UNIVERSITY OF TORONTO

OFFICE OF THE GOVERNING COUNCIL

FOR CONFIRMATION **PUBLIC** **CLOSED SESSION**

TO:	Executive Committee
SPONSOR:	Cheryl Regehr, Vice-President and Provost
CONTACT INFO:	(416) 978-2112, provost@utoronto.ca
PRESENTER:	As above
CONTACT INFO:	
DATE:	June 7, 2018 for June 14, 2018
AGENDA ITEM:	4(c)

ITEM IDENTIFICATION:

New Graduate Program Proposal: Master of Science in Pharmacy (M.Sc.Phm.), Leslie Dan Faculty of Pharmacy

JURISDICTIONAL INFORMATION:

Under section 5.4 of the terms of reference for the Executive Committee:

The Executive Committee confirms certain decisions reached by the Academic Board, as specified by the Board's Terms of Reference.

GOVERNANCE PATH:

1. Committee on Academic Policy and Programs [for recommendation] (May 10, 2018)
2. Academic Board [for approval] (May 31, 2018)
3. **Executive Committee [for confirmation] (June 14, 2018)**

PREVIOUS ACTION TAKEN:

The proposal for the Master of Science in Pharmacy received approval from the Leslie Dan Faculty of Pharmacy Faculty Council on April 27, 2018.

HIGHLIGHTS:

This is a proposal for a 6 session professional master's degree program called Master of Science in Pharmacy (M.Sc.Phm.) to be offered by the Leslie Dan Faculty of Pharmacy. Students will complete 9.0 full-course equivalents (FCE) consisting of coursework (3.0 FCE), clinical practicum (3.0 FCE) and a research project (3.0 FCE). Students will also attend the Graduate Research in Progress (GRIP) Symposium each year and present one poster at a GRIP Symposium. The new degree program will provide an opportunity for pharmacists to gain advanced clinical knowledge in a defined area of practice that will enable them to become clinical leaders in a wide range of patient care and professional settings. Graduates will also hold leadership roles in quality improvement programs, the provision of education to pharmacy students and other health care providers, and the development of pharmacy practice and health care services and policies.

Changes to the entry-to-practice Pharmacy degree program in Canada has meant that there is now a lack of opportunity in our pharmacy education system to train the small number of students destined to go on to be pharmacy professional leaders, teachers and clinicians. The M.Sc.Phm. program has been developed in a direct response to this need for pharmacy practice leaders expressed by academic institutions and academic hospitals. As members of patient care teams and as pharmacy practice researchers, graduates of the M.Sc.Phm. program will influence the provision of pharmaceutical care at the patient and population level. As teachers, they will shape the development of current and future pharmacists.

Applicants to the M.Sc.Phm. program will be required to hold a professional pharmacy degree from a Canadian Council for Accreditation of Pharmacy Programs (CCAPP)-accredited institution (or equivalent). It is anticipated that 5-10 students will register in the degree program each year and the expected steady state enrolment is 20 students per year. Faculty members teaching in the program will be from among the Clinician Scientists in the Faculty and other pharmacist/clinician researchers with graduate appointments.

Consultation took place within the Faculty as well as with the Canadian Pharmacy Residency Board, the Hospital Pharmacy Residency Forum of Ontario, the TAHSN Pharmacy Directors, the Ontario College of Pharmacists, the Ontario Pharmacists Association, the Canadian Society of Hospital Pharmacists – Ontario Branch, the Canadian Pharmacists Association and the Associations of Faculty of Pharmacies of Canada.

The program was subject to an external appraisal on January 24, 2018 by Professors Karen B. Farris, University of Michigan and Dr. Marc M. Perreault, Université de Montréal. The external appraisers made a number of suggestions, which resulted in changes to the program as is reflected in the Dean's response to the appraisal report.

FINANCIAL IMPLICATIONS:

The new financial obligations resulting from this program will be met at the divisional level.

RECOMMENDATION:

Be It Confirmed by the Executive Committee

THAT the proposed degree program, Master of Science in Pharmacy (M.Sc.Phm.), as described in the proposal from the Leslie Dan Faculty of Pharmacy dated April 11, 2018 be approved effective September 1, 2019.

DOCUMENTATION PROVIDED:

- *Proposal for a Master of Science in Pharmacy*

UNIVERSITY OF TORONTO

University of Toronto
New Graduate Program Proposal

Full Name of Proposed Program:	Master of Science in Pharmacy
Degree Name and Short Form:	Master of Science in Pharmacy (MScPhm)
Program Name:	Pharmacy
Professional Program:	Yes
Unit (if applicable) offering the program:	Graduate Department of Pharmaceutical Sciences
Faculty / Division:	Leslie Dan Faculty of Pharmacy
Dean's Office Contact:	Heather Boon, Dean
Proponents:	Rob Macgregror, Lee Dupuis, Beth Sproule
Version Date*:*	April 27, 2018

New Graduate Program Proposal

[Masters of Science in Pharmacy]

[Department of Pharmaceutical Sciences]

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1 Summary

Until recently, pharmacists in Canada entered the profession after completing a Bachelor of Science in Pharmacy (BScPhm). A few select students went on to complete a Post-Baccalaureate PharmD offered by only a few Canadian universities including the University of Toronto. Today, the entry to practice degree has been upgraded to a PharmD, with all Canadian pharmacy programs expected to complete the transition to this new degree by 2020. All post-baccalaureate PharmD programs have been closed or replaced with bridging programs to allow practising pharmacists to upgrade from their BScPhm to a PharmD. This has left a gap in our pharmacy education system as there is no longer any program to train the small number of students destined to go on to be pharmacy professional leaders, teachers and clinicians. The Masters of Science in Pharmacy (MScPhm) program has been developed in a direct response to this need for pharmacy practice leaders expressed by academic institutions and academic hospitals. Graduates of the MScPhm program will lead the optimization of the provision of pharmaceutical care at the patient and population level. As teachers, they will shape the development of current and future pharmacists.

This full-time, 24 month MScPhm professional graduate program will be comprised of 3 components with approximately 8 months dedicated to each: in-class and on-line courses, a clinical practicum, and a research project. Students admitted to the MScPhm program will be required to hold a professional pharmacy degree from a Canadian Council for Accreditation of Pharmacy Programs (CCAPP)-accredited institution (or equivalent). Each student will have a primary supervisor supported by an advisory committee.

A key feature of this program will be the flexibility to accommodate the defined area of practice each student wishes to pursue. The scheduling of program activities will be tailored to meet the needs of each student as much as possible, and it is likely that some will be undertaken concurrently (e.g., one could be enrolled in courses while starting the clinical practicum). From the outset of the program, students will be placed within the clinical and research settings at the practice site of their supervisors, primarily Toronto Academic Health Science Network (TAHSN) hospitals. TAHSN is a dynamic network of academic health organizations providing leading edge research, teaching and clinical care. TAHSN is comprised of the University of Toronto and 13 affiliated academic hospitals, each of which hold national and international standing as leaders in their particular fields. Together, these organizations work collaboratively to advance and sustain a shared academic mission of providing high quality patient care, conducting innovative research, offering world renowned top-quality education programs, and participating in knowledge transfer activities. (see: http://www.tahsn.ca/)

The MScPhm degree program has been developed as an advanced professional practice program for pharmacists with a research-informed, scientific focus as the foundation of all its components. It has been developed to build upon our entry to professional practice degree programs (i.e., the BScPhm program which was offered from 1951-2011 and the current Doctor of Pharmacy program). It is anticipated that 5-10 students will choose to enroll in the

new MScPhm program each year. Only students ready to rise to the challenge of taking on leadership roles in clinical practice and education will be admitted to this program.

The new MScPhm program will provide an opportunity for pharmacists to gain advanced clinical knowledge in a defined area of practice that will enable them to become clinical leaders in a wide range of patient care and professional settings. MScPhm graduates will also hold leadership roles in quality improvement programs, the provision of education to pharmacy students and other health care providers and the development of pharmacy practice and health care services and policies.

Graduates of the MScPhm who later decide to pursue an independent research career will be strong candidates for a subsequent PhD degree.

2 Effective Date

Anticipated date students will start the program: September 2019

3 Program Rationale

The education of Canadian pharmacists is evolving rapidly. The Bachelor of Science in Pharmacy degree is being replaced with the new entry-to-practice Doctor of Pharmacy (PharmD), which is becoming the new standard for pharmacists entering the workforce. Under the previous paradigm, the need for advanced professional practice training opportunities for pharmacists wishing to become clinical leaders in practice and academic setting was met through the post-baccalaureate PharmD programs available at two universities in Canada (UofT and UBC). The University of Toronto post-baccalaureate PharmD program ran from 1992 to 2017, and graduated approximately 8-10 students per year. However, both of these programs have been phased out as a result of the implementation of the new entry-to-practice PharmD programs. This has created a significant gap in the pharmacy education landscape as there is no longer any program to train the small number of students destined to go on to be pharmacy professional leaders, teachers and clinicians. The MScPhm program is proposed to fill this gap.

Currently in Ontario (and all of Canada), Post-PharmD clinical hospital residencies and fellowships are the only additional training opportunities available to pharmacists wishing to advance their skills and knowledge beyond the entry to practice standard. Hospital residencies and fellowships are run by clinical sites and primarily focus on providing advanced clinical generalist skills to pharmacists interested in a career in hospital pharmacy. Hospital residencies focus on providing the learners with the skills and knowledge to enter hospital practice; fellowship programs offer an opportunity to gain additional training in a specific therapeutic area or in clinical research. However, residency and fellowship programs do not have standardized curricula; do not lead to degrees; do not support development of advanced skills in all three areas of clinical practice, research and education; do not focus on developing leadership skills; and are not designed to allow students to develop strong knowledge and skills in a single focused area.

The purpose of this new graduate program, the MScPhm program, is to train our future academic clinical pharmacist leaders.

The proposed MScPhm program is a structured program that combines graduate-level coursework with clinical practica, and research training. It will provide an opportunity for pharmacists to gain advanced clinical therapeutic knowledge and practice experience, in addition to research, education and leadership skills. This program will graduate the next generation of pharmacy academic and clinical leaders – a distinct cohort who will enhance patient care and advance pharmacy practice through research and the education of current and future pharmacists.

Summary of current degree programs offered at the Leslie Dan Faculty of Pharmacy, University of Toronto:

- Bachelor of Science in Pharmacy (BScPhm): APPROVED TO CLOSE EFFECTIVE JUNE 2018
- Doctor of Pharmacy (PharmD): OPEN – entry-to-practice degree replacing BScPhm
- PharmD for Pharmacists (PharmD): OPEN – optional bridging program for BScPhm pharmacists with same PharmD degree educational outcomes as entry-to-practice Doctor of Pharmacy program
- Master of Science (MSc): OPEN – research intensive program in Graduate Department of Pharmaceutical Sciences; open to pharmacists and students from many other disciplines
- Doctor of Philosophy (PhD): OPEN – research intensive program Graduate Department of Pharmaceutical Sciences; open to pharmacists and students from many other disciplines
- Master of Science in Pharmacy (MScPhm): PROPOSED – advanced pharmacy professional practice program in Graduate Department of Pharmaceutical Sciences Department; proposed for pharmacists only

Table 1 Comparison of Faculty of Pharmacy Degree Programs indicating degree focus

	Entry to Practice	Advanced Practice	Research	Teaching	Leadership	Career Outcomes
PharmD	XXXX					General Pharmacist
MSc			XXX			Research Assistant/Coordinator/ Collaborator
PhD			XXXX		X	Scientist
Proposed MScPhm		XX	XX	X	X	Advanced Practice Clinician, Clinical Leader, Clinical Educator

Appropriateness of Degree Nomenclature - MScPhm

The degree nomenclature chosen is Master of Science in Pharmacy (MScPhm). The degree has been developed as an advanced practice program for pharmacists with a research-informed, scientific focus as the foundation of all its components. The courses, clinical practicum and research project will foster advanced practice that is evidence-informed and evidence-building.

This program has been developed to build upon our entry to professional practice degree programs (i.e., the BScPhm program which was offered from 1951-2011 and the current Doctor of Pharmacy program). Therefore, the MScPhm designation is appropriate.

Distinctiveness of New MScPhm Degree

This new program will differ from our MSc research-intensive program in several key ways:

- Restriction to students with a professional pharmacy degree (e.g., BScPhm or PharmD)
- An increased course requirement
- A clinical practicum component and
- A major research project that is smaller in scope than our current MSc thesis.

