Science, Full	Health Policy, Management and Evaluation	Research Project Supervision, CI
Norman Rosenblum	Paediatrics, FOM	Full Professor Associate Dean	Medical Science, Full	Physiology, Paediatrics, LMP, Physician-Scientist Training	Academic Oversight
James Rutka	Surgery, FOM	Professor and Chair	Laboratory Medicine and Pathobiology, Full	Neurosurgery, Medical Science	Research Project Supervision
Neil Sweezey	Paediatrics, FOM	Associate Professor	Physiology, Full	Medical Science	Diploma Program Director, MSC1992Y Course Director CI
Jack Ven Tu	Surgery, FOM	Full Professor	Medical Science, Full; Health Policy, Management and Evaluation, Full	Clinical Epidemiology and Health Care Research (IHPME)	Research Project Supervision
Catherine Walsh	Paediatrics, FOM	Assistant Professor	Medical Science, Associate	Wilson Centre for Research in Education; Clinical Epidemiology	CI

Name	Unit of Primary Budgetary Appt (for tenure and tenure stream faculty) or department (for clinical faculty)	University Rank	Graduate Faculty Membership Status (e.g., Associate/ Full privileges)	Commitment to other programs (please list other programs in which the person routinely teaches / supervises)	Nature of contribution to this program Course Instructor (CI), Thesis Supervision (TS), Clinical or practice supervisor (C/PS).
				and Health Care Research (IHPME)	
Elysa Widjaja	Medical Imaging	Associate Professor	Medical Science, Associate	Psychology; Neuroradiology, SickKids	Research Project Supervision
David Wiljer	Psychiatry, FOM	Associate Professor	Health Policy, Management and Evaluation, Associate	Medical Science	Research Project Supervision
Minna Woo	Internal Medicine	Full Professor	Medical Science, Full	Medicine, Medical Biophysics	Research Project Supervision
Tenure Stream:					
Anna Maria Reet Agur	Surgery, Faculty of Medicine (FOM)	Full Professor	Medical Science, Full	Gross Anatomy, Neuroanatomy, Anatomy (MD Program, Occupational and Physical Therapy)	Research Project Supervision

13.2 Learning Resources

Please see the following appendices:
Appendix C: Library statement confirming the adequacy of library holdings and support for student learning
Appendix D: Standard statement concerning student support services

13.3 Financial Support for Graduate Students

Each Diploma student will receive a stipend of $15,000 for the 20 month (5 consecutive terms) period. The amount of this stipend is consistent with the amount a student would be paid within the FOM for undertaking research outside of the regular curriculum for 6 months. The 50% of the stipend will be covered by the Diploma's existing resources and 50% by the resources of the research project supervisor, who will also be responsible for covering the expenses of the student's research project.

Norman Rosenblum, Associate Dean, Physician-Scientist Training, and Patricia Houston, Vice-Dean, MD Program, are committed for a minimum five year period to providing funds to cover the costs of the Diploma (*see letters, Appendix F, page 44 and following*). The funding situation is very stable, in that the administrative staff are paid directly by the FOM and the program's commitments of student funding support are based upon existing perpetuity endowments.

13.4 Space/Infrastructure

We anticipate 30 students enrolled across two academic years at steady state.

The primary space and infrastructure requirements (laboratories, equipment, information technology, study space, etc.) for the Supervised Research Project MSC1991Y will be provided by the individual research supervisors. Space and infrastructure support for the MSC1992Y course will be provided by existing facilities of the MD Program and Institute of Medical Science, FOM. No additional space is required.

The Diploma will be administered in partnership with the Physician-Scientist Training Program, FOM, and IMS, with oversight by the Diploma Program Director and the Diploma Steering Committee. IMS will be responsible for the registration of these students and will provide curricular support through the oversight of the IMS Curriculum Committee. The Diploma Program Director will be a member of the IMS Curriculum Committee and this should facilitate communication between the two parties.

As agreed with the Diploma program in their respective MOUs, the IMS and LMP will both assist with the recruitment of members of their faculties to serve as instructors, seminar leaders and graders of performance in the core IMS / Diploma course MSC1992. In addition, IMS will provide access to elective half-courses to Diploma students (see Appendix A, pages 27-36).

The infrastructure for the existing online material is supported by the budget of the Clinician-Investigator Program, Physician-Scientist Training, Faculty of Medicine.

14 Quality and Other Indicators

The Faculty of Medicine (FOM) of the University of Toronto is recognized as the leading research and training medical faculty in Canada, and among the best in the world. This is consistently reflected in world-wide rankings in Medicine and related fields from various sources. A selection of major recent rankings follows:

In the 2016 National Taiwan University Ranking of universities based on scientific paper performance in the area of Clinical Medicine, the University of Toronto again placed **third in the world**, behind only Harvard and Johns Hopkins universities. Within Canada, the next highest ranked universities (UBC, McGill and McMaster) had global rankings of 35, 37 and 51 respectively in this category.
http://nturanking.lis.ntu.edu.tw/DataPage/countries.aspx?query=ClinicalMedicine&country=Canada&y=2016

In the 2016 U.S. News & World Report ranking, U of T placed **seventh in the world** in Clinical Medicine. Within Canada, the next highest ranked universities (McGill, McMaster and UBC) had global rankings of 41, 44 and 47 respectively in this category.

https://www.usnews.com/education/best-global-universities/clinical-medicine

In the 2017 QS World University Rankings by Subject, the U of T Medical School ranked **11th in the world** (up from 12th in 2016). The other Canadian Universities in the top 50, McGill, UBC and McMaster, had global rankings of 22, 27 and 35 respectively in this category. https://www.topuniversities.com/university-rankings-articles/university-subject-rankings/top-medical-schools-2017

In 2017, *Times Higher Education* magazine named U of T the top university in Canada and **14th in the world** in Clinical, Pre-clinical and Health fields. https://www.timeshighereducation.com/world-university-rankings/university-of-toronto#ranking-dataset/595522

In 2017, the Shanghai Ranking's Global Ranking of Academic Subjects, the U of T was placed **16th in the world** in Clinical Medicine, **fifth in the world** in Public Health and **third in the world** in Medical Technology.
http://www.shanghairanking.com/Shanghairanking-Subject-Rankings/clinical-medicine.html

The FOM has an established culture of supporting Physician-Scientist Training, including through the MD/PhD and Clinician-Investigator programs, and the Comprehensive Research Experience for Medical Students (CREMS) suite of elective options. The Diploma program builds upon the success of the existing mentored Research Scholar option, with an established record since 2010 of superbly qualified SGS-appointed scientists and physician-scientists serving as the supervisors/mentors of the research projects conducted by the students taking this elective. Each year the FOM receives volunteer proposals of high-quality, faculty-generated research projects, in greater numbers than the numbers of students applying and more than the number of available positions. The Diploma program's diversity is enhanced by the wide range of areas of faculty strengths, innovation and scholarly record, including: Molecular biology, molecular structure and function, developmental biology, genomic medicine, medical genetics, endocrinology, clinical epidemiology, health economics, health education, health services research, international health, public health, laboratory medicine and pathology, neuroscience / neurosurgery, transplantation and immunity, cancer biology and therapy, critical care medicine, psychiatry. The student body of the MD program, FOM, from whom the students of the Diploma will be drawn, are highly accomplished representatives of a variety of backgrounds. The leaders of the new Diploma are physician – scientists with experience in leading successful U of T institutional or departmental clinician – scientist programs that have contributed to the training of physician-scientists currently appointed to faculties in North America and overseas.

