Senate

Wednesday, June 5, 2019 at 3:30 PM
Gilmour Hall, Council Room (Room 111)

AGENDA

NOTE: Members who wish to have items moved from the Consent to the Regular Agenda should contact the University Secretariat before the Senate meeting. Members may also request to have items moved when the Agenda is presented for approval.

Page

A. OPEN SESSION

OPENING REMARKS

1.   APPROVAL OF AGENDA – OPEN SESSION

CONSENT

2.   MINUTES OF PREVIOUS MEETING – MAY 15, 2019 (OPEN SESSION)

REGULAR

3.   BUSINESS ARISING

4.   ENQUIRIES

5.   COMMUNICATIONS

6.   REPORT FROM GRADUATE COUNCIL

        For Approval
           a. Changes to Cotutelle Policy
           b. Faculty of Business:
                i. Health Management - Change to Admission Requirements (M.H.M.)

        For Information
           c. Faculty of Business:
                i. Business Administration - Change to Course

Requirements and Calendar Copy (Ph.D.)

ii. Master of Finance - Change to Course Requirements and Calendar Copy

iii. M.B.A. - Change to Calendar Copy and Program Requirements

d. Faculty of Health Sciences:

i. Medical Sciences - Change to Transfer Exam Procedure (M.Sc.)

ii.Nursing - Change to Course Requirements and Calendar Copy (M.Sc.)

e. Graduate Council Working Group Reports - Cotutelle

f. Graduate Calendar Administrative Section Changes

7.   REPORT FROM THE BY-LAWS COMMITTEE

Report from the By-Laws Committee

a. Amendments to the Faculty of Science By-Laws (Approval)

b. Amendments to the Faculty of Business By-Laws (Approval)

c. Report from The Ad Hoc Committee to Review the By-Laws of the Senate of McMaster University that Govern Elections (Approval)

8.   REPORT FROM THE UNIVERSITY PLANNING COMMITTEE

Report from the University Planning Committee

a. Consolidated Budget (Information)

9.   REPORT FROM THE COMMITTEE ON APPOINTMENTS

Report from the Committee on Appointments

a. Recommendations of the Drafting Committee to Review Material Provided to External Referees for Promotion of Teaching-Stream Faculty (Approval)

10.   REPORT FROM THE PROVOST

Report from the Provost - By-Law Revision (Approval)

11.   OTHER BUSINESS

B. CLOSED SESSION

12.   APPROVAL OF AGENDA - CLOSED SESSION

CONSENT

13.   MINUTES OF PREVIOUS MEETING – MAY 15, 2019 (CLOSED SESSION)

14.   **REPORT FROM THE COMMITTEE ON APPOINTMENTS**

REGULAR

15.   **BUSINESS ARISING**

16.   **2019 GRADUANDS**

17.   **REPORT FROM THE EXECUTIVE COMMITTEE**

18.   **REPORT FROM THE COMMITTEE ON APPOINTMENTS**

19.   **REPORT FROM THE COMMITTEE ON HONORARY DEGREES**

20.   **OTHER BUSINESS**

REPORT TO SENATE

FROM THE

COMMITTEE ON ACADEMIC INTEGRITY

At its meeting on May 15, 2019, Senate considered the recommendation of the Committee on Academic Integrity for revisions to Section 18 of the Academic Integrity Policy, including the addition of two new offences. Members of Senate raised concerns that students might be penalized unnecessarily because of these new clauses and felt that they should be referred back for clarification.

On May 28, 2019, the Committee on Academic Integrity approved the following revisions to the Academic Integrity Policy and now recommends them to Senate.

Revisions to the Academic Integrity Policy

i.   *Change to existing offence r) to add the language "and/or login access credentials" after each instance where signature is located. Also, add the word "identity".*

ii.   *Addition of two new offences:*

        t) use online programs, social media and/or other such methods to enable inappropriate sharing of and/or distribution of academic work and/or test material for the purposed of obtaining unearned academic credit or advantage for oneself or others;

        u) fail to act responsibly and to take all reasonable precautions to protect personal McMaster University network login access credentials from being used by other persons.

Motion:
That Senate, on the recommendation of the Committee on Academic Integrity, approve the revisions to the Academic Integrity Policy effective July 1, 2019 as circulated.

Please note the full policy can be found at https://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf

Senate: FOR APPROVAL
June 5, 2019

Policy Changes

Academic Dishonesty Offences – pages 6 - 7

Change to existing offence r):

Current language

r) provide a false signature for attendance at any class or assessment procedure or on any document related to the submission of material where the signature is used as proof of authenticity or participation in the academic assessment, and,

Propose to add the language "and/or login access credentials" after each instance where signature is located. Also the word identity.

r) provide a false signature and/or login access credentials for attendance at any class or assessment procedure or on any document related to the submission of material where the signature and/or login access credential is used as proof of identity, authenticity or participation in the academic assessment, and,

_____

Two new offences

Section 18
It shall be an offence knowingly to:
a…s

1. *To address issues pertaining to Social Media use, sharing of academic work*

   t) use online programs, social media and/or other such methods to enable ~~Inappropriate inappropriate~~ sharing of and/or distribution of academic work and/or test material for the purpose of obtaining unearned academic credit or advantage for oneself or others ~~through the use of online programs, social media and/or other methods~~,

2. *To address issues pertaining to sharing or failing to protect login credentials*

   u) fail to act responsibly and to take all reasonable precautions to protect personal McMaster University network login access credentials from being used by other persons.

June 2019

TO: Senate

FROM: Susan Searls Giroux   Doug Welch
                Vice-Provost, Faculty   Vice-Provost and Dean of Graduate Studies
                Co-Chair, Quality Assurance Committee   Co-Chair, Quality Assurance Committee

RE: 2016-18 IQAP Cyclical Program Reviews

INTRODUCTION

The purpose of Institutional Quality Assurance Process (IQAP) program reviews is to assist academic units in clarifying their objectives and to assess curriculum and pedagogical policies, including desirable changes for future academic development. Although the primary objective for these reviews is the improvement of our academic programs, the processes that we adopt are also designed to meet our responsibility to the government on quality assurance. The process by which institutions meet this accountability to the government is outlined in the Quality Assurance Framework (QAF), developed by the Ontario Councils of Academic Vice-Presidents (OCAV). Institutions' compliance with the QAF is monitored by the Ontario Universities Council on Quality Assurance, also known as the Quality Council, which reports to OCAV and the Council of Ontario Universities.