Similar Offerings at the University of Toronto or at Other Universities

No similar program is currently offered at any Canadian university. This program has the potential to set the standard for advanced pharmacy training across Canada.

Other advanced clinical pharmacy practice graduate degrees:

- L'Université Laval and l'université de Montréal offer a Master's of hospital pharmacy and Maitrise en pharmacotherapie avancée, as an 18-month or a 16-month degree program for pharmacists. Each program requires 1 semester of course wor*k* at the university and 3 semesters of clinical placements at a hospital site, including participation in a research project. This degree is a requirement for pharmacists to practice in Quebec hospitals and the emphasis is on preparing students for clinical practice in this setting. This program differs from the proposed MScPhm in having fewer courses (only half as many), a greater focus on clinical practice, produces generalists rather than students with in-depth training in a focused area and includes a research project of smaller scope.
- The University College London offers a MSc in Advanced Pharmacy Practice (MScApp) on a part-time basis to practicing pharmacists. The program is centred on four aspects of advanced pharmacy practice: 1) Education, training and development; 2) Leadership; 3) Management, and 4) Research and evaluation. A research project is optional and, if chosen, would replace the advanced practice assignments. This program differs from the proposed MScPhm in that students must choose between research or advanced clinical placements (rather than doing both as in our proposed program) and it is not designed to support development of knowledge and skills in a specific area of focus.
- Queen's University Belfast offers a 3-year, part-time MSc in Advanced Clinical Pharmacy Practice to pharmacists. Apart from a 5-day residential period in the second semester, all course work is delivered on-line; there is no required clinical

practicum. In the third year, students choose to follow one of 3 streams: Practice-based research project; Practice-based research project plus Advanced Practice (includes leadership and management) or Practice-based research project plus Clinical Practice (2 weeks practicum at an NHS facility).

- The University of Strathclyde, Glasgow offers an MSc in Advanced Clinical Pharmacy Practice to pharmacists who wish to become innovators in the field of clinical pharmacy. Required components are coursework including 1 class in research skills and a project. Coursework is delivered through e-learning materials, small group tutorials and workshops and centres on: therapeutics, health service quality improvement and research. There is no clinical practicum requirement.

Other clinical (i.e., restricted to those with health professional degree) course-based MSc-degree programs or components of programs with emphasis on advanced clinical skills include:

- The Lawrence S Bloomberg Faculty of Nursing, University of Toronto, offers a Clinical Nursing field of study within the Master of Nursing (MN) program which is designed to prepare nurses for clinical leadership roles in healthcare organizations in Canada and internationally. Graduates are prepared for advanced practice clinical roles such as clinical nurse specialists, nurse educators, professional practice leaders, and other related roles. The MN Clinical Nursing field of study program requires 5.0 full-course equivalents (FCEs) as follows: four foundational courses, one of several optional relational courses, three courses chosen from the core course clinical field list (two must be Faculty of Nursing courses), and 1.0 FCE practicum-based course, which should be taken alone in the final session and only after completion of all other coursework and program requirements. . This program is only available to individuals with a BScN or equivalent and applicants must hold current registration as a registered nurse or equivalent.

Other clinical (i.e., restricted to those with health professional degree) course-intensive MSc-degree programs with emphasis on research training:

- The Institute of Health Policy, Management and Evaluation (IHPME), University of Toronto, offers Clinical Epidemiology and Health Care Research as a concentration for Master of Science and Doctoral level students with a health professional background including physicians, nurses, physiotherapists, occupational therapists, dentists, and others. The MSc is designed for health professionals interested in learning the skills necessary to conduct clinical and health care research. Two streams of training are available at the Masters level – a non-thesis, course-only stream (10 half-courses including completion of a research practicum) and a thesis-based stream (6 half-courses and a thesis).

Other clinical (i.e., not restricted to health professionals), health science, course-based MSc-degree programs:

- Department of Pharmacology and Toxicology, Faculty of Medicine, University of Toronto offers an Applied Clinical Pharmacology field of study within the Master of Science in Pharmacology degree program. This is a two-year, course-based field of study within the MSc program. Students must complete 8.0 Full Course Equivalents (FCEs) comprised of mandatory and elective offerings, including a hands-on laboratory course and a major research project supervised by a faculty member.

- The Institute of Biomaterials and Biomedical Engineering (IBBME), University of Toronto, offers a Master of Health Science (MHSc) in Clinical Engineering. It is a two-year, full time program consisting of academic courses, internships, and a research thesis.

Describe the consistency of the program with the University's mission and graduate unit/divisional academic plan and priorities

The University of Toronto is committed to being an internationally significant research university, with undergraduate, graduate and professional programs of excellent quality. The Leslie Dan Faculty of Pharmacy's mission is to advance pharmacy practice and pharmaceutical science through world-leading education and research. The vision is to be globally recognized for impactful research and fostering expert, innovative practice; and to have our faculty and graduates be leaders who continually advance science and practice to improve health through pharmaceutical care. In the Leslie Dan Faculty of Pharmacy 2021 Forward Together Academic Plan, a strategic focus area is to advance education programs that develop leaders for diverse and emerging careers. A key objective is to have core programs and multiple learning pathways to prepare graduates for increasingly diverse career options and practice innovation.

The current proposal for the new MScPhm program addresses an initial priority in this area: to review our graduate program and develop a new opportunity for advanced clinical pharmacy practice education. The new MScPhm program is designed to produce graduates who will be change leaders. As members of patient care teams and as pharmacy practice researchers, they will influence the provision of pharmaceutical care at the patient level. As teachers they will shape the development of current and future pharmacists. Thus, the proposed MScPhm is entirely consistent with the University's mission and a core priority within the Leslie Dan Faculty of Pharmacy's academic plan.

4 Fields/Concentrations

N/A

5 Need and Demand

Advanced training opportunities for pharmacists wishing to become clinical leaders in practice or academic settings are limited. With the pan-Canadian commitment to support the

conversion from BScPhm to entry-to-practice PharmD programs by 2020, Post-Baccalaureate PharmD programs have been (UofT) or are being (UBC – no new admissions accepted) phased out. The University of Toronto post-baccalaureate PharmD program ran from 1992 to 2017, and graduated approximately 8-10 students per year. This has left a large gap in the Canadian pharmacy educational landscape as there is no longer any program to train the small number of students destined to go on to be pharmacy professional leaders, teachers and clinicians. We anticipate the demand for the MScPhm program will be a least as strong, if not stronger, as the previous post-baccalaureate PharmD program.

The purpose of our new MScPhm program is to provide an opportunity for pharmacists to gain advanced clinical knowledge in a defined area of practice that will enable them to become clinical and academic leaders in a wide range of patient care and professional settings, and ultimately to enhance patient care. It is also recognized that pharmacist graduates of the MScPhm program will be involved in conducting and supporting clinical research and education. They will also assume other leadership roles in pharmacy practice enhancement and health care policy development.

Potential employment opportunities include institutional, community and ambulatory clinical practices, as well as pharmaceutical industry and educational institutions. Our colleagues in the Toronto Academic Health Science Network hospitals as well as in Schools and Faculties of Pharmacy across Canada have identified a need for academic clinical pharmacist leaders, but currently no program exists to provide this training at the post entry-to-practice PharmD level.

Need to Educate Clinical Leaders for Academic Settings:
The conversion to the entry-to-practice PharmD program at the Leslie Dan Faculty of Pharmacy led to a doubling of the full-time clinical faculty. In fact, the 2013 external reviewers for our University of Toronto Quality Assurance Program review of our entry-to-practice PharmD program commented that even more full-time clinical faculty are required to fulfill the mandate of the program. In recent tenure stream searches for faculty members at the Leslie Dan Faculty of Pharmacy, very few pharmacists applied and none had sufficient training or experience to make our short list. As Canadian Faculties of Pharmacy convert to the entry-to-practice PharmD program, the demand for clinical faculty will increase. As a result our experience will be or is being repeated in Faculties of Pharmacy across Canada.

The research training and expertise provided in the MScPhm program will prepare graduates to participate in collaborative research projects, quality improvement initiatives and knowledge translation activities. These scholarly skills are in demand both at universities and health care institutions.

Increasingly we are hearing that Faculties are unable to find pharmacists qualified to take on clinical academic programs. This new program will produce graduates who are able to fill these much needed academic clinical pharmacist roles.

Need to Educate Clinical Leaders for Patient Care Settings:

Hospitals across Canada require clinical pharmacy leaders in a range of focused areas such as cardiology, infectious disease, pediatrics and mental health. Currently in Canada there is no training program for pharmacists to obtain the advanced therapeutic knowledge and clinical skills needed to fill these roles. Canadian institutions are having an increasingly difficult time to recruit pharmacists into clinical leadership positions. Graduates from the proposed MScPhm will be immediately employable in these clinical leadership roles across Canada.

6 Enrolment

Table 1: Graduate Enrolment Projections* – MScPhm

Estimated Number of Students	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Enrolment - FULL-TIME Year 1	5	7	10	10	10	10
Enrolment - FULL-TIME Year 2	0	5	7	10	10	10
Total Enrolment	5	12	17	20	20	20

** Our numbers are modeled after the full-time complement of students that enrolled in our post-baccalaureate PharmD program that was phased out (last recruitment) in 2013.*

Our previous post-baccalaureate PharmD program ran from 1992 to 2017, and graduated approximately 8-10 students per year. We expect the demand for the MScPhm program will be a least as strong, if not stronger based on the current level of interest expressed during our consultations. The need for academic clinical pharmacists, and therefore the interest in this program, will be ongoing.

It is anticipated that 5-10 students will choose to enroll in the new MScPhm program each year. We anticipate that some students currently enrolled in our research-intensive MSc program, and those combining an MSc with a pharmacy residency program, may prefer the newly proposed MScPhm program. Thus we may see the number of students enrolling in the existing MSc program decrease by 1-2 per year. The proposed new MScPhm program is unlikely to have any significant impact on our PhD program. International applicants will be considered. There will be one intake per year in September.

7 Admission Requirements

Admission requirements for the MScPhm program:

1. Status as a pharmacist, based on one of the following:
   - Bachelor's degree in Pharmacy or PharmD degree or equivalent from an accredited (CCAPP) Canadian Pharmacy program or an accredited (ACPE) American Pharmacy program *or*
   - license to practice pharmacy (any Canadian jurisdiction) *or*
   - Bachelor's degree in Pharmacy or PharmD degree or equivalent from any International Pharmacy School AND successful completion of the Pharmacy Examining Board of Canada (PEBC) Evaluating Exam.

2. Pharmacy practice experience, including completion of a Year 1 Pharmacy Residency program, is preferred.
3. Academic Standing
   - equivalent of a University of Toronto B+ (77 – 79%) in the last two years of study
4. Supervisor
   - identification of a primary supervisor(s)

Rationale

1. The Masters of Science in Pharmacy (MScPhm) program has been developed in a direct response to the need for clinical practice leaders, therefore, students in the program must be pharmacists. Flexibility has guided the definitions for acceptable status as a pharmacist to accommodate pharmacists trained across Canada and internationally.
2. The academic standing requirement reflects the demanding nature of this program.
3. Each student's primary supervisor will serve as mentor and guide to program individualization. It is expected that the supervisor's field of study will mirror the student's desired area of specialization. It is therefore a requirement that this relationship is established prior to entry.

8 Program Requirements

Proposed Calendar Copy (if lengthy, you may wish to include this in an appendix). Please see Appendix B for proposed calendar copy.

Program Structure and Function

The MScPhm program will be 24 months in duration. Each student will identify an area of clinical specialization which will inform the course selection, clinical practicum site(s) and the research project topic. Students will complete a total of 6 half courses (3.0 full-course equivalents (FCE)), divided between required courses (i.e., advanced pharmacy practice/leadership, research methods, teaching) and elective courses in specialization topics. Students will spend a minimum of 8 months on their clinical practicum (3.0 FCE), and will spend approximately 8 months dedicated to their research project (3.0 FCE). Student will meet at minimum twice a year with their graduate advisory committee, and submit and present their research project at an oral examination.

In addition, students will:

- regularly attend the graduate departmental and student group seminars for 2 years
- attend the Graduate Research in Progress (GRIP) Symposium yearly for 2 years and
- present one poster at a GRIP Symposium.

Students will have an opportunity to interact with other graduate students through participation in joint graduate student requirements, including presenting annually in their graduate student seminar series and presenting an academic conference-style poster at least once at the annual Graduate Research in Progress (GRIP) day.