15 Governance Process

Steps	Levels of Approval Required
Consultation with Provost	
Decanal and Provostial signoff	Sept 13, 2017
	Faculty/divisional governance (February 12, 2018)
Submission to Provost's office	
	AP&P
	Academic Board

	Executive Committee of Governing Council
The program may begin advertising as long as any material includes the clear statement that, "No offer of admissions will be made to the program pending final approval by the Quality Council and the Ministry of Advanced Education and Skills Development (where the latter is required)."	
	Ontario Quality Council
	Submitted to the Ministry (in case of new graduate degrees and programs, new diplomas)

Appendix A: Courses

All existing graduate level courses, unless specifically marked "New"

Summary of Elements of the New Course

MSC1992Y: Research Skills for the Physician-Scientist

Preparing for Research

0.25 FCE, 1 hr / wk X 13 wk, one session (Jan - April, Yr 1 of Medical School)
faculty seminars: bridging knowledge gaps; ethics; management; teamwork; leadership.
CIP module: grant writing
grading: presentations/answering questions
required: attendance/discussion participation

Special Topics in Health Research

0.25 FCE, 1 hr/ alternate wk X 26 wk over two sessions, MD yr 2
expert introduced seminars/modules
broad range of principals and techniques:
quantitative and qualitative techniques,
clinical and translational research,
basic biomedical / molecular / developmental / stem cell biology
required: student participation

Translational Research Topics

0.25 FCE; 1hr/wk; 13 wk during two summer sessions.
graded presentations: in own field / research question/ significance to human health;
problem solving: in a different field and / or with different methodologies (Pass / Fail)
critical review: paper from outside their field; (Pass / Fail)

Dissemination of Results

0.25 FCE, 1 hr/ alternate wk X 26 wk, two sessions, (Summer UME yr 2)
Graded: presentations of research project.
Graded: responding to critical questions
Seminars: how to speak to various target audiences

Elective Courses offered by the Institute for Health Policy, Management and Evaluation, Dalla Lana School of Public Health

Introduction to Clinical Epidemiology Research, HAD5301H
To introduce principles of epidemiology as applied to clinical research, emphasizing diagnosis, prognosis, treatment, the measurement of signs and symptoms of health and disease, and the evaluation of diagnostic, treatment and compliance-improving manoeuvres.

Introduction to Health Economics, HAD5744H
This course is designed to provide an introduction to econometric methods. That is, the basic principles of regression model development and testing that underlie much of applied health economics and health services research. The starting point is the fact that a great number of possible data generating processes yield very similar looking data series. The course deals with how to determine which data generating process, from among the range of possible ones, has actually generated the data you are working with. To that end, the course deals with application of statistical tests and procedures in the context of distinguishing between potential regression models. Students will learn about important methodological considerations when working with both survey and administrative datasets. It is assumed that students have a basic training in statistics.

Introduction to Health Services Research Theory, HAD6760H
The field of health services research draws upon theories, research designs and methods from a wide variety of disciplines including social and behavioural sciences, clinical sciences, management and administrative sciences, law, epidemiology and biostatistics. The goal of this course is to provide a forum for doctoral students to explore theoretical/conceptual frameworks, study designs and research methods, and to apply them in the preparation of a health services research project.

Introduction to Big Data in Health Research, MHI3000H
Introduction to Big Data for Health is a new elective course intended to introduce students to the many types of data and analytical methods now available that will enhance our ability to investigate and explain the health of communities. These include data that are relevant to measurement of the social economic and genetic determinants of health, the quality and outcomes of healthcare programs and healthcare interventions. The quantity and variety of relevant data have increased substantially in the last decade and now include data from: healthcare administration, electronic medical records, diagnostic laboratories, censuses, vital statistics, environmental exposures, disease and device registries, research data-bases and bio-repositories. To this may be added relevant information extracted from social services, taxation records, education, justice and corrections services. This is a rapidly changing field. The aims of the course are to introduce students to the different types of data, to provide an overview of the different analytical approaches and to assess the potential value of these big data-sets by examining a number of examples of their use.

Elective Courses offered by the Institute of Medical Science, FOM

Studies in Schizophrenia, MSC1081H

This course, consisting of a series of readings, seminars, and a term paper, is intended to provide an in-depth and multidimensional understanding of schizophrenia spectrum disorders. Readings and seminars will include both foundational perspectives and recent advances in knowledge, bringing together the complexity of specialized knowledge that is required to carry out good research in the area of schizophrenia.

Topics included are:
- Introduction to course. What is Schizophrenia?
- Signs and symptoms
- Prodrome and First episode Schizophrenia. Early detection

Sociocultural aspects and vulnerable populations
Neuropsychology
Genetics
Neuroimaging
Neurophysiology
Pharmacotherapeutics
Animal models
Research Ethics
Overview and feedback

Neuroimaging methods using MRI, MSC1087H

Over the last two decades, the study of human brain structure and function has come to rely on the latest developments in medical imaging technology, especially magnetic resonance imaging (MRI). This course will provide fundamental knowledge relating to the neuroimaging methods commonly used to estimate spatially resolved maps of brain structure, such as grey matter volume and white matter connectivity. The rest of the course will focus on techniques used in functional MRI (fMRI) to measure the blood flow changes associated with neuronal activity. The course is primarily intended for students who will use neuroimaging techniques in their own thesis projects, and need to have a solid understanding of the physical and mathematical principles behind these tools in order to acquire good data and analyze them appropriately. Relevant physiology of cerebral blood flow and brain metabolism will also be reviewed. The specific statistical considerations for neuroimaging – in particular whether the average spatial maps of some structural or functional measure differ significantly between a patient group and a control group – have resulted in the new field of statistical parametric mapping, which will be covered in depth.