The goal of McMaster's IQAP is to facilitate the development and continued improvement of our undergraduate and graduate academic programs, and to ensure that McMaster continues to lead internationally in its reputation for innovation in teaching and learning and for the quality of its programs. McMaster's IQAP is intended to complement existing mechanisms for critical assessment and enhancement, including departmental reviews and accreditation reviews. The uniqueness of each program emerges through the self-study.

All program review reports (including self-studies, review team recommendations, departmental responses, and dean's implementation plans) are submitted to McMaster's Quality Assurance Committee, a joint committee of Undergraduate and Graduate Councils. The Quality Assurance Committee assesses all submitted reports and prepares a Final Assessment Report (FAR) for each program review conducted during the previous academic session. Each FAR:

- Identifies significant strengths of the program;
- Addresses the appropriateness of resources for the success of the program;
- Identifies opportunities for program improvement and enhancement;
- Identifies and prioritizes the recommendations;

Undergraduate Council and/or Graduate Council will review this report to determine if it will make additional recommendations.

2016-2018 IQAP CYCLICAL PROGRAM REVIEWS

The following programs were reviewed during 2016-17:

<u>Undergraduate Programs</u>
Biochemistry
Biology

The following programs were reviewed during 2017-18:

<u>Undergraduate Programs</u>
Mathematics and Statistics
Medical Radiation Sciences

<u>Graduate Programs</u>
Biology MSc/PhD
Chemical Engineering M.A.Sc./Ph.D.
Globalization M.A.
Health Management M.H.M.
Materials Science Engineering M.A.Sc./M.Sc./Ph.D.
Psychology M.Sc./Ph.D.

FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Biochemistry (Undergraduate Program)

Date of Review: April 4 - 5, 2017

*In accordance with the University Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the **Biochemistry** undergraduate program delivered by Biochemistry and Biomedical Sciences. This report identifies the significant strengths of the programs, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.*

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Executive Summary of the Cyclical Program Review of the Undergraduate Biochemistry Program

In accordance with the Institutional Quality Assurance Process (IQAP), the Biochemistry program submitted a self-study in February 2017 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate programs. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers, both from Ontario and one internal reviewer were endorsed by the Dean, Faculty of Science, and selected by the Associate Vice-President, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on April 4 - 5, 2017. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost, Faculty, Dean of Science and Chair of the department and meetings with groups of current undergraduate students, full-time faculty and support staff.

The Chair of the program and the Dean of the Faculty of Humanities submitted responses to the Reviewers' Report (August 2017, June 2018). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

Strengths

In their report (May 2017), the Review team noted that the Biochemistry program is incredibly strong and provides students with an engaging and current curriculum with emphasis on all critical areas ranging from memorization of fundamental key concepts, development of critical thinking, exposure to "real world" lab experience, and development of "soft skills" including effective teamwork, public speaking, and reading primary literature. Many students in this program participate in laboratory research and a real strength of the program is the true excellence of the faculty and facilities they have access to.

The reviewers' further noted that the program's success is reflected by the fact that the students in the program are both largely happy and extremely loyal to the school. Many of the students choose to stay at McMaster for their graduate degrees and approximately 40% of the graduate students in Biochemistry were undergraduates from this program. This is a strong endorsement showing that both students and faculty are generally happy with the program.

Further highlights identified in the report include:

- On average, each year, 50-90 students have participated in research projects due to the increased interest and demand from students to obtain first-hand research experience. In order to facilitate and meet the increased demand, we opened up our restrictions to only being permitted to do research with a faculty member to any faculty member at the university who would supervise a project suitable for a degree in Biochemistry. And in spite of the opening of a new program in Biomedical Discovery and Commercialization which requires a thesis placement, we continue to accommodate large numbers of students in our research courses.
- The core biochemistry program is strong and emphasizes transferable skills and active learning
- The reviewers identified the teaching professors and support staff as a key strength to the program.

Areas of Improvement

In their report, the Review Team identified some recommendations for areas of improvement as outlined below.

- Increasing the number of course offerings in areas of interest to students, which will also facilitate scheduling for co-op students which always proves to be a challenge due to the distribution of the co-op terms. For this reason, we have included student representation on our undergraduate curriculum committee for the first time this year, and will continue with this very positive addition to the committee.

- Students expressed mixed/negative feelings about the launch of the Biomedical Discovery and Commercialization program three years ago. Some of the issues are no doubt growing pains and we have always been mindful of the divergence and perceived competition. These will be identified and resolved over time and with careful handling, Our goal is to have two unique programs but with equity wherever feasible.

- The reviewers suggested that we use focus groups in light of recent changes in the department and the introduction of the new Biomedical Discovery and Commercialization program. While we formerly conducted round table sessions at the end of each academic year, attendance was very low, and these sessions were abandoned, we propose that scheduling such groups in January will improve attendance and feedback.

- Career mentoring was formerly included in Biochemistry 2L06 upon its first few offerings, however, the course has changed with the introduction of a new instructor. This can be reintroduced to the course or another suitable area in our programming.

The Dean of the Faculty of Science, in consultation with the Chair of the program shall be responsible for monitoring the recommendations implementation plan. The details of the progress made will be presented in the progress report and filed in the Vice-Provost, Faculty's office.