Summary of program for MScPhm

- **1.5 FCE Mandatory Foundational Courses**

Three mandatory courses presenting foundational material will be developed for this program related to:

- **PHMxxxxH Principles of Advanced Clinical Pharmacy Practice**: patient care, therapeutics, scholarly practice principles and application to practice (including critical appraisal of literature), health systems and pharmacy practice service models, expanding scopes of practice, medication safety and leadership skills.
- **PHMxxxxH Principles of Pharmacy Practice Research**: conducting pharmacy practice research, for example, human research ethics, Responsible Conduct in Research, regulatory requirements for research medication management, grant writing, project management, research design, and statistical approaches. Further, students will develop the concept for their major research project as a component of this course.
- **PHMxxxxH Principles of Pharmacy Practice Education**: preparing students for educational roles in developing and delivering pharmacy practice education (e.g., preceptorship, small group discussions, large group teaching) in university undergraduate and professional development programs.

The patient care and research foundational courses must be taken in the first year of the program.

- **1.5 FCE Elective Courses**

Students may elect to take existing graduate courses in Leslie Dan Faculty of Pharmacy (LDFP) or at other graduate departments in consultation with their supervisors. (See Appendix A)

- **3 FCE Total (1.5 FCE PHMXXXX Clinical Practicum I, 1.5 FCE; PHMXXXX Clinical Practicum II)**

  Students will complete a mandatory total of 8 months clinical practicum at an approved clinical site chosen in conjunction with their graduate supervisor. Scheduling can be flexible throughout the program based on student needs and clinical practice structure at the site. Clinical Practicum I will focus on enhancing and strengthening existing knowledge and skills with expanding complexity. Clinical Practicum II will focus on demonstration of graduation-level proficiency or mastery of the learning outcomes in this course. The clinical sites will not pay the students during the Clinical Practica.

- **3 FCE PHMXXXX Research Project**

  Students will complete a mandatory original research project supervised by their graduate faculty supervisor. All projects will be assessed for feasibility and scope by the Advisory Committees and the Program Leads. A total of 8 months of focused dedicated time is allotted to the research project. Scheduling can be flexible throughout the program. . A written manuscript of the completed research will be submitted and also assessed at an oral examination.

9 Program Description

The MScPhm program will be 24 months in duration and will be offered on a full-time basis only.

MScPhm students will be guided throughout the program by members of their Graduate Advisory Committee. The committee will be composed of the student's (co-) supervisor(s) and at least two faculty members with graduate appointments at the University of Toronto. The committee guides the student in choosing courses, in the conduct of their research project and in other matters that affect the student's academic performance. The student should meet with their Graduate Advisory Committee twice yearly at a minimum. The first meeting should occur in the first quarter of the first year of the program.

Students will complete a total of 6 half courses (3 FCE) which can be taken over the 6 terms, although it is anticipated that most students will choose to finish the course work in the first 4 terms. The patient care and research foundational courses must be taken in the first year of the program. Scheduling of the research and practicum components of the program is designed to be flexible to accommodate a range of needs of both the student and the clinical site and/or research question.

The 1.5 FCE foundational courses will be delivered as face-to-face seminars; some may be supported by on-line learning modules. Through in-class discussion, assignments and group-work, students will be encouraged to generate ideas, proposals, solutions and arguments in response to the concepts under study.

The subject(s) of the 1.5 FCE elective courses may be wide-ranging since, in discussion with their supervisor, the student may choose from the courses offered in the graduate curriculum. Courses will be selected that will promote the development of an advanced clinical pharmacy practitioner within all or one of the three foci of the program: clinical practice, research and teaching/leadership.

Whereas the Province's Quality Assurance Framework requires that students complete a minimum of 2/3 courses at the graduate level, the University of Toronto requires graduate students to complete all of their course requirements from amongst graduate level courses. This proposed program complies with this requirement.

The 3 FCE total clinical practicum and the 3 FCE research project courses will be allocated 8 months each to achieve the learning outcomes. Each could be scheduled in 8 month blocks or spread out over the 24 month period. Each student's supervisor will be responsible for administering the clinical practicum including scheduling and assessment and the research project.

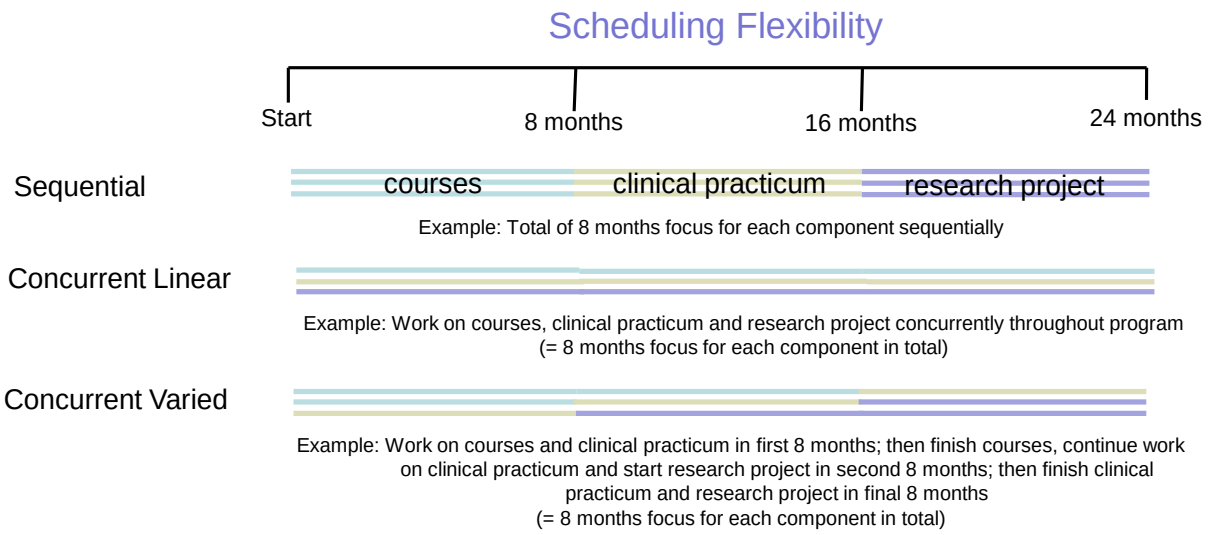
The clinical practicum (I and II) is critical to the achievement of learning outcomes relating to the provision of pharmaceutical care at an advanced level. It is expected that the clinical practicum will be situated at the practice site of the student's supervisor (in most cases a TAHSN hospital) and will be in the field of specialty chosen by the student. Together, the student and their supervisor will develop a schedule of study that will develop and promote advanced pharmacy practice knowledge and skills required to be a medication therapy expert

in a defined area of pharmacy practice. During the clinical practicum, the student will identify and resolve complex therapeutic problems which will require that they identify, appraise, synthesize, interpret and integrate scientific information. During the clinical practicum the students will also apply principles of pedagogy and leadership to communicate plans of care, ideas and scientific evidence. In response to the clinical challenges they encounter and responsibilities they assume, students will develop effective decision-making skills.

The research project course will serve to integrate learning gained during all aspects of the MScPhm program. A research project will be chosen with limited scope to ensure that it can be completed within the 8 months allotted. Under the guidance of their supervisor, each student will identify, synthesize, interpret and integrate emerging scientific data to develop the research project aims and methods. In developing their research proposal, students will generate ideas and develop arguments to support or refute alternate research methods. Students will interpret their research project findings and write a final report. They will formally deliver an oral presentation of their research project findings to their graduate advisory committee.

The flexibility of the program is a key design feature and we have added a diagram portraying examples of different program schedules to illustrate this in more detail (see Figure 2). For example, students may complete the program by choosing to spend the first 8 months doing all their course work, followed by 8 months of clinical practicum and spend the final 8 months on their research projects. Alternatively, they could spend all 24 months doing a blend of courses, clinical and research approximately one third of their time throughout the program. Another example would be that students could spend more time in the first year of the program focusing on course work, and more time on their research project in the second year of their program with their clinical practicum spread evenly throughout the entire program. All of these options are possible. The only requirement is that two of the required foundational courses: Patient Care and Research, must be completed in the first year of the program as they are seen to inform the other program activities and expectations.

Figure 2: Examples of possible program schedules



10 Degree Level Expectations, Program Learning Outcomes and Program Structure

The MScPhm Program Learning Outcomes are:

1. Understand the pharmacy practice principles and content knowledge that underpin the practice of an advanced medication therapy expert in a defined area of pharmacy practice. This includes relevant pharmacology, pharmacokinetics, therapeutics, medication stewardship and considerations specific to the defined patient population.
2. Demonstrate the skills required of a pharmacist who is a medication therapy expert in a defined area of pharmacy practice.
3. Identify, synthesize, interpret and integrate emerging scientific data into practice, research, and teaching.
4. Respond to patient care challenges by leading, independently or collaboratively, the generation of ideas, proposals, solutions and arguments (e.g., new clinical or educational programs).
5. Lead or collaborate on the development, implementation, and interpretation of defined research projects.
6. Apply principles of pedagogy to communicate ideas and scientific evidence in didactic and experiential settings.
7. Demonstrate ethical leadership and decision-making in response to professional responsibilities.

Table 2: Master's DLEs

MASTER'S DEGREE LEVEL EXPECTATIONS (based on the Ontario Council of Academic Vice Presidents (OCAV) DLEs)	**MASTER'S PROGRAM LEARNING OBJECTIVES AND OUTCOMES**	**HOW THE PROGRAM DESIGN AND REQUIREMENTS SUPPORT THE ATTAINMENT OF STUDENT LEARNING OUTCOMES**
EXPECTATIONS: **This MScPhm is awarded to students who have demonstrated:**		
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 the MScPhm degree program as knowledge of a focused practice area supported by knowledge across the fundamental pillars of advanced pharmacy practice: therapeutics, pedagogy and leadership. This is reflected by students who are able to:	The program design and requirement elements that ensure these student outcomes are the required graduate level courses, the clinical practicum and acceptance of their written research project and oral presentation of the research project by their graduate examination committee.

MASTER'S DEGREE LEVEL EXPECTATIONS (based on the Ontario Council of Academic Vice Presidents (OCAV) DLEs)	**MASTER'S PROGRAM LEARNING OBJECTIVES AND OUTCOMES**	**HOW THE PROGRAM DESIGN AND REQUIREMENTS SUPPORT THE ATTAINMENT OF STUDENT LEARNING OUTCOMES**
	Depth 1. Understand pharmacy practice principles and content knowledge that underpin the practice of an advanced medication therapy expert in a defined area of pharmacy practice. This includes relevant pharmacology, pharmacokinetics, therapeutics, medication stewardship and considerations specific to the defined patient population. **Breadth** 3. Identify, synthesize, interpret and integrate emerging scientific data into practice, research, and teaching.	
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 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.	Research and Scholarship is defined in the MScPhm degree program as the ability to locate, interpret and synthesize evidence related to patient care, pedagogy and leadership. This is reflected by students who are able to: 3. Identify, synthesize, interpret and integrate emerging scientific data into practice, research, and teaching. 4. Respond to patient care challenges by leading, independently or collaboratively, the generation of ideas, proposals, solutions and	The program design and requirement element that ensures these student outcomes for research and scholarship are: completion of the required research methods course, biannual (at minimum) supervisory committee meetings; completion of original research normally equivalent to one scholarly paper; the successful completion of the written research project report; and successful oral presentation of the research project.

MASTER'S DEGREE LEVEL EXPECTATIONS (based on the Ontario Council of Academic Vice Presidents (OCAV) DLEs)	**MASTER'S PROGRAM LEARNING OBJECTIVES AND OUTCOMES**	**HOW THE PROGRAM DESIGN AND REQUIREMENTS SUPPORT THE ATTAINMENT OF STUDENT LEARNING OUTCOMES**
	arguments (e.g., new clinical or educational programs). 5. Lead or collaborate on the development, implementation, and interpretation of defined research projects.	
3. Application of Knowledge Competence in the research process by applying an existing body of knowledge in the critical analysis of a new question or of a specific problem or issue in a new setting.	Application of Knowledge is defined in the MScPhm degree program as the ability to use knowledge of therapeutics, pedagogy and leadership to guide advanced pharmacy practice. This is reflected by students who: 2. Demonstrate the pharmacy practice skills required to be an advanced medication therapy expert in a defined area of pharmacy practice. 3. Identify, synthesize, interpret and integrate emerging scientific data into practice, research, and teaching. 4. Respond to patient care challenges by leading, independently or collaboratively, the generation of ideas, proposals, solutions and arguments (e.g., new clinical or educational programs). 5. Lead or collaborate on the development, implementation, and interpretation of defined research projects. 6. Apply principles of pedagogy to communicate ideas and	The program design and requirement elements that ensure these student outcomes for application of knowledge are: the required courses; the clinical practicum experience; and the research project.