Brain Positron Emission Tomography, MSC1088H

Positron emission tomography (PET) has become an important tool for the early detection of disease, the understanding of basic molecular aspects of brain function and the evaluation of medical treatment. This course will build on a multidisciplinary team involving chemists, physicists, image scientists, computer scientists and clinician scientists currently investigating brain diseases such as schizophrenia, mood disorders, addictions, geriatrics and movement disorders.
The principal objectives of this course are to review the fundamental concepts of PET imaging and to convey an understanding of the opportunities that PET technology offers in brain research and drug development. Specific issues will be addressed in a perspective to answer basic research questions:
1) The chemistry of labelling compounds with short-lived positron-emitting radionuclides; 2) The design of PET radiopharmaceuticals – impact on interpretation of scanning data (e.g. position of labelling, metabolism, drugs vs. ligands); 3) PET instrumentation – how does a PET scanner or a cyclotron work (physics)?; 4) How PET data is analysed (kinetic modelling, image analysis); How PET can be used as a tool in brain research and drug development.

Biopsychosocial basis of mental health and addictive disorders, MSC1089H

Prof. George and colleagues will review the biopsychosocial basis of mental health and addictive disorders from the perspectives of etiology, pathophysiology, clinical phenomenology and diagnostics, genetics, neuroimaging, and treatment which have all contributed to our increasing understanding of psychiatric and substance use disorders from a biomedical (“disease”) concept. The role of stigma and

recovery would also be discussed from a bio-behavioural and social determinants of health perspective, to produce an integrated perspective on mental health and addictive disorders. The contemporary approach to treatment of these disorders would also be discussed which emphasizes biological, psychological and social policy and prevention perspectives.

Elective Courses offered by Laboratory Medicine and Pathobiology, FOM

Cellular Imaging in Pathobiology, LMP1006H

This course explores the powerful intersection of Physics, Biological science, and Imaging technologies. Basic principles of optics such as the nature of light, diffraction, refraction, the nature of lenses, and the design of the light microscope will be covered in this course. We will discuss phase contrast, dark field, interference contrast, and modulation contrast, as well as polarization and fluorescence microscopy. Different types of microscopes and imaging technologies and their use in biological sciences including dissecting, compound, scanning and transmission electron microscopes, positron emission tomography, single photon emission computed tomography, nuclear magnetic resonance imaging, ultrasound, optical imaging, stereology and 3D imaging, optical microscopy, nanoscopy, live cell and whole animal imaging techniques, cytogenetics, X-ray crystallography and imaging in forensic science and their use in diagnostic pathology will be discussed. Some of the lectures will be complemented by laboratory sessions demonstrating these systems. As a result, students will have the opportunity for hands-on experience with state-of-the-art optical, electronic, and digital imaging equipment guided by an experienced staff from the University, hospitals, research facilities, government agencies as well as the industry. This course will focus on the theory, application and implementation of different imaging techniques, and more importantly, on application of biological experimentation relevant to modern biological research or clinical biochemical studies and the common real-life research goal in the industry, hospitals and research laboratories.

Tissue Injury, Repair and Regeneration, LMP1017H

This seminar/reading and conference course is an interactive course designed to provide graduate students a basic understanding of tissue injury, repair and regeneration processes in major body tissues. Each week, we will invite leading guest speakers to present a seminar on their respective field of research related to tissue injury, repair and regeneration. The Invited Speaker will present a seminar on his/her research for one hour. During the next hour, students present and discuss a particular paper from the one to two papers that are chosen by the guest speaker on his/her topic. This will include a 15 minute presentation by one selected student followed by a 45 minute discussion/question period under the guidance of the mentor (guest speaker).
A total of two hours will be dedicated to each session, which will include the seminar by the Guest Speaker and student presentation/questions/discussion session, so the course is 26-hours over 13 weeks. The first class on September 5th will be an introductory session where students will choose one paper for the presentation and a different one for the dissertation.
Format: Weekly lectures, student presentations, and discussion.

Prerequisite: None.

Research Techniques in Molecular Biology and Pathology, LMP1019H

Course Format: Weekly 2-hour lectures from experts in the field.
Prerequisite: Students are assumed to have a basic knowledge of molecular biology. For those students not familiar with molecular biology techniques LMP1510 would be a useful prerequisite.

Curriculum: This course focuses on techniques that are used in the diagnosis, discovery of the genetic basis, and treatment of human disease.

Inflammation, Immunity and Immunopathology of Atherosclerosis, LMP1020H

Course Objective: To understand the role of humoral, cellular and molecular mechanisms of innate and adaptive immunity in the pathogenesis of atherosclerosis.
Atherosclerosis is a chronic inflammatory disease characterized by the accumulation of lesions or plaques in the intima of muscular elastic arteries. Worldwide, atherosclerosis is a leading cause of death due to the development of myocardial infarction and stroke at advanced stages of the disease. This course will focus on the role of the immune system in atherosclerosis with special attention on different types of immune cells and endothelial cells. The relationship between hypercholesterolemia, a major risk factor for atherosclerosis, and inflammation will be explored.
Several themes will be studied in detail. Each theme will be introduced by a lecture, followed by student-led presentations of several related papers and general discussion. All students are expected to read the papers prior to class.
Themes for LMP1020H:

- The fertile soil for atherosclerotic lesion formation.
- Monocyte and macrophage dynamics in atherosclerotic lesions.
- The inflammasome: friend, foe or bystander.
- Adaptive immunity and atherosclerosis.
- Cellular and humoral anti-inflammatory mechanisms.
- Dendritic cells, what are they and how and where do they modulate atherogenesis?

Signal Transduction Pathways in Normal and Diseased Tissues, LMP1503H

Curriculum: Role of Glycolipids in Signal Transduction Pathways

- Receptor Pathogenesis
- Endotoxin Signaling
- Evolution of Signal Transduction
- Growth Factor receptor signaling in cancer
- Lymphocyte signaling and immune deficiencies
- Lysosomal Signaling
- Regulation of gene expression

- Signal transduction via cell adhesion receptors
- Cytokines and Signal Transduction

Course Format: 10 two-hour sessions

Cell and Molecular Biology of Cardiovascular Diseases, LMP1504H

Course Objective: The objective is to discover, understand, and communicate current concepts in the pathogenesis of cardiac and vascular disease. Extensive use of the current literature will be required.
Course Format: The format will be problem based learning. Each student will be required to make presentations of current literature to the student group. Students then will be required to participate in a discussion of material presented by their peers.
Curriculum: Some topics that will be considered include the use of in vivo and in vitro models to study pathogenesis; the influence of stem cell research on cardiovascular disease; and the cell and molecular biology of the atherosclerosis, ischemic heart disease, and cardiomyopathy.
Prerequisite: This is an advanced pathobiology course. The course requires knowledge about basic concepts in molecular biology and disease pathogenesis. Thus the starting point is a thorough knowledge of cardiovascular pathology as described in Robbins and Cotran Pathological Basis of Disease, V Kumar et al (2004) or Rubin's Pathology, E Rubin et al (2004).