Summary of the Reviewers' Recommendations with the Department's and Dean's Responses

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation
1.Top-to-bottom review of the program and curriculum in light of changes that have occurred over the past eight years	In light of changes in our faculty complement, and in line with discussions at the department educational retreat in November 2016, and the feedback from the IQAP review, we propose to develop suites of courses that would flow from level II through to IV that would align with our faculty expertise. Program learning objectives (PLOs) and course learning objectives (CLOs) will be integrated in course outlines across the curriculum in a format similar to the Faculty of Engineering and the School of Business with assistance and direction from the MacPherson Institute	Michelle MacDonald, Associate Chair, Undergraduate Studies Undergraduate Curriculum Committee Vivian Leong, Undergraduate Instructional Assistant	General overview and plan of curriculum changes to be completed by September 2018 for implementation. PLOs and CLOs to be integrated in course outlines by September 2018.
2.Expand course offerings	As above, in Recommendation #1, in light of discussions at the educational retreat in November 2016, and the feedback from the IQAP review, we propose to develop suites of courses that are of interest to students and in the areas of expertise of our faculty members	Michelle MacDonald, Associate Chair, Undergraduate Studies Undergraduate Curriculum Committee	Mount 1-2 additional courses on dean's permission for 2018-19 Propose 2-3 additional courses for 2019-20 during the next calendar cycle
3.Define how the older Biochemistry program fits in with the new BCD undergraduate program and work towards improving harmonization	We will continue to work closely with the BDC program administration to ensure consistency and equality to the extent that it is possible. We will ensure that there are unique and distinct aspects to each program through the re-introduction of annual focus groups with the Biochemistry program students. Student representation on the Undergraduate Curriculum Committee was introduced this year. These student impressions are no doubt growing pains and we have always been mindful of the divergence. These will likely be resolved over time and with careful handling,	Michelle MacDonald, Associate Chair, Undergraduate Studies	Ongoing Next student focus group will occur in January to optimize student turn out vs the end of the year.
4.Support teaching staff	Our complement of teaching faculty are dedicated to optimizing the student learning experience and creating an environment which supports teaching and research. Onboarding of new faculty members to the teaching roster in 2018-19 will alleviate some of the pressures on the teaching faculty.	Michelle MacDonald, Associate Chair, Undergraduate Studies	Ongoing
5.Improve the TA experience	The process for hiring TAs is transparent and involves a matching process which takes into consideration the optimal arrangement for students, while trying to meet the requests of the TAs and the instructors.	Michelle MacDonald, Associate Chair, Undergraduate Studies	Implementation for 2018-19

	Discussions have already taken place between the associate chair of undergraduate education and the associate chair of graduate education to create a mentoring program for graduate students and post-docs with an interest in teaching. The process will be piloted beginning in 2018-19.		
6.Move carefully toward establishing the program under a single administrative Faculty	Discussions have been ongoing for the past year between both faculties. Transition to the faculty of health sciences is dependent on an agreement between both faculties.	Karen Mossman, Chair	Ongoing. Possible transition to be initiated in 2018-19.

Dean's Response, Faculty of Science:

The Dean would like to thank the members of the review team for their report, including the recommendations and suggestions. Due to some turnover in the Office of the Dean of Science, the response of the Dean has been considerably delayed. The Dean would like to also thank Michelle MacDonald, Associate Chair of Undergraduate Studies, Department of Biochemistry and Biomedical Sciences for the thoughtful and comprehensive Program Response. The reviewers report highlighted several areas of strength in the undergraduate programs in Biochemistry. In particular, the structure of the curriculum with an innovative and team based second year lab course, feeding into a suite of upper year courses based on the Program learning objectives was highlighted, along with the strength and dedication of the teaching faculty and staff. The review team recommendations have provided areas for continued improvement and consideration and have all been incorporated into a plan for moving forward.

Due to the considerable delay between the development of the Program response and the submission of the Dean's response, the Dean was now able to provide more context for some of the specific recommendations.

Recommendation: "Move carefully toward establishing the program under a single administrative Faculty. This recommendation stimulated a series of conversations related to the administrative structure of the Biochemistry Program and any potential negative consequences of this administrative structure." The review team noted that the main concerns were the fact that "This means that the Chair is burdened with the task of evaluating and reporting on the activity of the teaching personnel to two different Deans. Students also complained about hidden inter-faculty barriers that occur that block them from taking many classes they are interested in."

The Dean agrees with the stated concern that any move would have to be very carefully planned and as such we have not moved beyond the initial discussion stage. Biochemistry students enter their program at Level 2 after successful completion of Level 1 Science. If the Biochemistry program was to move to the Faculty of Health Sciences, this would require students to switch Faculties or to enter into the Faculty of Science at level 1, thereby resulting in a very complex series of changes and potentially limiting student flexibility for program choice. Additionally, all of the student support services including Program advising and career and co-op services are provided through the Faculty of Science and would have to be developed from within the Faculty of Health Sciences should any change be advanced. As such, the Faculty has taken some steps to address the specific concerns of the review committee. While the Chair of Biochemistry and Biomedical Sciences still reports to governing bodies in both Faculties, changes have been forwarded to the tenure and promotion practices such that the cases for tenure, promotion (and permanence) will now only flow through the Faculty of Health Sciences, reducing one area of dual report. With respect to expansion of student offerings, one way this concern has been addressed is through the offering of 2 additional elective courses on "Dean's Permission" in 2018/2019 with more on-going curriculum changes to be approved in due course.

While not a specific recommendation, it was stated in the review team report that there was "A desire from students for more career mentorship. Some students stated that they chose the Biochemistry program because it kept their options open, but felt they were not truly aware of what options are available outside of graduate research or professional schools." This desire for additional career supports was also expressed by students in other programs in the Faculty of Science, and as such the Faculty is moving forward with plans to hire a "career integration officer", to assist with the development and implementation of career mentorship programming and supports for all undergraduate and graduate students in the Faculty of Science.

As the Faculty of Science moves forward with its commitment to excellence in undergraduate education, progress will be monitored with respect to the individual recommendations of the review team and engage in the highly valued partnership with the Faculty of Science in refining and delivering these outstanding undergraduate programs in Biochemistry.

Quality Assurance Committee Recommendation

McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow the regular course of action with a progress report and subsequent full external review to be conducted no later than 8 years after the start of the last review.

FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Biology Undergraduate Programs

Date of Review: March 27 - 28, 2017

*In accordance with the University Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the **Biology** undergraduate program delivered by The Department of Biology. This report identifies the significant strengths of the programs, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.*

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Executive Summary of the Cyclical Program Review of the Undergraduate Biology Program

In accordance with the Institutional Quality Assurance Process (IQAP), the Biology program submitted a self-study in February 2017 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate programs. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers, both from Ontario and one internal reviewer were endorsed by the Dean, Faculty of Science, and selected by the Associate Vice-President, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 27 - 28, 2017. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost, Faculty, Dean of Science and Chair of the department and meetings with groups of current undergraduate students, full-time faculty and support staff.

The Chair of the department and the Dean of the Faculty of Science submitted responses to the Reviewers' Report (June 2018). Specific recommendations were discussed, and clarifications and corrections were presented. Follow-up actions and timelines were included.

Strengths

In their report (May 2017), the Review team noted that The Department of Biology delivers a top-quality, lab-based undergraduate program on a minimal budget. The Department has done an impressive job with their recent innovative redesign of Bio1A03 (including the lab component), which incorporates many facets of evidence-based teaching that have been shown to improve learning in STEM courses. Indeed, the department utilizes multiple approaches to teaching in their Biology and Molecular Biology courses. While all courses except the research and co-op courses use lectures, the majority also incorporate innovative and creative approaches that include: clickers, class-based discussions, case studies, group work, collaborative learning, PBL, labs, field work, tutorials, and podcasts, just to name a few. In addition, these multiple approaches to student learning are key to developing student proficiency in many of the Biology department's PLOs that are aimed at higher levels of learning (e.g. PLOs 14 & 23), meeting undergraduate degree level expectations (e.g. PLOs 22-24 & 40) and prioritizes accessibility and removal of barriers to learning. Students are assessed through a variety of methods, including tests, exams, term papers, oral presentations, group projects, case studies, critical reviews, and experiential learning. All of these assessments are effective ways of measuring student learning and the wide variety of types of assessments used represent best pedagogical practice. These methods of assessment of student achievement of PLOs are thorough, appropriate and effective.

The Biology programs are doing an excellent job of meeting or exceeding departmental PLOs and helping the university meet its undergraduate degree learning expectations and overall mission. As part of the self-study, the department has performed a thorough critical analysis of PLO achievement in its programs, and has already identified areas for improvement along with strategies for doing so. The reviewers agree with the department's self-study and areas targeted for improvement include: encouraging more students to enroll in existing laboratory and field courses thereby increasing proficiency in PLOs 25-28 and 33-35, increasing the number of opportunities for students to work with statistics in biology, as well as opportunities for increased exposure to programming as it relates to the modern study of biology. All of these target areas came up in our discussions with students and faculty. The department has already been extremely proactive in implementing new cell biology labs in several key courses as well as securing funding for equipment for a new course in Experimental Approaches in Cell Biology (3D03). These laboratory and equipment improvements will certainly help to increase proficiency in microscopy and cell biology-related PLOs as well as experimental design and lab skill PLOs for the next cohort of biology graduates. A final area of improvement identified involves ethics (PLO 41). Ethical thinking is embedded within several program courses, but it may be that it needs to be made more explicit to students.

Further highlights identified in the report include:

- top-quality, lab-based undergraduate programs on a minimal budget
- courses incorporate many facets of evidence-based teaching that improve learning in STEM courses
- many courses use innovative approaches including blended learning (Bio1A03, Bio2B03) clicker, case-studies, in-class discussions, group work, PBL, labs, field work, podcasts, etc
- Biology is doing an excellent job at meeting or exceeding departmental PLOs that align with Ontarios' Undergraduate Degree Level Expectations
- Biology has been very successful in obtaining FWI, ASF and other funding to improve undergraduate education

Areas of Improvement

In their report, the Review Team identified some recommendations for areas of improvement As in many Departments across the University system, there is an aging faculty and an uneven demographic across sub-disciplines. There has been considerable reduction in Plant Biology, Microbiology and Physiology faculty in recent years, to the point where these major areas of Biology are only poorly represented. This erosion of expertise in some core areas of Biology is a concern that cannot be left unaddressed for long before it will impact program quality.

A recurring theme amongst nearly all our discussions was the Life Sciences undergraduate program. A common perception is that this program, which currently does not reside within an academic unit (department), is a "pre-med" program. However, the LSP did not see itself as a pre-med program, but rather as a program with emphasis on basic science application to human health and Community Engagement Learning. In other words, the LSP wants to differentiate itself as an applied human biology program, while the Department of Biology has a strong emphasis on traditional Biology sub disciplines. The delineation of the roles of these two programs needs to be clearer.

The Department does not appear to have a clear plan regarding faculty complement renewal (beyond replacement in areas required to cover undergraduate courses), and this may hinder developing cogent arguments for faculty replacement/renewal when resources allow.
Faculty do not receive credit for teaching intensive field courses. Field courses are a substantial amount of work to organize and operate and require adequate support to ensure safety of all participants, including appropriate TA resource allocation. Other recommendations are outlined below.

- develop a plan for faculty renewal, especially in areas with poor representation (plant biology, microbiology, physiology)
- delineate and differentiate the roles of Biology programs from Life Science programs
- provide teaching credit to faculty teaching field courses
- improved TA resources to maintain high quality of lab and tutorials in biology courses

The Dean of the Faculty of Science, in consultation with the Chair of the program shall be responsible for monitoring the recommendations implementation plan. The details of the progress made will be presented in the progress report and filed in the Vice-Provost, Faculty's office.