MASTER'S DEGREE LEVEL EXPECTATIONS (based on the Ontario Council of Academic Vice Presidents (OCAV) DLEs)	**MASTER'S PROGRAM LEARNING OBJECTIVES AND OUTCOMES**	**HOW THE PROGRAM DESIGN AND REQUIREMENTS SUPPORT THE ATTAINMENT OF STUDENT LEARNING OUTCOMES**
	scientific evidence in didactic and experiential settings.	
4. Professional Capacity/Autonomy a. The qualities and transferable skills necessary 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.	Professional Capacity/Autonomy is defined in the MScPhm degree program as the ability to practice independently at an advanced level and to provide leadership with respect to innovation in practice, education and scholarship. This is reflected by students who: 1. Understand the pharmacy practice principles and content knowledge that underpin the practice of an advanced medication therapy expert in a defined area of pharmacy practice. This includes relevant pharmacology, pharmacokinetics, therapeutics, medication stewardship and considerations specific to the defined patient population. 4. Respond to patient care challenges by leading, independently or collaboratively, the generation of ideas, proposals, solutions and arguments (e.g., new clinical or educational programs). 5. Lead or collaborate on the development, implementation, and interpretation of defined research projects. 7. Demonstrate ethical leadership and decision-making	The program design and requirement elements that ensure these student outcomes for professional capacity/autonomy are: the required courses; the clinical practicum; and the research project.

MASTER'S DEGREE LEVEL EXPECTATIONS (based on the Ontario Council of Academic Vice Presidents (OCAV) DLEs)	**MASTER'S PROGRAM LEARNING OBJECTIVES AND OUTCOMES**	**HOW THE PROGRAM DESIGN AND REQUIREMENTS SUPPORT THE ATTAINMENT OF STUDENT LEARNING OUTCOMES**
	in response to professional responsibilities.	
5. Communications Skills The ability to communicate ideas, issues and conclusions clearly.	Communications Skills is defined in the MScPhm degree program as the ability to communicate effectively with patients, inter-professional care teams, students and scholars. This is reflected by students who: 1. Understand the pharmacy practice principles and content knowledge that underpin the practice of an advanced medication therapy expert in a defined area of pharmacy practice. This includes relevant pharmacology, pharmacokinetics, therapeutics, medication stewardship and considerations specific to the defined patient population. 4. Respond to patient care challenges by leading, independently or collaboratively, the generation of ideas, proposals, solutions and arguments (e.g., new clinical or educational programs). 6. Apply principles of pedagogy to communicate ideas and scientific evidence in didactic and experiential settings. 7. Demonstrate ethical leadership and decision-making in response to professional responsibilities.	The program design and requirement elements that ensure these student outcomes for level of communication skills are: the core courses (particularly Principles of Pharmacy Practice Education), the seminar and presentation degree requirements, as well as through written assignments required in several courses, the presentations and teaching associated with the clinical practicum, and the written report required for the research project. The elective courses may provide further opportunities to expand these skills.

11 Assessment of Learning

A. Methods of Evaluation for Program Requirements

Students will be evaluated through a variety of methods over the tenure of the program, to include, but not be limited to: written examinations and reports, oral presentations, and oral examinations. The methods of evaluation for each of the program requirements are described below in relation to the MScPhm Program Learning Outcomes which are:

1. Understand the pharmacy practice principles and content knowledge that underpin the practice of an advanced medication therapy expert in a defined area of pharmacy practice. This includes relevant pharmacology, pharmacokinetics, therapeutics, medication stewardship and considerations specific to the defined patient population.

2. Demonstrate the skills required of a pharmacist who is an advanced medication therapy expert in a defined area of pharmacy practice.

3. Identify, synthesize, interpret and integrate emerging scientific data into practice, research, and teaching.

4. Respond to patient care challenges by leading, independently or collaboratively, the generation of ideas, proposals, solutions and arguments (e.g., new clinical or educational programs).

5. Lead or collaborate on the development, implementation, and interpretation of defined research projects.

6. Apply principles of pedagogy to communicate ideas and scientific evidence in didactic and experiential settings.

7. Demonstrate ethical leadership and decision-making in response to professional responsibilities.

Foundational and Elective Courses

The 3 required foundational courses will address all of the program learning outcomes at the reinforcing and developing levels. Learning outcomes 3 and 4 will be emphasized. See Appendix E for curriculum map. Didactic courses will have grading standards appropriate for graduate level requirements, with the expectation of an average score of at least a B (73-76%). Assessments will include written examinations, oral examinations, written assignments, oral presentations, presentations using other media (e.g., video). In all courses students will be graded according to the rigorous expectations of faculty within the program.

Clinical Practicum

The clinical practicum placements will address Learning Outcomes 1, 2, 3, 4 and 7 at the developing (Clinical Practicum I & II) and advanced levels (Clinical Practicum II). See Appendix E for curriculum map. The clinical practicum component will be assessed using rubrics to evaluate advanced competencies in direct patient care, communication and education, presentation skills, student mentorship, professionalism, professional collaborations, and leadership. The assessments will occur throughout the practicum providing both formative and summative assessments. This requirement will be graded as pass/fail.

Research Project
The research project requirement will address Learning Outcomes 2, 4, 5, 6 and 7 at the advanced level. See Appendix E for curriculum map. The research project will be evaluated similarly to a thesis project, but with a reduced expectation with respect to scope. Students will prepare a written research report and undergo an oral examination by committee. Performance on the written report and the oral examination must be deemed a pass by the examination committee.

Seminars and Presentations
The research project requirement will address Learning Outcomes 3 and 6 at the developing to advanced levels. See Appendix E for curriculum map. Formative assessment opportunities include the seminar requirements and the presentation at the Graduate Research in Progress conference.

B. Assessment of Program Effectiveness
The Faculty engages in continuous quality improvement for all its educational programs. Annually, each program identifies specific issues on which to focus attention based on baseline data and/or feedback from students, faculty and stakeholders. In this way, changes can be implemented and assessed to determine if they have the expected impact(s). This is an ongoing and iterative process.

The impact of the MScPhm on resources and outcomes at clinical and research sites will also be measured. Evaluation criteria will be developed in conjunction with staff at these sites and may include: number of Advanced Pharmacy Practice Experience students placed, number of residency positions offered, and number of research projects that lead to a practice change.

As with all of our academic programs, we will develop a program evaluation logic model to guide our program evaluation plans which will be facilitated by the Education Office of the Faculty. In the early years of the program, we will focus on inputs such as the number of inquiries about the program, number and quality of applicants, and number of supervisors/clinical sites accepting students from the program. We will then focus on completion rates, time to completion and student experiences in the program. Finally we will track and evaluate outcomes including feedback from graduates with respect to satisfaction with the program, and impact on their careers.

In addition, the program will be formally assessed every 5-8 years as part of the University of Toronto Quality Assurance Process.

12 Consultation

The proposed MScPhm is distinct from our research-intensive MSc and PhD programs. There should be no direct impact on our PhD program and perhaps slightly fewer applicants to our MSc program. We are not anticipating any impact on other programs, Faculties or Divisions at the University of Toronto. We have developed this program to fill an identified need in

advanced pharmacy practice training that has resulted from the closure of our Post-Baccalaureate PharmD program.

To ensure our proposed approach is feasible and accepted by the profession as well as prospective students, we have undergone extensive internal and external consultations. We have consulted our Pharmaceutical Sciences pharmacist graduate faculty and students, as well as our broader faculty and staff, current pharmacy residents, the Canadian Pharmacy Residency Board, the Hospital Pharmacy Residency Forum of Ontario, the TAHSN Pharmacy Directors, the Ontario College of Pharmacists, the Ontario Pharmacists Association, the Canadian Society of Hospital Pharmacists – Ontario Branch, the Canadian Pharmacists Association and the Associations of Faculty of Pharmacies of Canada.

These consultations have confirmed the interest and need for this new program. Our stakeholders have indicated that the MScPhm program is a significant opportunity to shape and set the standard for advanced clinical pharmacy practice going forward.

13 Resources

The development of the new MScPhm program will have limited need for additional resources. We will appoint dedicated MScPhm Program Leads (from among our current faculty members) to facilitate liaison with our existing graduate program and implement the new program.

The development of this new program will result in an increase in graduate course offerings (something which is currently a priority for the Graduate Department of Pharmaceutical Sciences). Although some of the new graduate courses will be program-specific, many will be open to any graduate students enrolled in the Faculty, and space permitting, other graduate students from across the University. Some additional funding will be required for the additional teaching (this funding is available from the Faculty's base budget), but many of the additional courses will be taught by existing faculty members.

To enhance feasibility of the MScPhm program we plan to optimize resources by:

- Opening the new courses in this program to MSc and PhD students in our research-intensive programs, as appropriate. Opening these courses helps us to increase the complement of graduate courses in our Faculty – a priority as outlined in our academic plan, however, the clinical content-focused courses will only be open to students with a pharmacy degree.

In addition, we have on-going permission for graduate students enrolled in the Department of Pharmaceutical Sciences to take courses offered by the Faculties of Medicine and Engineering. We have confirmed that permission will be extended to students enrolled in the proposed MScPhm degree program.

The Faculty currently has seven Clinician Scientists appointed jointly with six TAHSN hospitals, all of whom have graduate appointments and supervise graduate students in our research-

intensive programs. These faculty are all interested in supervising students in this new program as well.

In addition, many of our other clinical faculty already contribute to the Faculty by teaching courses in our PharmD and PharmD for Pharmacists programs, and in the past coordinated courses in our former post-baccalaureate PharmD program. Many of these individuals have indicated their willingness to coordinate new proposed courses for the MScPhm program. This new program will include teaching by a number of status only faculty members who would like additional teaching.

13.1 Faculty Complement

We anticipate that primary supervisors for the MScPhm program will be our seven Clinician Scientists and other pharmacist/clinician researchers with graduate appointments. These clinical researchers conduct studies aimed at evaluating the efficacy/effectiveness and safety of medications and medication practices, including practice-site research aimed at advancing the role of the pharmacist in the healthcare system. They are all currently supervising graduate students in our research-intensive graduate programs and have expressed interest in participating in this program. In addition, other professors in our research-intensive Clinical, Social and Administrative Pharmaceutical Sciences field conduct research aimed at understanding the use of drugs and natural health products in the healthcare system, and the effects of drugs post-marketing in the "real world"; including economic, social, ethical, policy and professional implications. Some professors in this group also study the education of health professionals. Several of these professors have also expressed an interest in supervising the research project for MScPhm students for students interested in these areas. We are also establishing restricted graduate appointments for senior clinical faculty. Such faculty would co-supervise MScPhm students alongside research faculty with full graduate appointments. Therefore, we have the capacity to support students in the program in a variety of focused specialty areas and across several research disciplines.

Table 3: Faculty Complement (please list alphabetically) The table below lists faculty members who will be teaching and/or supervising in the MScPhm program. Additional qualified advanced clinicians based within our TAHSN partner hospitals may be added to the faculty list as we progress with this new graduate program.