Analytical Clinical Biochemistry: Basic Principles, LMP1505H

Curriculum: Topics covered include spectroscopy, enzymology, separation methods, immunochemistry, electrochemistry, instrumental methods of analysis and a variety of other analytical techniques that are commonly used in clinical laboratories.
Evaluation: Evaluation of student performance is based on a final written examination.
Remarks: The course will be run as tutorials for clinical and medical biochemistry residents, and graduate students.

Molecular Biology Techniques, LMP1510H

Course Format: Lecture
Prerequisite: None
Curriculum: An introduction of molecular techniques used in Laboratory Medicine and Pathobiology
Evaluation: Course mark will be based on a mid-term exam (30%), a Final exam (40%), and a written paper (30%).

The Role of Genomics in the Era of Personalized Medicine, LMP1525H

Course Description: The idea of this course stems from the necessity for our graduate students to get a grasp of the new advances in technology, especially those related to the concept of informatics and the role of molecular profiling and high throughput data generation and analysis. A unique role of the Department of Laboratory Medicine and Pathobiology is to bridge the gap between basic and translational sciences. An important objective of this course is to

explore how understanding the pathobiology of disease can be translated to answer clinically meaningful questions. This course will also highlight the important role of biobanking in biomarker discovery, which are of core importance to our department.
Format: Didactic lectures: weekly lectures (one and a half hours each)
Student participation: half an hour per week including presentation and critical appraisal of an article. A selection of articles will be available for students to choose from.
Writing a research proposal: 5-7 pages maximum, on a topic related to the subject of the course, but distinct from the scope of the student's thesis.
Prerequisite: There are no prerequisite to enrol in this course; however, a strong background knowledge in cellular/molecular biology is expected (e.g. LMP1510 or equivalent).

Next Generation Genomics in Clinical Medicine, LMP1530H.

Course Objective: Next generation genomics, especially whole genome sequencing, will facilitate the application of genomics in clinical practice at a grand scale. Despite the fact that there are already many individual molecular tests which are currently looking at genomic alterations in individual, or a few genes (known as molecular diagnostics), there is still no widespread clinical applicability of next generation genomics, such as whole genome sequencing.
This course will teach how our recently acquired ability to sequence nucleic acids rapidly and cost-effectively can become a very powerful test in the clinical setting for diverse applications and diseases. This new technology has the capacity not only to delineate the molecular basis of diverse diseases with a genetic component but also to assist in defining predisposition, for early detection, monitoring, selection of therapy, prenatal diagnosis, etc. This technology will also raise many ethical questions which will be addressed in this course.
Course Format: Lectures and student presentations

Proteomics, Mass Spectrometry and their Clinical Applications, LMP1535H
This course will cover the fundamentals of mass spectrometry and its use with biochemical techniques to provide analyses of proteins and small molecules. The interface with bioinformatics and other -omics technologies will be examined. The second half of the course is designed to bridge the gap between basic and translational sciences and will examine the research and clinical applications of mass spectrometry.

Selected Topics in Cellular Microbiology, LMP2115H

Course Objective: The objective of this course is to study how microbial pathogens interact with their mammalian hosts to cause disease.
Course Format: Weekly classes will consist of lectures and student presentations of research papers.
Prerequisite: Although there no specific prerequisites, students should have a good background in molecular biology.

Curriculum: The course is designed to span the fields of microbiology and cell biology to address how pathogens evade and exploit mammalian systems. The topics will include bacterial adherence to cells; host cell invasion; intracellular survival of pathogens; protein toxins; modulation of host cell function by microbes; and microbial evasion of host defences.

Molecular Clinical Microbiology & Infectious Diseases, LMP2120H

Course Objective: With particular emphasis on new laboratory techniques, the goal of this course is to provide students with the scientific basis for how these techniques help us understand the epidemiology of infectious diseases, their current impact on human medicine and their role in the detection and characterization of etiologic agents causing diseases.
The major course objectives are:

- To learn the common microorganisms associated with specific clinical diseases.
- To understand how genomics and proteomics have been applied to the diagnosis, control and management of infectious diseases.
- To provide knowledge of both practical and theoretical aspects of the specialist area of medical microbiology and the necessary skills to undertake individual and collaborative research in this field.
- To be introduced to recently developed and constantly improving techniques such as new generation sequencing and high resolution proteomics and how they can impact our understanding and control of important infectious diseases.

Curriculum: Molecular Clinical Microbiology & Infectious Diseases is a course that provides an introduction to medical bacteriology, virology, mycology and parasitology. The course consists of lectures from specialists in each topic, and discussions on selected papers. Students should be familiarized with concepts pertaining to basic molecular biology principles and techniques for understanding various contemporary areas of research in clinical microbiology and their applications. This programme covers these areas, together with training in research skills.
Prerequisite: A background in infectious diseases, microbiology and molecular biology is expected.

Neurodegenerative Disease - Mechanisms, Models, and Methods, LMP2222H

Course Syllabus, September 2016
The course will first be offered in the 2016/17 academic year and will run for 14 weeks in the Medical Science building (Room MS 3287). It aims to prepare students for research in neurodegenerative diseases and enhance their knowledge about disease mechanisms, models and methods, including strategies for treatment and diagnosis.
The course will be coordinated by Joel Watts (Dept. of Biochemistry) and Gerold Schmitt-Ulms (Dept. of LMP), who will teach two lectures each and will also jointly give the first and last lectures of the course. Eight guest lecturers will teach one session each.
In preparation of the course, a research theme will be selected by each of the two course coordinators and publishing houses (preference will be given to open source, non-profit publishers) will be contacted to solicit interest for hosting two review articles, which will be assembled by course participants.