Summary of the Reviewers' Recommendations with the Department's and Dean's Responses

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation
R1.1. Continue to strive to provide enriching, experiential learning throughout their	Continue to provide a lab-based biology experience to our students by advocating for the resources to maintain 13 lab/field courses, and	Associate Chair (undergrad), Chair	Ongoing

	experiential/independent research courses (Bio3EP3,3IR3, MolBio3l03, Bio4F06, 4C12, MolBio4G12). TA support is currently a limiting variable for this.		
undergraduate program			
R2.1 Maintain dual-entry to Honours Biology program and continue to strive to make the differences between Discovery Subplan and regular Honours Biology program more visible to students earlier in their studies.	Agreed, maintain Biology core and Biology + Discovery subplan Look into additional ways to advertise our program options to Level I students (more info on Bio web site & Bio1A03, Bio1M03 Avenue pages), use social media (twitter, snapchat), engage the BioSociety to help with this.	Associate Chair and Biology Undergraduate Committee (BUGs), Biology Undergraduate Society (BioSociety)	2017-18
R2.2. Consider including a Level 2 course or extra-curricular activities aimed at Discovery Subplan students that would build a student learning community or more closely-linked cohort.	Level 2 is full with courses, cannot introduce another. Instead consider recommending or requiring that Bio+Discovery students take Bio2L06 (Experimental Biology). Already considering how to provide a better cohort experience for all programs, perhaps by following our Welcome to Biology Night with additional get-to-know your faculty & fellow student events	Associate Chair and BUGs, BioSociety	2017-18
R2.3. Adopt recruitment activities to maximize the visibility and enrolment in the Honours Biology Discovery Subplan.	See proposed follow-up above	Associate Chair, BUGs, BioSociety	2017-18
R3.1. Faculty be made more aware of	The Associate Chair participated in a workshop that introduced Forward with Flexibility, the new	Associate Chair and Chair,	2017-18

(or be given more access to) institutionally-supported close-captioning video services so that individual faculty do not perceive this accessibility requirement as a barrier to producing learning materials for all types of learning styles.	teaching and learning resource on accessibility and inclusion. This resource will be available sometime this summer to aid faculty in making their teaching more accessible to all. All faculty will be expected to do the online modules and take a quiz as part of our obligation to the Assessibility for Ontarians with Disabilities Act. Representatives from the Forward with Flexibility resource will visit the department to explain use and benefits of the resource.

During the workshop the Associate Chair learned that close-captioning and other resources are available for courses that have students with these needs. | Forward with Flexibility team | |
| R3.2. Faculty be encouraged to continue to develop and adopt innovative and creative approaches to their teaching. | Work with the MacPherson Institute to encourage continued innovative ways to improve teaching in Biology. Invite MacPherson to provide a 1 hour information session to the faculty. Ask Biology Teaching Profs to provide 1 hour information sessions on different ways to enhance student engagement during lectures | Associate Chair, MacPherson Inst, Biology Teaching Profs, Biology faculty | Ongoing |
| R4.1. Continue to articulate value of laboratory and field courses to students and explore mechanisms to encourage more students to choose these courses in Levels 3 or 4. | Continue to do this at various Biology information events for our students.

More promotion of our lab/field courses in all level 2 Biology courses and if possible on social media (see R9.1) | Associate Chair, Level 2 Biology faculty | Ongoing |
| R4.2. Depending on availability of adequate resources, | Can't add a new lab/field course due to resource issues & already have many lab/field options. | Associate Chair and BUGs | Put this curriculum change through APPC this fall for the 2018-19 calendar. |

consider introducing a required Level 3 laboratory or field course for program students not doing co-op or not intending to do a thesis project course. Perhaps Honours Biology Discovery Subplan might be a good place to introduce this.	Instead, considering adding a requirement that all Biology program students take at least 3 units from: 3rd year lab/field courses, 3rd year experiential or research courses (Bio3EP3, Bio3IR3, MolBio3I03), 4th year project (Bio4F06) or thesis (Bio4C12, MolBio4G12)		
R4.3. Continue with its plans to offer a new Level 3 course developed by the computational and quantitative biologists.	Bio3SA3 (Biological Statistics) was approved in fall 2016 and will be offered in winter of 2018		Done
R4.4. Consider where more biostatistical analysis and critical analysis of published biostatistics could be reinforced in existing courses.	This was discussed at a departmental meeting in in 2017 after examining the 2015 IQAP survey of graduating students. A number of faculty have added statistical analysis of biological data to their courses (Bio2L06-Experimental Bio, Bio3SS3-Pop Eco, Bio3JJ3-Field Eco, MolBio3D03-Experimental Cell Bio, MolBio3Y03-Plant responses to the environment. Monthly Data Lunch run by Bolker & Dushoff to help 4th year students, grad students & faculty with statistical analysis of their data.	Associate Chair will survey faculty and then if necessary encourage more faculty to add biostats analysis to their courses.	2017-18
R5.1. Establish clear guidelines to outline reasonable expectations for newly defined technical roles.	Chair, Associate Chair, Dept. Administrator and staff will work together to outline guidelines and roles. A comprehensive review is scheduled for the spring of 2018.	Chair	2017

R5.2. Consider distributing technical support staff responsibilities according to expertise, rather than course level, to more fully utilize expertise of incumbent staff.	We realize that the new model of one Undergrad Coordinator (UC) + 1 tech for each level, may not be the best way to run our undergad labs and tutorials. We will work together to find the best way to deliver our labs & tutorials with 3 UCs and 3 techs.	Chair, Associate Chair, Dept. Manager, Staff,	1st formal meeting – Aug, 2017 to prepare for upcoming 2017-18 academic year 2nd formal meeting – May 2018 to discuss how the first year went, brainstorm to improve for subsequent years
R5.3. Insofar as resources allow, the allocation of TA resource to Biology be adjusted to meet the demand on programs to deliver high quality, experiential learning opportunities.	We will work with the Dean to maintain the high quality of our undergraduate courses.	Chair, Associate Chair, Manager, staff	Ongoing
R5.4. Faculty of Science consider allowing select appointment of sessional instructors in areas of Biology with limited capacity to deliver necessary curriculum.	Hiring sessionals will not serve the long-term need for subject expertise that is not being met by current faculty complement. We will work with the Dean to explore solutions.	Chair, Dean	Ongoing
R5.5. Field courses be recognized as bona fide courses, and faculty who teach them be afforded teaching credit and TA resources to operate them.	Faculty spend 160-180 hours for each field course, this is often higher than for a regular already developed course offered during the academic year. Biology faculty currently teach 2 to 3 field courses per year, along with a full regular course load in most years. We need to maintain this level of field course teaching to remain in OUPFB (Ontario Universities Program in Field Biology) & provide McMaster students access to these field opportunities. We will work with the Dean to explore solutions to	Chair, Dean	2017-18