Name	**Unit of Primary Budgetary Appt & %**	**Unit of other Budgetary Appt & % (if applicable)**	**SGS Faculty Membership Status** *(e.g., Associate/ Full)*	**Commitment to other programs** *(please list other programs in which the person routinely teaches / supervises)*	**Nature of contribut-ion to this program** *Course Instructor (CI), Research Project Supervision (RPS, Clinical or practice supervisor (C/PS).*
Tenured					
Zubin Austin	LDFP 100%	Not applicable	Full	MSc, PhD, PharmD	RPS, CI

Name	**Unit of Primary Budgetary Appt & %**	**Unit of other Budgetary Appt & % (if applicable)**	**SGS Faculty Membership Status** *(e.g., Associate/ Full)*	**Commitment to other programs** *(please list other programs in which the person routinely teaches / supervises)*	**Nature of contribut-ion to this program** *Course Instructor (CI), Research Project Supervision (RPS, Clinical or practice supervisor (C/PS).*
Heather Boon	LDFP 100%	Not applicable	Full	MSc, PhD, PharmD	RPS, CI
Suzanne Cadarette	LDFP 100%	Not applicable	Full	MSc, PhD, PharmD	RPS, CI
Lisa Dolovich	LDFP 100%	Not applicable	Full	MSc, PhD, PharmD	RPS, CI
Anna Taddio	LDFP 100%	Not applicable	Full	MSc, PhD, PharmD	RPS, CI
Tenure-Stream					
Sara Guilcher	LDFP 100%	Not applicable	Associate	MSc, PhD, PharmD	RPS, CI
Elise Paradis	LDFP 100%	Not applicable	Associate	MSc, PhD, PharmD	RPS, CI
Clinician Scientists					
Beth Sproule	LDFP 49%	CAMH 51%	Full	MSc, PhD, PharmD	RPS, CI, C/PS
Carlo DeAngelis	LDFP 49%	Sunnybrook 51%	Associate	MSc, PhD, PharmD	RPS, CI, C/PS
Lee Dupuis	LDFP 49%	Sick Kids 51%	Associate	MSc, PhD, PharmD	RPS, CI, C/PS
Marisa Battistella	LDFP 49%	UHN 51%	Associate	MSc, PhD, PharmD	RPS, CI, C/PS
Sandra Walker	LDFP 49%	Sunnybrook 51%	Associate	MSc, PhD, PharmD	RPS, CI, C/PS
Lisa Burry	LDFP 49%	Mt Sinai 51%	Associate with Restrictions	MSc, PhD, PharmD	RPS, CI, C/PS
Lisa McCarthy	LDFP 49%	Women's College 51%	Associate with Restrictions	MSc, PhD, PharmD	RPS, CI, C/PS
Status Only					

Name	**Unit of Primary Budgetary Appt & %**	**Unit of other Budgetary Appt & % (if applicable)**	**SGS Faculty Membership Status** *(e.g., Associate/ Full)*	**Commitment to other programs** *(please list other programs in which the person routinely teaches / supervises)*	**Nature of contribut-ion to this program** *Course Instructor (CI), Research Project Supervision (RPS, Clinical or practice supervisor (C/PS).*
Scott Walker	Sunnybrook 100%	LDFP	Full	MSc, PhD, PharmD	RPS, CI, C/PS
Muhammad Mamdani	SMH 100%	LDFP	Full	MSc, PhD, PharmD	RPS, CI
Tara Gomes	SMH 100%	LDFP	Associate	MSc, PhD, PharmD	RPS, CI
Brian Hardy	Sunnybrook 100%	LDFP	Associate	MSc, PhD, PharmD	RPS, CI, C/PS
Winnie Seto	SickKids 100%	LDFP	Associate	MSc, PhD, PharmD	RPS, CI, C/PS
Emmanuel Papadimitropoulos	Eli Lilly Canada Inc. 100%	LDFP	Associate	MSc, PhD, PharmD	RPS, CI
Alice Tseng	UHN 100%	LDFP	Associate with Restrictions	MSc, PhD, PharmD	CI, C/PS

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

Students in this program are not eligible for a stipend.

All of the students in this program will be pharmacists; some may continue to work while enrolled in the program. The program is designed to be very flexible with a number of courses offered with online components or scheduled in the morning or

late afternoon/evening to facilitate students' ability to continue to work while enrolled.

In addition, the Faculty is currently fundraising for dedicated funding for pharmacists who require support to enroll full-time in our graduate programs (including this one) and/or for students in this program who may benefit from support while in clinical rotations during which it may be difficult to maintain other professional work.

13.4 Space/Infrastructure

No new space or infrastructure is required to initiate the MScPhm program. Classroom space will be allocated to MScPhm courses from existing space at the Leslie Dan Faculty of Pharmacy. Student supervisors will provide student work space. Expertise regarding the development and implementation of e-learning resources has been cultivated at the Leslie Dan Faculty of Pharmacy for the post-baccalaureate PharmD and PharmD for Pharmacists programs. This expertise will be leveraged to support the MScPhm program.

14 Quality and Other Indicators

The proposed new program is situated within the largest Faculty of Pharmacy in Canada and home to a large concentration of clinical pharmacists with advanced practice, therefore, we are more than prepared to mount such a program.

We currently have seven Clinician Scientists associated with the Faculty in conjunction with our TAHSN partners, all of whom have graduate appointments, as well as additional faculty members who are clinical pharmacy practice leaders in their TAHSN and other home sites. Further, we have several other status clinical faculty with graduate appointments. We have particular strength in clinical research which explores and answers questions that arise in clinical practice. The focus is on enhancing the health and quality of life of individuals by optimizing the safety and effectiveness of medications. Areas include: clinical pharmacotherapy trials; clinical pharmacology; clinical pharmacokinetics; medication therapy management; adverse effect prevention and management and medication stewardship. With our current faculty expertise we are able to offer graduate work focused in a variety of clinical areas, such as, infectious diseases, cardiology, oncology, nephrology, mental health, pediatrics, and geriatrics.

In addition, our tenured and tenure stream faculty have expertise in a broad range of social and administrative pharmacy research, such as, pharmacoeconomics, pharmacoepidemiology, bioethics, global health, health services research, health economics, healthcare system organization, health/drug policy and reimbursement, sociobehavioural aspects of medication use, complementary and alternative medicine. These faculty members may also supervise or co-supervise the research project for MScPhm students. Thus, we are

leveraging the expertise of our faculty in clinical practice and research methods to expand the scope of pharmacy practice research projects offered to students.

15 Governance Process

	Levels of Approval Required
Consultation with Provost	April 10, 2018
Decanal and Provostial Sign-Off	April 13, 2018
	Faculty/Divisional Governance: Graduate Education Program Committee: April 20, 2018 Faculty Council: April 26, 2018
Submission to Provost's Office	
	AP&P: May 10, 2018
	Academic Board : May 31, 2018
	Executive Committee of Governing Council: June 14, 2018
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 Colleges Training and University (where the latter is required)."	
	Ontario Quality Council
	Submitted to MAESD (in case of new graduate degrees and programs, new diplomas)

Appendix A: Courses

Courses for MScPhm Program

- **1.5 FCE Mandatory Foundational Courses (NEW)**

Three mandatory courses presenting foundational material will be developed for this program related to:

- **PHMxxxxH Principles of Advanced Clinical Pharmacy Practice**: patient care, therapeutics, scholarly practice principles and application to practice (including critical appraisal of literature), health systems and pharmacy practice service models, expanding scopes of practice, medication safety and leadership skills.
- **PHMxxxxH Principles of Pharmacy Practice Research**: conducting pharmacy practice research, for example, human research ethics, Responsible Conduct in Research, regulatory requirements for research medication management, grant writing, project management, research design, and statistical approaches. Further, students will develop the concept for their major research project as a component of this course.
- **PHMxxxxH Principles of Pharmacy Practice Education**: preparing students for educational roles in developing and delivering pharmacy practice education (e.g., preceptorship, small group discussions, large group teaching) in university undergraduate and professional development programs.

The patient care and research foundational courses must be taken in the first year of the program.

- **1.5 FCE Elective Courses (EXISTING)**

Three elective courses may be selected from existing Department of Pharmaceutical Sciences courses and from graduate courses from other departments that accept our students:

- **PHM1133H: Special Topics In Pharmaceutical Sciences:** This course is designed to provide for the study of special topics in the broad area of pharmaceutical sciences, including all the fields encompassed within our Graduate Department. In addition to the existing sections, new sections may be developed according to faculty and student interests and needs. This will be a key mechanism for customizing the program for students. For example:
  - Preference-based Measures of Outcome Evaluation in Health (Section 0101) This course is to provide an introduction and overview of preference based measures to evaluate health outcomes and to support economic evaluations. The concepts of utility, health related quality of life (HRQoL) instruments, validation of HRQoL instruments and mapping algorithms will be introduced and discussed.
- **PHM1107H: Advanced Pharmacokinetics:** This course examines basic pharmacokinetic principles which describe the processes of absorption, distribution, and elimination of drugs. Topics include: LaPlace transforms, linear mammillary models, compartmental analysis, model-independent methods, single and multiple dosing, protein binding, drug clearance, first-pass effects, effect of route of administration physiological modeling, and metabolite kinetics. An introduction to data processing by computers is also included.

- **PHM1115H Special Topics in Radiopharmaceuticals II:** The purpose of this course is to enable the student to gain an appreciation of radiopharmaceutical design by examining two areas of radiopharmaceutical research: i) molecular imaging of cancer, and ii) radioimmunotherapy. This course will appeal to pharmaceutical sciences graduate students interested in radiopharmaceutical research but also imaging as a tool for cancer therapeutics as well as molecularly-targeted therapies for malignancies.
- **PHM 1124H: The Power and Politics of Global Pharmaceutical Policy:** This course is designed for students who are curious to learn about pharmaceutical public policy at the global level and also to explore the interrelationship between global and domestic health public policy issues, particularly those related to political economy and the governance of the pharmaceutical system. There are no prerequisites required but students are strongly recommended to have taken at least one social science or public health course given the ample reading and research requirements. Particular emphasis will be placed on how governments in different jurisdictions manage their public health responsibilities, particularly in terms of providing access to essential medicines and human development objectives, the tension between economic and health objectives, global trade obligations and their impact on access to medicines, and how pressure from special interest groups are relevant to pharmaceutical policy. Corruption issues will also be addressed. This course encourages a large amount of student participation through group work, discussion, presentations, and debate.
- **PHM1128H Introduction to Models and Methods of Research in Clinical, Social & Administrative Pharmacy:** This is an introductory course, providing students with an overview of the breadth of research in the clinical/social/administrative pharmacy through a series of seminars in which researchers at the Leslie Dan Faculty of Pharmacy will present their work and their perspectives on issues related to pharmacy practice and health care. Active teaching and learning strategies will be employed, and students are expected to contribute effectively to in-class discussions.
- **PHM1136H: Introduction to Biostatistics:** Currently being revised; New Course description TBA in Spring 2018.
- **PHM1137H Introduction to Qualitative Research Methods in the Health Sciences:** This course will introduce students to interpretive and critical qualitative research methods in the health sciences. The course is divided into three blocks: 1) Qualitative Research in Theory and Practice; 2) Data Collection and 3) Data Analysis. Students are expected to complete the readings (methods text and exemplar study) each week, and to come to class ready to participate in discussions. Each 3-hour class will use examples from the qualitative health sciences literature and from the instructor's own research to help connect information from methods texts into actual, published empirical articles. It will also combine didactic sessions with hands-on activities and small- and large-group discussions. Students may use this course to start writing their thesis proposals.

- **AGE2000H Principles of Aging:** This is a graduate-level review of the theories and theoretical foundations of gerontology. Gerontology deals broadly with aging in relation to older individuals, aging populations, and with age as a category of social structure.

This course will address a broad range of theories and concepts related to gerontology. The application of theories and concepts to practice, policy and research by the student is a major focus of this course. A critical thinking approach to learning will be encouraged.

- **HAD5746H Applied Health Econometrics:** Application of econometric methods to predict or forecast, to estimate treatment effects, and to assess the precision of predictions or treatment effects estimates in a variety of different scenarios distinguished by: The nature of the outcome variable (such as continuous, binary, ordered categorical); The research design (experimental or observational); The type of observations (cross sectional, time series or longitudinal); In the case of treatment effects estimation, whether treatment effects are the same for all observations or if they are heterogeneous
- **JNP1014Y Interdisciplinary Toxicology:** A survey course examining several contemporary topics in toxicology with emphasis on human/mammalian toxicology. Topics in the course may include: adverse drug reactions, acute poisonings, natural toxins, maternal-fetal toxicology, forensic toxicology, environmental chemistry, pesticides, dioxins, endocrine disruptors, regulatory toxicology, occupational toxicology, food toxicology, herbal products, alcohol, smoking, and drugs of abuse.
- **JRH1000H Introduction to Pharmacoepidemiology:** This joint course offered by the Graduate Departments of Pharmaceutical Sciences and Public Health Sciences provides an overview of foundational principles in the field of pharmacoepidemiology, from drug development and drug utilization research to drug safety and effectiveness studies that employ common pharmacoepidemiologic study designs. Students will develop foundational knowledge and skills in the field of pharmacoepidemiology. Each topic will include discussions that consider views from multiple perspectives from academia, government, healthcare professionals, industry and patients.
- **JRH124H Public Health Ethics:** This is an advanced level graduate seminar course in the ethics of public health. This is distinct from the ethics *in* public health and the course attempts to give students some familiarity with some of the most important ethical issues facing those engaged in public health research (health promotion, disease prevention, and epidemiological and biostatistical research). The course is based on seminar discussions of course readings, and case studies. Students will be able to identify, articulate and analyze ethical issues arising from public health, and to formulate critical and well-reasoned ethical arguments.
- **PAS3700H Multidisciplinary Aspects of Addictions:** This is a multidisciplinary course required of all students in the Collaborative Program in Alcohol, Tobacco and other Psychoactive Substances. The course aims at providing the student with the core knowledge and understanding of different behavioral, biological, historical, medical and socio-cultural perspectives regarding the use of psychoactive substances, including the epidemiology, etiology, treatment and prevention of problems associated with use.
- **PCL1004Y Graduate Course in Clinical Pharmacology:** This course aims at familiarizing the student with the rapidly growing field of clinical pharmacology. Graduates may pursue a career in this field in a hospital setting, in the pharmaceutical industry or regulatory agencies. The first part of the course focuses on clinical pharmacokinetics. The second part is devoted to selected topics in clinical pharmacology with special emphasis on how to design and interpret drug studies.