Week 1: First hour: course description and introduction of research topics for review articles, as well as instructions on how to write a review article (emphasizing science and publication ethics, plagiarism, post-publication review). Second hour: break-up into two groups to discuss and develop suitable outlines for the two review articles and to assign sections to the students.
Weeks 2-5: Lectures on Alzheimer's disease, tauopathies and prion diseases in the clinic, neuroanatomy, neuropathology and disease mechanisms.
Weeks 6-7: Lectures on big data and "-omics" approaches for studying neurodegenerative diseases (genetics and genomics, CRISPR and cell models, proteomics and systems biology)
Weeks 8-9: Lectures on emerging methods for studying neurodegenerative diseases (animal models, propagated protein misfolding, structural studies, biophysics of protein aggregation)
Weeks 10-13: Lectures on brain repair/stem cells, diagnostics and therapies and clinical trials
Week 14: Course attendees will be split into two groups, presentations and discussions moderated by course coordinators will finalize the skeletons for the two review papers.
List of lectures: (note that the order might change according to availability of speakers)
Neuroanatomy, neuropathology and disease mechanisms
2. AD and prion diseases in the clinic (Carmela Tartaglia)
3. Brain anatomy, neuropathology and cellular neurotoxicity (Speaker TBD)
4. Alzheimer's disease/tauopathies (Gerold Schmitt-Ulms)
5. Prion diseases (Joel Watts)
Omics-based discovery approaches:
6. Genetics/genomics (Ekaterina Rogaeva)
7. CRISPR cell models, proteomics and systems biology (Gerold Schmitt-Ulms)
Protein aggregation and structure:
8. Animal models/propagated protein misfolding (Joel Watts)
9. Structural studies/biophysics of protein aggregation (Simon Sharpe)
Stem cells and repair, diagnosis, clinical trials and therapeutics:
10. Stem cells and regenerative medicine (Derek van der Kooy)
11. Diagnostics (Avi Chakrabartty)
12. Clinical trials (JoAnne McLaurin)
13. Therapies (Barry Greenberg)
Student evaluation:
1. Each student will research information pertinent to a section of one of the two review articles that will be assembled by course participants and will organize this information as a written skeleton and by producing one illustration (which might become a figure in the review article). Note that this component of the mark is to be completed at midterm and will be shared with two other students who will be asked to critique it in writing and during the oral presentation – see below (20%).
2. Students will present (10-15 min) the review article section and illustration they produced to other course participants (20%).
3. Written (1 page) and oral critique of the skeleton (10%) and presentation of another student (10%).
4. Assembly of contribution to final review article within one week of presentation (40%).
With regard to the scope of the review articles, the objective is not to generate monumental reviews but to teach students skills pertinent to writing a concise high quality review. As such,

we will emphasize manuscript organization, scientific scholarship, style of writing, and overall presentation. Participating students will be made aware that only a subset of the most informative illustrations proposed can find their way into the article. Because students will have different levels of expertise in the assembly of manuscripts, the marking of student contributions will not be foremost on the style of writing but on scientific scholarship (i.e., the balance and selection of references, the clarity of scientific thought, the organization of their written section, and the quality of the illustration). The order of the author lists on the review manuscripts will be determined randomly (by draw) and a note will be included in the manuscripts stating that all authors contributed equally to its preparation.
All students will participate in rounds of editing and revisions of the review manuscript they contributed to but these steps will occur following the formal completion of the 14-week course.

Appendix B: Graduate Calendar Copy

Program Description

The Graduate Diploma in Health Research provides a select group of medical students high quality training in health research in order to understand, interpret and apply the rapid changes in the scientific underpinnings of health care. Future physicians will gain skills relevant to contributing to health-related studies in their future careers; some of whom will become leaders of health research. Taken concurrently with the MD program, the Graduate Diploma in Health Research aims to engage medical students in health research with the intent to develop applicable knowledge and skills that will inform and support a future career in any field of health research.

Minimum Admission Requirements

Diploma students must meet the School of Graduate Studies minimum admission requirements for master's level diploma programs. Applicants must be enrolled, and in good academic standing, in the first year of the MD Program of the Faculty of Medicine of the University of Toronto

Applicants must submit the following:

- Curriculum Vitae
- a personal statement explaining their interest in the Program
- a description of a research project they are interested in
- written confirmation of Good Standing in the MD Program (letter from the program, signed by the Registrar/Vice-Dean)
- undergraduate and/or graduate academic transcripts

Program Requirements

- A total of 2.5 FCEs:
  - Two required courses (2.0 FCEs):
    - Supervised Research Project (MSC 1991Y)
    - Research Skills for the Physician-Scientist (MSC 1992Y).
  - 0.5 FCE elective course selected from an approved list (Appendix A). Substitution of any other graduate-level course relevant to the student's research course but not found on the approved list will require completion of a course exemption form signed by the IMS Graduate Coordinator and the selection of the course will be done in consultation with the Program Director.
- Maintain good academic standing in the MD program throughout

Program Length

5 sessions part-time (registration sequence: W/S/F/W/S)

Time Limit

8 sessions part-time

Appendix C: Library Statement

University of Toronto Libraries Report for the Graduate Diploma in Health Research, Faculty of Medicine, January 2017

Context: The University of Toronto Library (UTL) system is the largest academic library in Canada and is currently ranked 4th among academic research libraries in North America, behind Harvard, Yale and Columbia.[1] The UTL has an annual acquisition budget of $31 million. Its research and special collections comprise over 12 million print volumes, 5.6 million microforms, over 17,000 journal subscriptions, and rich collections of manuscripts, films and cartographic materials. The system provides access to more than 1.9 million electronic books, journals and primary source materials.[2] Numerous, wide-ranging collections, facilities and staff expertise reflect the breadth of research and instructional programs at the University, and attract unique donations of books and manuscripts from around the world, which in turn draw scholars for research and graduate work.

Major North American Research Libraries[3]

	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
ARL RANK	**UNIVERSITY**	**UNIVERSITY**	**UNIVERSITY**	**UNIVERSITY**	**UNIVERSITY**
1	Harvard	Harvard	Harvard	Harvard	Harvard
2	Yale	Yale	Yale	Yale	Yale
3	**Toronto (3rd)**	**Toronto (3rd)**	**Toronto (3rd)**	**Toronto (3rd)**	Columbia
4	Michigan	Columbia	Columbia	Columbia	Toronto (4th)
5	Columbia	Michigan	Michigan	Michigan	Michigan

Top 5 Canadian Universities in the ARL Ranking of Major North American Research Libraries

	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
	RANK/ UNIVERSITY	**RANK/ UNIVERSITY**	**RANK/ UNIVERSITY**	**RANK/ UNIVERSITY**	**RANK/ UNIVERSITY**

[1] Chronicle of Higher Education, "Library Investment Index at University Research Libraries, 2014 – 2015." In the Almanac of Higher Education, 2016. http://www.chronicle.com/interactives/almanac-2016?cid=cp51#id=65_416

[2] Figures as of 2015 taken from UTL's 2016 Annual Report. http://www.library.utoronto.ca/library/aboutlibraries/annualreport/2016/AnnualReportUTL2016.pdf

[3] Association of Research Libraries Statistics, 2014-15 http://www.arlstatistics.org/analytics

	3/Toronto	**3/Toronto**	**3/Toronto**	**3/Toronto**	**4/Toronto**
	11/Alberta	10/British Columbia	18/Alberta	22/British Columbia	27/Alberta
	16/British Columbia	15/Alberta	24/British Columbia	26/Alberta	31/British Columbia
	32/Montreal	18/McGill	30/McGill	35/McGill	43/McGill
	38/McGill	32/Montreal	35/Montreal	36/Montreal	49/Calgary

Space and Access Services: The UTL's 44 libraries are divided into four administrative groups: Central, Departmental/local, Campus (UTM and UTSC) and Federated and Affiliated College Libraries. The UTL provides a variety of individual and group study spaces for students. Study space and computer facilities are available twenty four hours, five days per week at one location, Robarts Library, with additional extended hours during study and exam periods at both UTSC and UTM. Web-based services and electronic materials are accessible at all times from campus or remote locations.