	continue to offer field courses while maintaining our regular curriculum.		
R5.6. Department should prepare an updated Strategic Plan, with emphasis on growing strengths and identifying core faculty complement required to continue to deliver their strong undergraduate programs.	Agreed. Chair will organize a retreat to discuss this in spring 2018.	Chair, faculty	2018
R5.7. Renovation of greenhouse space be made a priority.	We agree that the greenhouse is a priority, but renovations are not the answer. A new modern energy-efficient greenhouse is required. The importance of the Biodiversity collection was recently recognized by a Sustainable Design in Heritage Award from the Hamilton Municipal Heritage Committee. It is not generally appreciated that the Biodiversity collection is a core component of our undergraduate teaching and community outreach. The biodiversity collection receives 500 student visits yearly as part of lecture, lab, outreach, as well as loaning plants for lab study almost weekly. We will work with the Dean and Advancement to fundraise for a new greenhouse.	Chair, plant biology faculty, Advancement	2017-18
R7.1 Ensure that faculty, TA, and laboratory resources in Level 2 Bio courses required by both LSP and Bio students are provided at the level required to maintain the pedagogical	Agreed, will advocate for the TA and lab resources to maintain these courses.	Chair, Associate Chair	Ongoing

excellence developed by Biology.			
R7.2 To enable better communication among stakeholders in Life Sciences Programs, an ongoing Life Sciences Program curriculum committee be struck to allow consultation with cognate units prior to decanal approval of new LS courses and programs. Care should be taken to ensure that representation by Biology faculty with 100% appointments is provided.	Agreed. Biology's Associate Chair has suggested this on a number of occasions at APPC.	SIS Director, Associate Dean, Associate Chair	2017
R9.1. Biology make a concerted effort to reach out to undergraduate students through a variety of means, including social media (Twitter, Facebook, etc.).	Agreed. We have been thinking about this as discussed in our Self-Study, as our Information Events, website and emails are not informing enough of our students. We will look into using Twitter, snapchat, TVs outside first year labs in BSB, announcements on Course Avenue sites. We will also consider providing small group mentorship to Biology students, perhaps with the help of the BioSociety. A retreat to discuss these issues will be organized, and funding sought.	Associate Chair, Academic Administrator, BUGs, BioSociety, faculty, staff	IQAP implementation Retreat in Midterm Break in October 2017.

Dean's Response, Faculty of Science:

Due to some turnover in the Office of the Dean of Science, the response of the Dean has been delayed. The Dean noted that the reviewers report highlighted several areas of strength in the undergraduate programs in Biology. In particular, the report highlighted the commitment to comprehensive Biology

undergraduate programs that reflect the breadth of the Discipline, while also providing capacity for students to specialize in areas of interest. It is clear that the program learning objectives are well defined and integrated into the curriculum with many points of evidence indicating that graduating students in all programs should meet or exceed the degree requirements. The recent changes to Biology 1A03 were highlighted as an example of innovation in curriculum design that reflects the excellence of the programs, the staff and the faculty. The review team recommendations have provided areas for continued improvement and consideration and have all been incorporated into a plan for moving forward. The Dean supports all of the proposed actions highlighted in the program response but feel that some of the interpretations and recommendations and subsequent program responses do require some explanation and refinement with the broader lens available at the Decanal level. In addition, due to the considerable delay between the development of the Program response and the submission of the Dean's response, the Dean is now able to provide more context for some of the specific recommendations.

Recommendation R2.3: "*Adopt recruitment activities to maximize the visibility and enrolment in the Honors Biology Discovery Subplan.*"

Recommendation R9.1 "*Biology make a concerted effort to reach out to undergraduate students through a variety of means including social media*".

The Dean grouped these recommendations together to highlight action on these items. The Office of the Dean of Science is taking a number of steps to address communication with undergraduate students in the Faculty of Science. We will be supporting enhancement of communication at several levels including the hiring of a communications officer for central facilitation of both internal and external communications. We are also initiating a variety of projects aimed at supporting and informing students with respect to academic, career and co-curricular opportunities and events.

Resource related recommendations (Section 5)

Overall, I believe that many of the resource related recommendations in section 5 could be addressed in a variety of ways in the near future, however a strong Departmental Strategic plan will be crucial to the ability of the Office of the Dean to support requests and initiatives from the Department of Biology.

Recommendation R5.1: "*Establish clear guidelines to outline reasonable expectations for newly defined technical roles.*"

The review team correctly noted that a significant re-structuring of the instructional and technical roles had been undertaken just prior to the site review. It is expected that any significant change in organizational structure will result in a period of adjustment and accommodation. While that re-structuring was conducted with the oversight of the Office of the Dean, the actual structure was

developed and implemented from within the Department of Biology. During the 2017/2018 academic year the Dean met on a regular and frequent basis with the Chair of the Department and the staffing plans were a common focus of those meetings. Substantial information was gathered including detailed responsibility and task lists, and time estimates. Reporting structures were altered such that laboratory and technical staff now report to the Department Chair rather than the Department Administrator. A review of the new staffing structure revealed that some adjustments should be made and we have now moved one additional instructional staff to 12 month rather than 10 month and adjusted the activities and expectations of several positions.

> Recommendation 5.3: "*Insofar as resources allow the allocation of TA resource to Biology be adjusted to meet the demand on programs to deliver high quality, experiential learning opportunities.*"

The Department of Biology has had and will continue to have the capacity to request additional resources in all areas as part of comprehensive and justified planning. Efforts have been made to clarify the financial supports available to units for their graduate programs (TA and Scholarship) in an effort to assist them in both fiscal management and effective utilization of resources for their academic mission.