Note since the Leslie Dan Faculty of Pharmacy is a member of the Centre for Critical Qualitative Health Research, our graduate students have preferential access to all courses offered through the Centre: see **http://www.ccqhr.utoronto.ca/teaching/courses**

- **3 FCE Total (1.5 FCE PHMXXXX Clinical Practicum I, 1.5 FCE PHMXXXX Clinical Practicum II) (NEW)**
  Students will complete a mandatory total of 8 months clinical practicum at an approved clinical site in conjunction with their graduate supervisor. Scheduling can be flexible throughout the program based on student needs and clinical practice structure at the site. Clinical Practicum I will focus on enhancing and strengthening existing knowledge and skills with expanding complexity. Clinical Practicum II will focus on demonstration of graduation-level proficiency or mastery of the learning outcomes in this course.

- **3 FCE PHMXXXX Research Project (NEW)**
  Students will complete a mandatory original research project supervised by their graduate faculty supervisor. A total of 8 months of focused dedicated time is allotted to the research project. Scheduling can be flexible throughout the program.

Appendix B: Graduate Calendar Copy

Master of Science in Pharmacy

The MScPhm program is designed to train future academic clinical pharmacist leaders. As members of patient care teams and as pharmacy practice researchers, graduates of the MScPhm program will influence the provision of pharmaceutical care at the patient and population level. As teachers, they will shape the development of current and future pharmacists.

Admission Requirements

Applicants to the MScPhm program are admitted under the General Regulations of the School of Graduate Studies and must satisfy additional admission requirements of the Graduate Department of Pharmaceutical Sciences. Applicants must have status as a pharmacist, based on one of the following:

- Bachelor's degree in Pharmacy or PharmD degree or equivalent from an accredited (CCAPP) Canadian Pharmacy program or an accredited (ACPE) American Pharmacy program *or*
- license to practice pharmacy (any Canadian jurisdiction) *or*
- Bachelor's degree in Pharmacy or PharmD degree or equivalent from any International Pharmacy School AND successful completion of the Pharmacy Examining Board of Canada (PEBC) Evaluating Exam.

Applicants with pharmacy practice experience, including completion of a Year 1 Pharmacy Residency program, are preferred. Applicants must also have an equivalent of a University of Toronto B+ (77 - 79%) in the last two years of study and have identified a primary graduate supervisor for the program.

Program Requirements

- Each student's program will be tailored to suit the student's background and interests and will be planned in consultation with the supervisor and graduate advisory committee, with the approval of the graduate chair.
- The student must complete a minimum of 9.0 full-course equivalents (FCEs), of which 3.0 FCE are comprised of a clinical practicum and 3.0 FCE are comprised of a research project.
- Graduate advisory committee meetings will be held at minimum once each year of the program.
- One poster presentation will be given to all faculty and graduate students at Graduate Research in Progress (GRIP), and the student will attend GRIP yearly.
- Regular attendance at the graduate departmental and student group seminars for two years.
- An oral presentation of the completed research work will be submitted and assessed at an oral examination.

Program Length

6 sessions (2 years) full-time (typical registration sequence: F/W/S/F/W/S)**;
***Applicants may apply to the Fall session only.*

Time Limit

3 years full-time

Appendix C: Library Statement

University of Toronto Libraries Report for

MSc in Pharmacy, Faculty of Pharmacy, May 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**
	3/Toronto	**3/Toronto**	**3/Toronto**	**3/Toronto**	**4/Toronto**

[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

	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 & 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 & Research Support: Libraries play an important role in the linking of teaching and research in the University. To this end, information literacy instruction is offered to assist in meeting Pharmacy degree level expectations in the ability to gather, evaluate and interpret information. Librarians 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 will occur at a variety of levels for Pharmacy students and will be provided by the Pharmacy liaison librarian upon request. The Gerstein Library facilitates formal instruction integrated into the class schedule and hands-on tutorials related to course assignments. The Library, through its liaison librarians, customizes feeds of library resources which appear prominently in Portal/Blackboard course pages. The Gerstein Library provides online instruction in several databases as part of the online guide, *Searching the Literature: A Guide to Comprehensive Searching in the Health Sciences* (http://guides.library.utoronto.ca/comprehensivesearching). The Library also supports knowledge synthesis research through its consultation services and the guide, *Systematic & Scoping Reviews: Methodology Behind the Search Strategies* (http://guides.library.utoronto.ca/systematicreviews).

Collections: Selected college and campus libraries collect materials in support of Pharmacy; the largest collection of materials is centrally located in the Gerstein Library. 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 Pharmacy at the University of Toronto.

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

[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

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

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 Pharmacy, monographs are purchased in electronic form where possible, and the Library currently receives all current e-books directly from the following publishers: Springer, Elsevier, Taylor and Francis, Royal Society of Chemistry, and Wiley.

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 Pharmacy, the Library has digitized its monograph holdings published before 1923. These books are available without charge to any Internet user.

Key Databases: *Medline*, *Embase; International Pharmaceutical Abstracts*.

Special Collection Highlight: To provide access to the Pharmacy eResources the Library maintains a research guide at: http://guides.library.utoronto.ca/pharmacy. To facilitate flipped classroom instruction and distance learning the Library subscribes to online lectures from *Henry Stewart Talks* (https://hstalks-com.myaccess.library.utoronto.ca/biosci/) comprising over 400 lectures in the general category of Pharmaceutical Sciences and a series of 23 lectures on non-clinical testing for toxicity of pharmaceuticals. All students have access to drug and natural products information tools licensed by the Library, including *RxTx* from the Canadian Pharmacists Association; *Lexicomp Online*; *Micromedex*; and *Natural Medicines*. The Library also subscribes to the evidence-based clinical care tools *DynaMed Plus* and *UpToDate*.

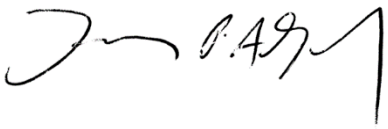
Prepared by:

Gail Nichol, Selector for Life and Health Sciences, May 29, 2017

Submitted by:

Larry Alford, Chief Librarian, University of Toronto Libraries

November 21, 2017



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. All these services combine to 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 counselling services provided both by the health and wellness centre and the Sexual Violence Prevention and Support Centre. In addition, a large number of wellness programs are provided, such as mindful meditation, workshops on coping skills and stress management.

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), **Indigenous 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 and volunteer opportunities in community settings), the Multifaith Centre (interfaith dialogue, events), and the Student and Campus Development (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.

In addition to the supports provided by the University community, the Leslie Dan Faculty of Pharmacy will support MScPhm students with:

- academic advising
- writing centre
- shared work/project space
- space for student activities such as meetings and social gatherings
- student life programs (e.g., orientation, graduate student association)

Similarly, supports may also be available via the student's clinical practice site.

School of Graduate Studies, Student Services [all campuses]

In addition to the above services available to all students, graduate student 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. Fully equipped meeting rooms, which can be booked by student groups when not used for Final Oral Examinations, are distributed across two locations, the newly renovated 63 St. George Street (home of SGS Student Services) and 65 St. George Street. Financial advising and wellness counselling services are also available at 63 St. George.

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. An additional lounge area for graduate students is now available at 63 St. George.

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.

The **Conflict Resolution Centre for Graduate Students** offers support to the University of Toronto graduate community in taking steps to prevent or resolve conflict.

It is a peer-led services that welcomes graduate students to connect confidentially with one of our trained G2G Peer Advisors to talk about options and strategies for addressing a concern and available university supports and resources.

The **Graduate Centre for Academic Communication** (GCAC) provides graduate students with advanced training in academic writing and speaking. By emphasizing professional development rather than remediation, GCAC helps students cultivate the ability to diagnose and address the weaknesses in their oral and written work. GCAC offers four types of instruction designed to target the needs of both native and non-native speakers of English: non-credit courses, single-session workshops, individual writing consultations, and website resources.

UNIVERSITY OF TORONTO

Appendix E: MScPhm Program Curriculum Map

The MScPhm Program Learning Outcomes are:

1. Understand the pharmacy practice principles and content knowledge that underpin the practice of an advanced medication therapy expert in a defined area of pharmacy practice. This includes relevant pharmacology, pharmacokinetics, therapeutics, medication stewardship and considerations specific to the defined patient population.
2. Demonstrate the skills required of a pharmacist who is a medication therapy expert in a defined area of pharmacy practice.
3. Identify, synthesize, interpret and integrate emerging scientific data into practice, research, and teaching.
4. Respond to patient care challenges by leading, independently or collaboratively, the generation of ideas, proposals, solutions and arguments (e.g., new clinical or educational programs).
5. Lead or collaborate on the development, implementation, and interpretation of defined research projects.
6. Apply principles of pedagogy to communicate ideas and scientific evidence in didactic and experiential settings.
7. Demonstrate ethical leadership and decision-making in response to professional responsibilities

	Learning Outcomes*						
Program Requirements	1	2	3	4	5	6	7
Principles of Advanced Clinical Pharmacy Practice Course	R→D		R→D	R→D			R→D
Principles of Pharmacy Practice Research Course			R→D	R→D	R→D		R→D
Principles of Pharmacy Practice Education Course			R→D	R→D		R→D	R→D
Elective Courses	*See below for themed examples.*						
Clinical Practicum I II	 D A	 D A	 D A	 D D		 D A	 D A
Research Project			A	A	A	A	A
Seminars and Presentations			D→A			D→A	

*R = reinforcing, D = developing, A = advanced

Elective Courses – can be themed

	Learning Outcomes*						
Program Requirements	1	2	3	4	5	6	7
Example Theme – Clinical focus Elective 1 Elective 2 Elective 3	D→A		D→A	D→A			
Example Theme – Teaching focus Elective 1 Elective 2 Elective 3			D→A	D→A		D→A	
Example Theme – Leadership focus Elective 1 Elective 2 Elective 3				D→A	D→A		D→A

Levels

Reinforcing

This learning outcome, first introduced in the entry-to-practice pharmacy degree, is explicitly strengthened in this course; teaching and learning activities focus on review of basic concepts and skills.

Developing

The learning outcome is explicitly developed in this course; teaching and learning activities focus on enhancing and strengthening existing knowledge and skills with expanding complexity.

Advanced

Students explicitly demonstrate graduation-level proficiency or mastery of the learning outcome in this course; teaching and learning activities focus on the use of content or skills at multiple levels of complexity.

Appendix F:Appraisal Report

New Program Proposal
Appraisal Report
Terms of Reference
Master of Science in Pharmacy (MScPhm)

Reviewers are asked to provide an Appraisal Report evaluating the standards and quality of the proposed program using the evaluation criteria identified below.

Report Summary

Prepared and Submitted on January 29, 2018 by:

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Program evaluation criteria

1 Objectives

- Consistency of the program with the institution's mission and unit's academic plans
- Clarity and appropriateness of the program's requirements and associated learning outcomes in addressing the academic division's graduate Degree Level Expectations
- Appropriateness of the degree or diploma nomenclature

The Leslie Dan Faculty of Pharmacy proposes a new graduate program, Master of Science in Pharmacy (MScPhm), that is intended to prepare advanced pharmacy practice leaders with expertise in education and research. This new program is consistent with the strategic plan of the Faculty in that this program will advance educational programs to develop leaders and these leaders will then impact pharmacy practice through innovative patient care programs, research and services. These goals align with the mission of the Leslie Dan Faculty of Pharmacy.

The program requirements are clear and the learning outcomes are explicit.