Teaching, Learning and Research Support: Libraries play an important role in the linking of teaching and research in the University. To this end, information literacy instruction will be offered to assist in meeting Health Research degree level expectations in the ability to gather, evaluate and interpret information. Librarians will collaborate with instructors on assignment design, provide student research consultations, and offer just-in-time student research help in person, by phone or through online chat. Special initiatives, such as an annual forum for student journal editors, extend information literacy beyond the classroom. These services align with the Association of College and Research Libraries (ACRL) Framework for Information Literacy for Higher Education.[4]

Program Specific Instructional Support: Instruction occurs at a variety of levels for Health Research students and is provided by the faculty liaison librarian for Graduate Medicine. The Gerstein Library facilitates formal instruction integrated into class schedules and hands-on tutorials related to course assignments. As this program is still in development, the Library does not yet provide any formal instruction. The liaison librarian has agreed to support the Health Research Program in principle and will work with the program administration to form a concrete plan in the coming months. In the past, the Library has supported Health Research students on an individual basis, expanding on the information literacy instruction they have received as part of the MD Program. The Library, through its liaison librarians, customizes feeds of library resources which appear prominently in Portal/Blackboard course pages. The Gerstein Library has created and updates the following research guides: Medicine, Clinical EBM, Systematic Reviews, Pharmacy, Public Health, Rehabilitation and others that support interdisciplinary health research. Example: http://guides.library.utoronto.ca/medicine

Collections: Selected college and campus libraries collect materials in support of Health Research; the largest collection of materials is centrally located in the Gerstein Science Information Centre. Collections are purchased in all formats to meet the variety of preferences and styles of our current students and faculty. The University of Toronto Library is committed to collecting both print and electronic materials in support of Health Research at the University of Toronto.

[4] Association of College & Research Libraries. Framework for Information Literacy for Higher Education. ACRL, 2016. http://www.ala.org/acrl/sites/ala.org.acrl/files/content/issues/infolit/Framework_ILHE.pdf

Journals: The Library subscribes to 24 of the top 25 journals listed in Journal Citation Reports (JCR)5 in subject area Medicine, Research and Experimental. Of these titles, all are available electronically to staff and students of the University. We prioritize acquisition of online journals where possible.

Monographs: The UTL maintains comprehensive book approval plans with 51 book vendors worldwide. These plans ensure that the Library receives academic monographs from publishers all over the world in an efficient manner. In support of Health Research programs, monographs are purchased in electronic form where possible, and the Library currently receives all current e-books directly from the following publishers: Springer, Elsevier, Books@Ovid, Wiley-Blackwell, Royal Society of Chemistry and Cambridge.

Preservation, Digitization and Open Access: The UTL supports open access to scholarly communication and research information through its institutional research repository (known as T-Space), its Downsview print repository, its open journal services, subscriptions to open access publications, and support for preservation of research materials in all formats. In addition to acquiring materials in support of Health Research, the Library has digitized its monograph holdings published before 1923. These books are available without charge to any Internet user.

Key Databases: *Medline (Ovid), Embase, CINAHL, PsycINFO, Web of Science* and *Scopus*.
Prepared by: Gail Nichol, Selector for Life and Health Sciences, January 4, 2017
Submitted by: Larry Alford, Chief Librarian, University of Toronto Libraries, Date

[5] 2015 Journal Citation Reports® (Thomson Reuters, 2016)

Appendix D: Student Support Services

Student service information for Quality Assurance Framework [St. George Campus]

All University of Toronto undergraduate and graduate students have access to student services on all three campuses, Mississauga, St. George (downtown Toronto), and Scarborough, regardless of their 'home campus'. The services and co-curricular educational opportunities provide a complement to the formal curriculum by engaging and challenging students to reach their full potential as learners, leaders and citizens. At the University of Toronto (St. George Campus) these services are organized by Student Life Programs and Services, the academic division registrar offices, and the School of Graduate Studies, and support the success of our students from the time they are admitted through degree completion and beyond.

Students have access to comprehensive physical and mental health care on campus including a medical clinic, travel medicine services, immunization, contraception and sexual health education. Counselling and treatment options for psychological and emotional concerns include psychotherapy, group therapy and pharmacotherapy, as well as specialized assault counseling services. Detailed information can be accessed through: https://www.studentlife.utoronto.ca/hwc/services-offered
The Office of Health Professions Student Affairs (OHPSA) supports MD students and helps them with career counselling, career exploration, personal counselling & student wellness, academic coaching & prep, getting involved & co-curricular activities and summer mentorship programs. Detailed information can be accessed through:

http://www.md.utoronto.ca/OHPSA
Since all Diploma students will also be full time MD students, they will already have full access to all of the OHPSA services (which is where they would probably go in the first instance unless a graduate support service is required).

Housing needs, including off-campus housing listings and resources for students living independently, are met through the Student Housing Service.
Coaching and education in the development of key **learning skills** – from time management to overcoming exam anxiety – is provided through the Academic Success Centre. The ASC also partners with faculty to integrate success strategies and support into the curriculum.
Students' career exploration and employment services are provided through a **Career Centre** offering resume and interview coaching, workshops, career resources, on and off-campus employment and volunteer listings, job shadowing, and career counseling.

Specialized services are provided for **international students** (orientation, advising, cross-cultural counselling), students with **disabilities** (academic accommodations, advising), students with **children or other family responsibilities** (advising, resources, subsidized child care), **aboriginal students** (academic support, financial counselling) and **lesbian, gay, bisexual and transgender** students (counselling, referrals, equity outreach and engagement).

Participation in **campus life** and **experiential learning** are facilitated through Hart House (clubs, committees, events), the Centre for Community Partnerships (service learning), the Multifaith Centre (interfaith dialogue, events), and the Office of Student Life (leadership development, orientation,

recognition and support for student groups, activities.) **Sport and recreational facilities and programs** are provided to all students through both Hart House and the Faculty of Kinesiology and Physical Education.

School of Graduate Studies, Student Services [all campuses]

All graduate students at the University of Toronto have access to registrarial services and co-curricular programs at the School of Graduate Studies that assist students in meeting their academic goals. Administrative staff at the School of Graduate Studies (SGS) provide registrarial services to graduate students including but not limited to recruitment, admission, orientation, registration, fees, program progress, awards/financial assistance and graduation.

The **Grad Room** is an accessible space on the St. George campus which provides University of Toronto graduate students with a lounge area and a multi-purpose space for academic, social and professional graduate student programming. Grad Room is home to the **Graduate Professional Skills Program** (GPS). GPS is a non-academic program presented by SGS consisting of a variety of offerings that provide doctoral stream students a range of opportunities for professional skills development. The program focuses on skills beyond those conventionally learned within a disciplinary program, skills that may be critical to success in the wide range of careers that graduates enter, both within and outside academe. GPS aims to help students communicate effectively, plan and manage their time, be entrepreneurial, understand and apply ethical practices, and work effectively in teams and as leaders.