> Recommendation 5.4: "*The Faculty of Science consider allowing selection appointment of sessional instructors in areas of Biology with limited capacity to delivery necessary curriculum.*"

Similar to recommendation 5.3, the unit already had, and will continue to have, capacity to request sessional faculty, however those requests must be justified both in terms of rationale and resource allocation and be part of a comprehensive strategic plan for the unit. One specific area of concern identified in the report was the heavy reliance on sessional instructors for the Biology/ Pharmacology Program. For this reason and others, this program has now been administratively moved to the Faculty of Health Sciences.

> Recommendation 5.5: "*The field courses be recognized as bona fide courses, and faculty who teach them be afforded teaching credit and TA resources to operate them.*"

As this recommendation links specifically to the courses offered through the Ontario Field Biology program which has a separate administrative and enrollment system from McMaster, the dean recently requested and received a report from the Chair of Biology on how the program runs and how it is currently resourced by McMaster. It is clear that the teaching of field courses in this program have been resourced by both faculty and staff and that credit for teaching courses by faculty has been provided on an ad hoc basis in the past. This report will provide the foundation to establish a more stable mechanism of resourcing that also takes the funding of the program into consideration.

> Recommendation 5.7 "*Renovation of the greenhouse space be made a priority.*"

The Faculty of Science submitted a successful proposal to the McMaster University Strategic Alignment Fund to assist the Faculty of Science with the costs of building a new greenhouse addition to the Life Sciences Building, where the Department of Biology is housed.

> Recommendation 7.2 "*To enable better communication among stakeholders in Life Sciences Programs, an ongoing Life Sciences Program curriculum committee be struck to allow consultation with cognate units prior to decanal approval of new LS courses and programs. Care should be taken to ensure that representation by Biology faculty with 100% appointments is provided.*"

The Dean has substantial concerns with this recommendation as is not sure that the review team was provided with the full context of the information related to the development of the Life Sciences Program or the curriculum governance process that is already in place. In recognition of the issues of academic planning and resourcing, former Dean of Science, Rob Baker, formed an *ad hoc* committee in 2014 (The Life Sciences Working Group) and that group included representation from faculty, staff and students from many units in Science, including Biology. In their report of March 2015, the working group proposed a variety of revisions to the Life Sciences Curriculum to address a variety of concerns. Those revisions have now been adopted, and as noted by the reviewers have transformed the Honours Life Sciences Program into a distinct and excellent program. In January 2016, the School of Interdisciplinary Sciences was established and the Life Sciences program was moved to that new academic unit. The School of Interdisciplinary Sciences has its own curriculum committee for managing curriculum issues for all programs in the School, and as such, it would not be appropriate to layer on an additional curriculum committee with faculty representation from outside the unit. For this program, as with all other programs in the Faculty of Science, the mechanism for other units, such as Biology, to provide input on the curriculum proposals from another unit occurs at the Faculty of Science Academic Policy and Planning Committee. It will perhaps take some time for all members of the Faculty of Science to become aware of all of the recent changes, but in light of this information, the Dean does not support any action with respect to recommendation 7.2.

As the Faculty of Science moves forward with its commitment to excellence in undergraduate education, it will monitor its progress with respect to the individual recommendations of the review team and engage in its highly valued partnerships in refining and delivering these excellent undergraduate programs in Biology.

Quality Assurance Committee Recommendation

McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow the regular course of action with a progress report and subsequent full external cyclical review to be conducted no later than 8 years after the start of the last review.

FINAL ASSESSMENT REPORT - DRAFT

Institutional Quality Assurance Program (IQAP) Review

Mathematics and Statistics Undergraduate Programs

Date of Review: February 12-13, 2018

In accordance with the University Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the ***Mathematics and Statistics*** *undergraduate programs delivered by the Department of Mathematics and Statistics. This report identifies the significant strengths of the programs, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.*

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Executive Summary of the Cyclical Program Review of the Undergraduate Programs in Mathematics and Statistics

In accordance with the Institutional Quality Assurance Process (IQAP), the Department of Mathematics and Statistics submitted a self-study for the undergraduate programs in Mathematics and Statistics in December 2017 to the Vice-Provost, Faculty to initiate the cyclical program review of its undergraduate programs. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers, both from Ontario and one internal reviewer were endorsed by the Dean, Faculty of Science, and selected by the Vice-Provost, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on February 12 - 13, 2018. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost, Faculty, Dean of the Faculty of Science, Chair of the department and meetings with groups of current undergraduate students, full-time faculty and support staff.

The Chair of the program and the Dean of the Faculty of Science submitted responses to the Reviewers' Report (July 2018). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

Strengths

In their report (March 2018), the Review team noted the following strengths of the Mathematics and Statistics undergraduate programs:

- Flexibility of the program
- First year courses in mathematical computation and reasoning
- Actuarial and Financial Management
- High quality of students and faculty

Areas of Improvement

In their report, the Review Team identified some recommendations for areas of improvement including:

- Enhanced versions of courses to give a richer experience to the best students
- Exposure to data science earlier in the program
- More guidance for students especially targeted at opportunities
- Improved support for the Math Help Centre
- More engagement with other faculties

The Dean of the Faculty of Science, in consultation with the Chair of the Mathematics and Statistics department shall be responsible for monitoring the recommendations implementation plan. The details of the progress made will be presented in the progress report and filed in the Vice-Provost, Faculty's office.

<u>Summary of the Reviewers' Recommendations with the Department's and Dean's Responses</u>

Implementation Plan

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation
1a. Introduce aspects of data science early, perhaps even into Math 1MP3	Intensively pursue the idea of introducing data science into the curriculum, at some level. Note that both Math 1MP3 instructors have reservations about fitting this material into the existing course.	Undergraduate committee, under guidance of associate chair (undergraduate)	One year for discussion, two or more years for implementation.