The MSc degree is appropriate for the stated learning outcomes, with the promise to develop clnical practice leaders wherein pharmacists who use science/evidence in clinical decision-making, translate research into practice and contribute to research that improves patient outcomes.

2 Admission requirements

- Appropriateness of the program's admission requirements for the learning outcomes established for completion of the program
- Appropriateness of any alternative requirements for admission into the program such as minimum grade point average or additional languages or portfolios, along with how the program recognizes prior work or learning experience

In terms of the admission requirements, we recommend that terminology such as "Pharmacy practice experience, including a year 1 residency, is preferred" be used to more clearly convey the type of desired candidates.

Prior work or experience will be examined during the admission process, but it will not be considered as part of the degree requirements and no credits will be provided for prior learning.

One criterion for admission is "identification of a primary supervisor" and this criterion is consistent with the on-going graduate admission policies of the Leslie Dan Faculty of Pharmacy. All graduate program applications are screened administratively for meeting the admission requirements. As well, supervisors who wish to accept students are posted on a publicly

available website and potential students contact the faculty for discussion. Faculty then determine which students are admitted.

A pool of a sufficient number of applicants is expected, based upon the Faculty's sustained and successful post-baccalaureate PharmD, which has been phased out because of the new entry-to-practice PharmD program. They expect over the first years of the program to recruit pharmacists in practice who would like to advance their skills in education, practice and research to become clinician leaders. By keeping the admission requirements broad, they also may accpet exceptional candidates straight from their entry-to-practice PharmD.

3 Structure

- Appropriateness of the program's structure and regulations to meet specified program learning outcomes and Degree Level Expectations
- Rationale for program length in order to ensure that the program requirements can be reasonably completed within the proposed time period
- The extent to which the program structure and delivery methods reflect universal design principles and/or how the potential need to provide mental or physical health accommodations has been considered in the development of this program.

The program's structure and regulations meet the program learning outcomes and degree level expectations. Some clarifying information about the role of supervisors and the graduate advisory committee would be helpful. For example, either text or figure could be added to explain that supervisors may be one of the 7 clinician scientists or co-supervisors could be a team comprised of a research faculty and senior clinician based in clinical practice. The role, composition and frequency of meetings with the Graduate Advisory Committee should be more explicitly laid out.

The rationale for the duration of the intended program (two years) is commensurate with the educational learning outcomes, and three years is allowed for unforeseen circumstances. Students would have the ability to transition to a PhD program after completion of this degree, consistent with current Faculty policies.

One important theme of the program is its flexibility. Courses may be offered on weekend, evenings or online to accomodate those who maintain a part-time job. Of note, the clinical practicum and the research project can be completed concurrently or sequentially and the approach is dependent upon the student, supervisor/s, site and nature of the project itself. This flexibility offers opportunity for students to continue in their employment, to avoid financial hardships. However, during the 8 months of the practicum, it is recommended that students will not work part-time. Importantly, the Faculty has access to resources for physical and mental health of students, and there are policies/procedures to manage difficulties that may arise during educational programs.

Due to the flexible nature of this program, we recommend presenting a few scenarios of schedule/structure that are anticipated so the interested students have an idea of the layout of the program over a 2 year span.

4 Program Content

1. Ways in which the curriculum address the current state of the discipline or area of study
2. Identification of any identified unique curriculum or program innovations or creative components and their appropriateness
3. For research-focused graduate programs: Clarity of the nature and suitability of the major research requirements for degree completion
4. Evidence that each graduate student in the program is required to take all of the course requirements from among graduate level courses

The curriculum addresses an advanced level of pharmacy practice and professional development, in that it focuses upon advanced clinical practice, educational pedagogy and research. The mandatory foundational courses, whose content needs to be developed, will integrate these topics within a leadership framework to develop faculty and/or clinical practice leaders. We recommend that content related to critical appraisal of the literature and expectations for teaching activities (preceptorship, small group discussion, large group teaching etc…) should be mentioned and significantly developed.

Also students may elect to take existing graduate courses at the Leslie Dan Faculty of Pharmacy or in other graduate departments, if applicable and appropriate as per their supervisor. This will also provide an opportunity for the Faculty to develop additional offerings of new and specific Pharmacy graduate courses.

In considering the research project, it would be advantageous that the project proposal or some of the aspects are developed during didactic course/s so that students are ready to finalize and execute when starting their research component of the program. This would minimize delays associated with research and ethics board approval. As this is a new program, it is advised that a structure/rubric be used to ensure that the projects across students are similar in scope, as they will have different faculty/types of faculty in supervisory roles. As well, it would be in the student' best interest that a process for assessing project feasibility over this finite time frame be developed and implemented. We note that the graduate advisory committee may be able to serve this role. It is also strongly recommended that the graduate advisory committee meet each term with the student and supervisor, as the minimum is too infrequent.

There is no explicit information about the minimum competencies for clinical practicum assessment, and we assume that this will be completed after the program is approved. We make assumption based upon the Faculty's prior work with entry-to-practice PharmD and post-

baccalaureate PharmD learning outcomes and competencies as well as nationally developed Year 1 Residency and Year 2 Residency competencies.

The MScPhm program is innovative in that it will develop leaders with advanced clinical acumen and foundational knowledge and experience in teaching and research. This program is ideal to prepare individuals for clinical faculty positions. In addition, the program is innovative because it has been developed in strong collaboration with the TAHSN hospitals, and this program meets the market needs of these organizations. It is likely that the program can expand to other healthcare settings in the future, i.e., public health or community health.

There is evidence in the program proposal that all students will complete the graduate courses as well as the clinical practicum and the research project.

5 Mode of Delivery

- Appropriateness of the proposed mode(s) of delivery (distance learning, compressed part-time, online, mixed-mode or non-standard forms of delivery, flex-time options) to meet the intended program learning outcomes and Degree Level Expectations

The proposed modes of delivery are consistent with the educational outcomes of the program and its flexible nature. The foundational courses are not developed, however these courses will include a variety of modes such as face-to-face seminars, on-line learning modules, in class discussion, small group workshop, and others allowing for students who work part-time to have flexibility in their class and work schedules.

This wide range of delivery of content is consistent and compatible with the expected applicant who desires to maintain a part-time position (up to 10 hours per week). As stated, we anticipate that no part-time work can be accommodated during the 8 month, full-time practicum.

6 Assessment of Teaching and Learning

- Appropriateness of the proposed methods for the assessment of student achievement of the intended program learning outcomes and Degree Level Expectations
- Completeness of plans for documenting and demonstrating the level of performance of students, consistent with the academic division's statement of its Degree Level Expectations

A variety of methods of evaluation will be used from written examinations, oral presentations, written project report and oral examination. The required foundational courses will have grading standards appropriate for graduate level requirements (expected average score ≥ B)

The Practicum component of the program will address a variety of learning outcomes at the developing and advanced levels. Assessment of patient care, education and communication competencies of this component will require developing rubrics that are aligned with entry-to practice PharmD, the Post-baccalaureate PharmD and the Year 1 and Year 2 residency rubrics. Meeting the minimum requirement for the educational outcomes of the developing and advanced levels of the Practicum will need to be determined. We note that the requirement will be graded as a pass or fail.

As these graduates will be expected to hold leadership roles in the provision of education to pharmacy students and other health care providers, this component of the program needs to be slightly more detailed. Course content and teaching/education expectations need to be mentioned and include activities such as precepting and formal teaching to small groups and larger groups. This needs to be documented and the appropriate tools for assessing the students be developed.

For the Research component, an oral presentation at the Graduate Research in Progress (GRIP) and presentation of a poster are appropriate expectations. However, we recommend that a written manuscript that follows recommendations for authors of the identified journal of submission should be given to the Graduate Advisory Committee upon finalizing the research component.

As stated earlier, the Graduate advisory committee terms of reference (composition, role and frequency of meetings) needs to be expanded and clearly delineated. We suggest frequent meetings (once per semester) as a way to assess progression of the candidate: 6 times per 2 years.

7 Resources

- Adequacy of the administrative unit's planned utilization of existing human, physical and financial resources, and any institutional commitment to supplement those resources to support the program
- Participation of a sufficient number and quality of faculty who are competent to teach and/or supervise in the program
- Adequacy of resources to sustain the quality of scholarship and research activities of graduate students, including library support, information technology support, and laboratory access
- Faculty have recent the research or professional/clinical expertise needed to sustain the program, promote innovation and foster an appropriate intellectual climate
- Where appropriate to the program, financial assistance for students will be sufficient to ensure adequate quality and numbers of students
- Supervisory load distribution and the qualifications and appointment status of supervisors

Currently, there is an administrative/support structure in place that is part of the experiential program of the Leslie Dan Faculty of Pharmacy that will oversee placement of students during the clinical practicum. In addition, there are resources located at each of the clinical sites to oversee placements of APPE students, Year-1 residents and Year-2 residents. No additional resources are required for placement of the MScPHM students.

The three mandatory foundational courses will need to be developed with existing Faculty resources. To be comprehensive and across disciplines, these courses will need to be developed with significant collaboration from a variety of Faculty. Such course development requires time, energy and effort, and accompanied workload needs to be recognized beyond simply the numbers of hours taught in a given course.

There is a sufficient number of resources available at the Faculty and at the clinical sites to make this program a reality. Currently, there are 7 clinical scientists located at different institutions of the TAHSN who are expected to be the primary supervisors of the MScPHM students. In addition, there can also be co-supervisors between Clinical Faculty and Research Faculty. The expected supervisors are highly trained and qualified individuals.

Existing resources such as library, information technology and laboratory access, if needed, are sufficient to support the scholarly environment.

From our discussion with the clinical sites, there are no additional resources required from their perspective to precept and supervise these students. They expect minimal impact for precepting an additional student over the course of their 8 months practicum. They do not foresee any competition between the other professional pharmacy programs (entry-to-practice PharmD, Year 1 and Year 2 residencies) and the MScPHM program for student placement.

The impact of this new program on the development of Year-2 residency by the clinical sites remains to be determined. These programs are contingent upon the Hospital Pharmacy operational budgets and independent of the Leslie Dan Faculty of Pharmacy.

Financial aid is being addressed for students during their 8 months Clinical Practicum as they will not be able to continue to work part-time during this period.

8 Quality and Other Indicators

- Quality of the faculty (e.g., qualifications, research, innovation and scholarly record; appropriateness of collective faculty expertise to contribute substantively to the proposed program)

- Program structure and faculty research that will ensure the intellectual quality of the student experience
- The extent to which the program has integrated any elements that enhance the diversity of its curriculum, students or teaching staff.

The collective faculty of the Leslie Dan Faculty of Pharmacy and their hospital partners in this program have the expertise, engagement and the qualifications required for this new Program. The students from this program will fill the need for clinician leaders that the TAHSN and other institutions are demanding.

Assessment of the program effectiveness will occur based on feedback from students, faculty and stakeholders through continuous quality improvement. The Faculty will develop a program evaluation logic model to guide the program evaluation plan. Considering that most of the clinical and research training of these students will occur outside of the Leslie Dan Faculty of Pharmacy, it is logical to follow the impact of this new program on their clinical sites and their resources (# residency positions offered, # APPE students placed, physical space, etc…), not just the Faculty of Pharmacy.

Appendix G: Administrative Response to Appraisal Report

UNIVERSITY OF TORONTO
LESLIE DAN FACULTY OF PHARMACY

OFFICE OF THE DEAN

April 13, 2018

Sioban Nelson
Vice-Provost, Academic Programs
University of Toronto

Dear Sioban,

Re: Response to the Appraisal Report prepared and submitted by Drs. Farris and Perreault on January 29, 2018

Please find below my administrative response to the appraisal report of Dr. Karen B. Farris, University of Michigan and Dr. Marc M. Perreault, Université de Montréal. The appraisal visit took place on January 24, 2018. I would like to thank the appraisers for their thoughtful questions and constructive recommendations which have helped us to clarify and further strengthen our new MScPhm program proposal.

The appraisers' very positive overall reaction to our MScPhm program proposal gives us confidence that this program will fill a key gap in pharmacy education. The appraisers note in their report that the new program fits very well with our strategic plan. They identified that MScPhm program design is innovative and will enable us to develop advanced clinical leaders with foundational knowledge in teaching and research. The appraisers indicate that the leaders who graduate from this program are likely to impact pharmacy practice through innovative patient care programs, research and services. The appraisers comment that, "this program is ideal to prepare individuals for clinical faculty positions. In addition, the program is innovative because it has been developed in strong collaboration with the TAHSN hospitals, and this program meets the market needs of these organizations."