Appendix E: Canadian Comparators

Research training, leading to credential or note on academic transcript, for undergraduate medical students who already hold Bachelor's degrees.
PT = part-time; FT (E) = full-time (equivalent)

Not including MD/PhD training programs

University	**Level of Training**	**Credential**	**Months of Research Training**	**Concurrent with MD**	**Number of students per yr**	**Completion of MD delayed**
Alberta	Under-graduate	Notation on MD *"With Special Training in Research"*	6 FT	Yes	Variable	No
Manitoba	Under-graduate	BScMed	7 FT (two summers)	No	~ 50 - 60	No
Toronto (GDipHR)	**Graduate**	**Diploma**	**20 PT**	**Yes**	**15**	**No**
Manitoba	Graduate	MSc	24 FT (intervening 2 years off MD)	No	Variable	Yes - 2 yr
Queen's	Graduate	MSc	18 FT (intervening year off MD)	No	Variable	Yes - 1 yr
Montréal	Graduate	MSc	15 FT (intervening year off MD)	Yes (course work) / No (research)	Variable	Yes - 1 yr
Sherbrooke	Graduate	MSc	12+ FT (intervening year off MD)	No	Variable	Yes - 1+ yr
Calgary	Graduate	MSc	12+ FT (intervening year off MD)	No (not standard)	Variable	Yes - 1+ yr
Laval	Graduate	MSc	12+ FTE	Yes	Variable	Varies - 1+ yr

Appendix F: Letters

Letter from Associate Dean, Physician-Scientist Training Program, FOM
See attached PDF

Letter from Vice-Dean, MD Program, FOM
See attached PDF

Letter from Director, McLaughlin Centre, FOM
The McLaughlin Centre, an Extra-Departmental Unit (EDU):C unit, that supports excellence in genomics research and education. For more information, see
http://www.mclaughlin.utoronto.ca/Director_s_Message.htm

See attached PDF

Letter from Dalla Lana School of Public Health
See attached PDF

THE HOSPITAL FOR SICK CHILDREN

Paediatric Nephrologist
Senior Scientist, Research Institute

Norman D. Rosenblum MD, FRCP(C)

UNIVERSITY OF TORONTO
FACULTY OF MEDICINE

Professor of Paediatrics
Canada Research Chair in Developmental Nephrology
Associate Dean, Physician Scientist Training

July 31, 2017.

Neil Sweezey, MD, FRCPC
Director, CREMS Programs,
MD Program, Faculty of Medicine
University of Toronto

Dear Neil:

I hereby confirm the commitment of the Physician-Scientist Training portfolio, Faculty of Medicine, University of Toronto, to cover the costs of the new *Graduate Diploma in Health Research* for at least the first five years.

We will cover costs that include the program's leadership and main administrative costs, and a 50% contribution to the students' stipends. We will cover administrative expenses for the Institute of Medical Science (IMS, our partner graduate unit in the Faculty of Medicine) related to registration as graduate students in the School of Graduate Studies (SGS).

The individual faculty supervisors of the students' research project will pay 50% of the student stipend as well as all costs of the conduct of the students' research and of the dissemination of the results.

Sufficient funds to cover the necessary expenses will come from Physician-Scientist Training endowment income and advancement sources, as well as new advancement income. As documented in letters or in Memoranda of Understanding, the Program's 50% contribution to the students' stipends will be provided for up to 12 students each year collectively by the McLaughlin Centre of the University of Toronto (5 students) and our partner units, the Department of Laboratory Medicine and Pathology (2 students) and the IMS (3 students) in the Faculty of Medicine, and the Institute of Health Policy, Management and Evaluation in the School of Public Health (2 students).

Sincerely,

Norman Rosenblum

Norman Rosenblum, MD, FRCPC
Associate Dean, Physician - Scientist Training
Faculty of Medicine, University of Toronto.

MD Program
UNIVERSITY OF TORONTO

Office of the Vice Dean

July 31, 2017

Neil Sweezey, MD, FRCPC
Director, CREMS Programs,
MD Program, Faculty of Medicine
University of Toronto

Dear Neil:

I write in support of the proposal by the Comprehensive Research Experience for Medical Students (CREMS) / MD Program, to establish an optional *Graduate Diploma in Health Research* (G.Dip.H.R.) for medical students.

The MD Program hereby commits that the costs of this new Diploma Program will be covered for at least the first five years. As outlined by the Associate Dean of Physician-Scientist Training in his letter to you, these costs will include the program's leadership and main administrative costs and a 50% contribution to the students' stipends. The faculty supervisor of each individual research project will pay for the other 50% of their student's stipend as well as the costs of the research and the dissemination of the results. We also anticipate modest administrative expenses for the partner Institute of Medical Science (IMS), the administrating unit for the Graduate Diploma within the School of Graduate Studies (SGS).

I wish you every success with this exciting Diploma Program.

Sincerely,

Patricia Houston, MD, MEd, FRCPC
Vice-Dean, MD Program
Faculty of Medicine, University of Toronto.

Medical Sciences Building, 1 King's College Circle, Room 3157, Toronto, Ontario M5S 1A8 Canada
Tel: +1 416 978-4934 · Fax +1 416 946-3992

McLAUGHLIN
CENTRE
Advancing Genomic Medicine through Research and Education

UNIVERSITY OF TORONTO

February 5, 2017

Neil Sweezey, MD, FRCPC
Director, CREMS Programs,
MD Program, Faculty of Medicine
University of Toronto

Dear Neil:

Further to our meeting of September 8th, 2016, I am writing to confirm that with support of its executive committee the McLaughlin Centre will provide $37,500 annually to cover the CREMS Program's 50% contributions towards the stipends of five medical students enrolled in the new CREMS Graduate Diploma in Health Research Program. Our support of the CREMS Scholar Program will cease at that time.

In addition to providing this ongoing support, we will consider future requests from you for support of additional CREMS initiatives related to the goals of the McLaughlin Centre.