The appraisers also provided a number of very constructive recommendations especially with respect to areas of the proposal that could be clarified with additional details or examples, as well as some minor changes that will help to strengthen our intended outcomes. The remainder of this letter provides specific responses to these recommendations.

1. **Admission requirements**

In terms of the admission requirements, we recommend that terminology such as "Pharmacy practice experience, including a year 1 residency, is preferred" be used to more clearly convey the type of desired candidates.

We have revised the admission requirements as suggested (See Section 7) by including a clear

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statement that pharmacy practice experience, for example the completion of a Year 1 Pharmacy Residency, is preferred prior to admission.

2. **Structure**

a. *Due to the flexible nature of this program, we recommend presenting a few scenarios of schedule/structure that are anticipated so the interested students have an idea of the layout of the program over a 2 year span.*

b. *Some clarifying information about the role of supervisors and the graduate advisory committee would be helpful. For example, either text or figure could be added to explain that supervisors may be one of the 7 clinician scientists or co-supervisors could be a team comprised of a research faculty and senior clinician based in clinical practice.*

The flexibility of the program is a key design feature and we have added a diagram portraying examples of different program schedules in section 9 to illustrate this in more detail. For example, students may complete the program by choosing to spend the first 8 months doing all their course work, followed by 8 months of clinical practicum and spend the final 8 months on their research projects. Alternatively, they could spend all 24 months doing a blend of courses, clinical and research approximately one third of their time throughout the program. Another example would be that students could spend more time in the first year of the program focusing on course work, and more time on their research project in the second year of their program with their clinical practicum spread evenly throughout the entire program. All of these options are possible. The only requirement is that two of the required foundational courses: Patient Care and Research, must be completed in the first year of the program as they are seen to inform the other program activities and expectations.

To clarify the role of the supervisors and advisory committee, we have added a description of the Graduate Advisory Committee in section 9 and also added the requirement that the Graduate Advisory Committee will meet at least twice a year. Table 3 in section 13.1 (Faculty Complement) describes current faculty who will be teaching and/or supervising in the MScPhm program. In addition to these faculty members, senior clinicians may be eligible for restricted appointments in the School of Graduate Studies and would therefore be eligible to co-supervise MScPhm students. We have revised section 13.1 to include a description of this scenario. As part of our annual review of faculty performance, we are actively identifying senior clinicians with advanced clinical practices who may be interested and qualified to participate in the MScPhm as course instructor and/or co-supervisors. These faculty members will be encouraged to apply for restricted graduate appointments during the 2018-19 academic year.

3. **Program Content**

The appraisers made several recommendations related to the program content. They are:

a. *We recommend that content related to critical appraisal of the literature and expectations for teaching activities (preceptorship, small group discussion, large group teaching etc...) should be mentioned and significantly developed.*

b. *In considering the research project, it would be advantageous that the project proposal or some of the aspects are developed during didactic course/s so that students are ready to finalize and execute when starting their research component of the program. This would minimize delays associated with research and ethics board approval.*
c. *As this is a new program, it is advised that a structure/rubric be used to ensure that the projects across students are similar in scope, as they will have different faculty/types of faculty in supervisory roles.*
d. *As well, it would be in the students' best interest that a process for assessing project feasibility over this finite time frame be developed and implemented. We note that the graduate advisory committee may be able to serve this role.*
e. *There is no explicit information about the minimum competencies for clinical practicum assessment, and we assume that this will be completed after the program is approved. We make assumption based upon the Faculty's prior work with entry-to-practice PharmD and post baccalaureate PharmD learning outcomes and competencies as well as nationally developed Year 1 Residency and Year 2 Residency competencies*

We agree with these recommendations. For example, critical appraisal of the literature has been explicitly added to the description of the Advanced Clinical Pharmacy Practice course. In addition, the variety of teaching activities and details regarding the expectations of the research project will figure prominently in the full course outlines of the Pharmacy Practice Education and Pharmacy Practice Research courses. The course outlines for the clinical practicum will also include the identification of specific competencies expected upon completion. These will be developed based on our extensive experience in developing and assessing experiential education outcomes as part of our newly implemented PharmD curriculum in which the entire fourth year consists of 35 weeks of experiential learning courses.

The MScPhm Program co-leads are currently in the process of finalizing course leads for each new course and plan to have all course outlines developed and reviewed via the normal process for approving graduate courses at the Faculty and the University during the 2018/19 academic year.

The linking of the required courses to the development of the research project proposal has been clarified in Section 8 under the "Summary of Progress for MScPhm." In addition, the MScPhm program (co-)lead(s) will develop a rubric for research project assessment and ensure that all students and their supervisors use it to select a suitable project. Similar rubrics have been developed for our PharmD Program third year elective research course and fourth year non-direct patient care research and project rotations. We agree that each student's Graduate Advisory Committee will be instrumental in guiding project selection with an eye to feasibility. In addition, the MScPhm program (co-)lead(s) will discuss project scope with supervising faculty and actively seek to achieve parity in terms of project scope with respecting the desires of students. (See section 8)

5. **Mode of Delivery**

The reviewers identify a concern that students be counselled that they not seek additional work

during the 8 months of the practicum. Based on our experience with clinical practica in our PharmD and PharmD for Pharmacists programs, we concur that these experiential educational opportunities are very intensive and students learn the most when they are fully immersed in the experience. The recommendation that students plan their schedules so that they will not need to work part time during their practica will be highlighted during the admission process (to help candidates make informed decisions about the program), as well as in orientation and clinical practica course materials. Students will be encouraged to work with their supervisors to customize their program schedules (see discussion of flexibility of scheduling program requirements in Section 9 of the proposal) in a manner that best fits their needs.

6. **Assessment of Teaching and Learning**
   a. *As these graduates will be expected to hold leadership roles in the provision of education to pharmacy students and other health care providers, this component of the program needs to be slightly more detailed. Course content and teaching/education expectations need to be mentioned and include activities such as precepting and formal teaching to small groups and larger groups. This needs to be documented and the appropriate tools for assessing the students be developed.*
   b. *For the Research component, an oral presentation at the Graduate Research in Progress (GRIP) and presentation of a poster are appropriate expectations. However, we recommend that a written manuscript that follows recommendations for authors of the identified journal of submission should be given to the Graduate Advisory Committee upon finalizing the research component.*

We agree with both these recommendations and have provided more detail in Section 8 of the proposal. For example, the course outline for the required Principles of Pharmacy Practice Education will identify clear objectives and expected competencies with respect to knowledge of educational theory, serving as a preceptor for students on experiential placements, leading small group discussion and large group teaching. Course assignments and assessments will be designed to directly assess these competencies. There is currently a Teaching and Learning Elective course that is available to our PharmD students that provides an introduction to much of this content. The graduate level course will be modelled after the undergraduate elective, but will be designed to facilitate deeper exploration of educational theory and more advanced competency in a wider range of teaching settings.

7. **Resources**

The appraisers commented that the development of the 3 mandatory foundational courses will require significant resources.

The Leslie Dan Faculty of Pharmacy has all the resources needed to mount the proposed new program including the development of the three mandatory foundation courses. Development of additional graduate courses was identified as a priority for the Faculty recently in its Academic Plan (2021 Forward Together), and we have allocated dedicated resources (including time) to this

goal that can be leveraged for the development of these new foundational courses.

Course coordinators will lead the development of each foundational course during the 2018-19 academic year and the courses will be approved during that year. The time required to develop these courses will be counted in the teaching workload for each coordinator. The MScPhm program co-leads will work with all the coordinators to ensure the course outlines are developed to meet the desired goals and outcomes of the program as described in the proposal. All of our graduate faculty members are expected to teach within our graduate programs and we have a number of clinician scientists who are excited to fulfill this expectation by coordinating and/or teaching components of the required courses. Many of our graduate faculty members currently have light teaching loads and are eager to participate more to meet the expectations of their graduate appointments.

We have several graduate faculty members with graduate training in education and/or affiliation with the University of Toronto's Wilson Centre for Health Professions Education (an extra-departmental unit C in the Faculty of Medicine) who will form a working group to design the required Principles of Pharmacy Practice Education Course. With respect to the Principles of Pharmacy Practice Research Course, the Graduate Field of Clinical and Social Administrative Pharmacy, a field in the MSc and PhD in Pharmaceutical Sciences, has made the recommendation that a current course (PHM 1128: Introduction to Models and Methods of Research in Clinical, Social and Administrative Pharmacy) be revised to meet the needs of the new MScPhm program rather than developing a new course. Finally, the Principles of Advanced Clinical Pharmacy Practice course will be developed by the program co-leads leveraging similar content in our previous Post-Baccalaureate PharmD program. We will also collaborate with our colleagues in Public Health and the Rotman School of Management regarding several components of this course including the leadership skills.

In summary, we have sufficient faculty members with the skills, knowledge, time and interest to contribute to teaching and supervising students in the MScPhm program. Many of these faculty members taught in the now discontinued Post-Baccalaureate PharmD program and are excited to contribute to this new program. Our experience designing and delivering our new PharmD undergraduate program which includes a full year of clinical practicum as well as electives in areas such as research and education provides us with the experience to develop more advanced programming in these areas. In addition, we have faculty members with a wide range of expertise in clinical pharmacy practice that are looking forward to the opportunity to teach students at advanced levels to complement the more introductory and intermediate level teaching they are currently doing in our PharmD program. We have a growing number of faculty researchers interested in educational scholarship who will guide curriculum development for the new program and engage in ongoing quality assessment and improvement of the program as it is implemented. Given the relatively small number of students anticipated in the program, and changes currently being made to enhance the efficiency of our graduate administration with the introduction of electronic tracking tools, our current graduate office infrastructure will be sufficient to manage the administrative needs of the new program.

8. **Quality and Other Indicators**

Considering that most of the clinical and research training of these students will occur outside of the Leslie Dan Faculty of Pharmacy, it is logical to follow the impact of this new program on their clinical sites and their resources (# residency positions offered, # APPE students placed, physical space, etc...), not just the Faculty of Pharmacy.

We agree. The involvement of the clinical sites in the evaluation of the impact of the MScPhm program has been explicitly stated in section 11. This program is being developed with the full cooperation and engagement of our TAHSN hospital partners. Many of our clinical faculty members, including the MScPhm program co-Leads, are based in these clinical sites and we expect many of the graduates of this new program to find employment in these clinical sites. All aspects of the program design, ongoing evaluation and impact will be developed in collaboration with our clinical partners. The Appraisers noted this partnership with our TAHSN sites as a key strength of our proposal.

Thank you for the opportunity to submit a response to the Appraisers' Report.

Sincerely,

Heather Boon BScPhm, PhD
Professor and Dean

Appendix H: Response and Recommendation from Professor Sioban Nelson, Vice-Provost, Academic Programs

UNIVERSITY OF TORONTO

OFFICE OF THE VICE-PROVOST, ACADEMIC PROGRAMS

April 12, 2018

Heather Boon
Dean, Leslie Dan Faculty of Pharmacy
University of Toronto

Re: Appraisal Report, Proposed Master of Science in Pharmacy

Dear Heather,

I am very pleased to receive the appraisal of the proposed Master of Science in Pharmacy. Your administrative response to the appraisal nicely summarizes the report and highlights the specific suggestions made by the appraisers.

The appraisers recommended clarifying the role of the supervisor and graduate advisory committee, and suggested ways the committee could further support student success in the program. The appraisers also recommended the committee meet more than once a year. I note you have accepted all of these recommendations and they are reflected in the proposal. The appraisers made suggestions to develop rubrics for the research project and practicum. The Faculty will leverage its extensive experience and existing tools from the PharmD program to ensure this is done. The appraisers also commented that significant resources will be required to develop the new courses. You confirm that faculty and other resources are in place to mount the courses and you provide the plan for course development and approval.

I will be very pleased to recommend this new professional master's degree program to governance for approval, following approval at the Divisional level.

Sincerely,

Sioban Nelson
Vice-Provost, Academic Programs
cc.

Franco Guido, Administrative Assistant, Office of the Dean & Office of the CAO, Leslie Dan Faculty of Pharmacy
Robert Macgregor, Director, Graduate Department of Pharmaceutical Sciences, Leslie Dan Faculty of Pharmacy
Joshua Barker, Dean, Graduate Studies and Vice-Provost, Graduate Research and Education, SGS
Daniella Mallinick, Director, Academic Programs, Planning and Quality Assurance, Office of the Vice-Provost, Academic Programs
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