Sincerely,

Stephen Scherer, PhD, FRSC
Director, McLaughlin Centre and
The Centre for Applied Genomics (TCAG)
GlaxoSmithKline/CHIR Chair in Genome Sciences
Senior Scientist, The Hospital for Sick Children
Professor of Medicine, University of Toronto

cc. Norman Rosenblum, MD, FRCPC

UNIVERSITY OF TORONTO
DALLA LANA SCHOOL OF PUBLIC HEALTH

Adalsteinn Brown
Interim Dean
Dalla Lana Chair in Public Health Policy

January 8, 2018

Trevor Young, MD
Dean and Vice Provost, Relations with Health Care Institutions
Faculty of Medicine, University of Toronto
Medical Sciences Building, Rm. 2109
1 King's College Circle
Toronto, ON M5S 1A8

RE: Relationship between the Institute of Health Policy Management and Evaluation (IHPME), Dalla Lana School of Public Health and the Graduate Diploma in Health Research (GDipHR), Faculty of Medicine

Dear Dean Young:

The purpose of this letter is to define the partnership between the Institute of Health Policy, Management and Evaluation (IHPME), Dalla Lana School of Public Health (DLSPH) and the Faculty of Medicine (FOM) to support the proposed *Graduate Diploma in Health Research* (GDipHR) in the Faculty of Medicine.

The parties seek to define this partnership with the mutual aim of enhancing medical student training/education in the broad field of medical research and the educational and research efforts of the IHPME. Development of formal partnerships between GDipHR and IHPME is viewed as beneficial, providing (i) enhanced mentorship and encouragement to medical students exploring a career as a physician-scientist, (ii) increased diversity and quality of research projects and mentors, (iii) a greater breadth of experience for graduate students, and (iv) greater understanding among medical students for opportunities in postgraduate education.

IHPME provides the rigorous training required for tomorrow's health researchers through its MSc and PhD in Health Policy, Management and Evaluation. Our unique interdisciplinary approach is ideally suited to preparing leaders - academics, researchers, clinician scientists, policy-makers and administrators - who can understand and address the demands of a complex and rapidly changing health care landscape.

IHPME faculty members are leading researchers in their fields who are committed to teaching, individual mentoring, and building research capacity. Students can experience the full breadth and depth of research and scholarship in their chosen concentration. They are also exposed to diverse and emerging fields of knowledge as a result of the Institute's strong collaborative relationships within the Faculty of Medicine, with other faculties across the university and with hospital-based research institutes. The strength of the Institute's comprehensive approach is evident in the success of its students. IHPME students are highly competitive in peer reviewed grant applications and publications. Our graduates are faculty and researchers in prestigious academic and research institutions throughout North America.

MD Program, Comprehensive Research Experience for Medical Students (CREMS) and the Graduate Diploma in Health Research

The MD Program, Faculty of Medicine provides the extracurricular CREMS program of training in biomedical, clinical and health services research for medical students. The Institute of Medical Science (IMS), an

Extra-Departmental graduate unit within the Faculty of Medicine, proposes the GDipHR in partnership with CREMS. This is for selected first and second year medical students to partake in graduate-level research training. They will be mentored by a graduate faculty (i.e. research supervisor) for 20 consecutive months, beginning in January of the first year of the MD Program pre-clerkship. Students enrolled in the GDipHR will be expected to complete a research project, participate in a research curriculum and present their work at the annual Medical Student Research Day. The research curriculum will be presented in a core course for all GDipHR students, who will also take an approved elective course.

Organizational Structure, Governance and Curriculum Oversight of GDipHR

Governance and administration:

- The GDipHR Program will be governed by a steering committee. This committee will be led by the Director of GDipHR, with representation from partner departments and institutes (including IHPME), MD Program Pre-clerkship, and the MD Program student body. The committee and the Diploma Program will be administratively supported by CREMS within the Physician-Scientist Program portfolio.
- GDipHR and its partners will oversee, evaluate, and improve the GDipHR program in a timely fashion.
- Administration and logistics for the partnership will be provided, at least in part, by the CREMS Program Coordinator

Curriculum:

- Application has been made to the University of Toronto for credentialing of GDipHR to begin in January 2019. The Program will consist of a curriculum and research project. Curriculum will be delivered by faculty within partner units in coordination with GDipHR.
- A core graduate course will be offered by the IMS, *Research Skills for the Physician-Scientist* (MSC1992Y). It will provide exposure to leading-edge research performed within the Faculty of Medicine and the School of Public Health with particular relation to the curricular content within the MD Program.
- Within the *Supervised Research Project* course (MSC1991Y), the Diploma student will conduct and disseminate a health-related research project in a mentored environment.
- Students will take an approved graduate level half-course relevant to their career goals.

Recruitment of Faculty Mentors

- Projects will be developed and supervisors will be nominated by the partner Departments/Institutes as per the standards set by the Diploma Course steering committee.
- These projects/supervisors will constitute a menu of projects from which students can choose to apply for funding by the Diploma Course.

Recruitment of Medical Students

- GDipHR will advertise the *Graduate Diploma in Health Research* program to all medical students accepted into the University of Toronto before and after medical school begins in August/September. Students will be referred to the GDipHR website and GDipHR coordinator for further information.
- GDipHR will post online projects / mentors selected by the partner Departments/Institutes and advertise to the students that these are available for perusal by the first-year student body.

- GDipHR will facilitate contact between the faculty mentor and candidate medical student participant.

Agreement between IHPME and GDipHR

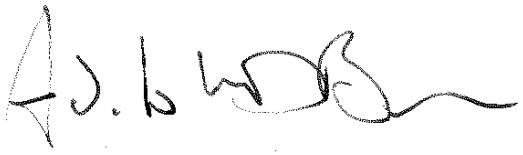
The parties agree, in general to:

- Collaborate in program review of the GDipHR, with particular emphasis on curriculum and high quality research experiences for medical students for the benefit of both parties.
- Promote the IHPME and GDipHR Program within their respective programs using communication tools including web- and paper-based communication.
- Utilize resources of both parties for the GDipHR
- Review the terms of this partnership three years after it is initiated

The parties agree to the following initiatives and processes specific to this partnership and contributions by the partners:

- GDipHR will fund 10 student positions using its resources, providing 50% of the required stipend for each Diploma student that works under an approved faculty mentor with the remaining part of the stipend paid by the research supervisor.
- The IHPME will fund up to two student positions starting in January 2019, providing 50% of the required stipend for each GDipHR student that works under a mentor's approved project with the remaining part of the stipend paid by the research Supervisor.
- IHPME will facilitate access to appropriate IHPME half-courses as electives for a limited number of Diploma students.
- IHPME will assist in advertising for volunteer faculty to be teachers / seminar leaders / lecturers / markers for the MSC 1992Y course

Signed by:



Adalsteinn Brown
Interim Dean
Dalla Lana Chair in Public Health Policy
Dalla Lana School of Public Health

cc.
Nancy Baxter, Associate Dean, Academic Affairs
Robert Fowler, Program Director, Clinical Epidemiology & Health Care Research, IHPME, DLSPH
Whitney Berta, Acting Graduate Coordinator, IHPME, DLSPH
Rhonda Cockerill, Acting Director and Graduate Chair, IHPME, DLSPH
Patricia Houston, Vice Dean, MD Program, FOM
Robert Chen, Interim Associate Dean, Physician-Scientist Training, FOM
Neil Sweezey, Director, CREMS Programs, FOM