1b. Offer enhanced versions of some of level I and II courses	We will explore the details of creating enriched sections of our 1st-year required courses in linear algebra and calculus, and consider repercussions for upper-year courses, including possibly enhanced or honors versions of the curriculum in second year	Undergraduate committee, under guidance of associate chair (undergraduate)	Strike a committee to start work in summer 2018.
1c. Expand teaching of communication skills	Create a list of courses that would be deemed to satisfy a ``communications requirement'', and create a requirement that students in honors programmes take at least one of the courses from the list. Syllabus (or the calendar copy) of each course would identify it as such. Examples of such courses are Math 4FM3, Math 3MB3, Math 3Z03, Math 4P06, Stats 4T06.	Undergraduate committee, under guidance of associate chair (undergraduate)	Summer 2018, for submission to AP&PC in Fall 2018, and addition to the calendar for 2019-20
1d. Increase emphasis on computing in upper level courses	Hold some workshops in department presenting practical ways to include computing element in upper-level courses. Then discuss whether to mandate this use and in what courses.	Undergraduate committee, under guidance of associate chair (undergraduate)	One year for information gathering, one year for further discussion
1e. Consider aligning AFM courses more with exams, using consultation with actuarial expert.	Work with our shortly-to-be-hired actuarial teaching professor to conduct this review.	Chair, associate chair (undergraduate), David Lozinski, new faculty member	One year
2a. Decrease tutorial sizes, at least in some classes	Consider whether TA budget would allow this, and what courses would benefit from a smaller tutorial. Also discuss how to improve attendance and TA training in order to make these more effective.	Chair, associate chair (undergraduate), Aaron Childs	One year
2b. Have instructional assistants	The chair expects to be able to hire Chris McLean and Erin Clements as instructional assistants, with responsibilities for Math Help Centre, assistant course coordinators, acting as liaison for TA training, etc.	Chair	September 2018

2c. Have more administrative support for undergraduate associate chair, especially for student advising}	Find out how this is done in other departments, decide on case to make to Faculty of Science	Chair	One year
2d. Make the organisational support for Math Help Centre more permanent via an instructional assistant position and commit to funding of Math Help Centre	See response to Recommendation 2b. Discuss ways in which the Faculty of Science could make a commitment to its continued funding.	Chair, associate chair (undergrad), associate chair (grad)	One year
2e. Hire more faculty, and also explore blended learning models to leverage technology to compensate for higher student/instructor ratio	Discuss using blended learning in some courses, make case to Faculty of Science for funding to do so	Undergraduate committee, under guidance of associate chair (undergraduate)	One year for initial discussions; two or more years to implement
3a. Communicate rotating schedule of courses more effectively to students	Changes currently being made to course list on departmental website to implement this recommendation. All courses will be listed with informal description. Courses not being taught in current year will be listed in separate section.	Summer 2018	Associate chair (undergraduate), staff of undergraduate team
3b. Increase communication/consultati on/transparency in departmental decision-making, perhaps through more frequent meetings	This can be implemented by the chair.	On-going	Chair
3c. Explore opportunities to collaborate with other Faculties such as Business and Social Science	Did not discuss at retreat but open to creating and exploring further opportunities	On-going	Chair

Further Summary from the Department:

Item 1a. There is strong departmental support for developing a stream of data science courses, and several options were discussed. One would be to work in cooperation with other programs in Science (or more broadly) to develop an interdisciplinary minor in data science. Another would be to develop a data science sub-plan within Mathematics and Statistics. Both options will require additional resources.

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Item 1b. Adam Van Tuyl gave a detailed presentation about options for introducing enhanced versions of the Level I and II curriculum. The basic dichotomy is whether to have a "hard" divide by developing new courses that run in parallel to our standard courses, or a "soft" divide by introducing enhanced sections of our standard courses. We have discussed the pros and cons and decided to pursue the latter approach for the level I curriculum, inspired by the example of a program currently being run at Simon Fraser University. There are a number of logistical issues that remain to be worked out, for example, how will students be separated between the enhanced and standard sections? We aim to give them freedom of choice while still retaining the flexibility and diversity (especially with respect to gender issues in the sectional divide) of our level one program.

Item 1c. David Lozinski gave a wide-ranging presentation about the many possible ways in which we could enhance the teaching of communication skills in our programs, with special reference to job training and experiential learning. There is recognition that all of these aspects require our attention, and it is also clear that we will need to attend to these issues over the next 3—5 years. For instance, depending on the outcome of the PASF recommendations, it is expected that all students in our programs may need to satisfy a substantial literacy requirement (e.g. 6 to 9 units). Given that, the question is what additional requirements would we like to adopt. At the very least, we plan to designate certain upper year courses as fulfilling the mathematical or statistical communication skills, and to require that all honours students complete at least one such course. We will work to revise the upper year curriculum to ensure that some of the courses include a significant communication component, and we also plan to continue discussing other ways to enhance the teaching of communication skills and to create opportunities for experiential learning for students in our programs.

Item 2a. Engineering has requested that the level 1 engineering math include a greater emphasis on the symbolic computation system MatLab, and this would require the development of new teaching materials in the form of online modules. Engineering has also requested smaller tutorial sizes in the level 1 engineering math classes. It is worth recalling, however, that we made a choice some years ago to put our TA resources into the MathHelp Centre at the expense of running large tutorials. To run both small tutorials and the MathHelp Centre will require increased TA funds. To meet the increased demand, we would propose to revise the undergraduate TA training course Math 2ET3 and hire undergraduate TAs. This change will require additional resources, but we feel the enhanced learning outcomes for the students justify the investment.

Item 3a. We did not discuss the possibility of further collaborations with Business and Social Science during the retreat. We note that we do already have the Actuarial and Financial Math program, which involves students taking many courses in Business, and a large selection of joint honours programs with Social Science and Humanities. We are very open to creating further such opportunities. For example, the Economics department is introducing a direct entry program, and we would be enthusiastic about using this to further the growth of the Economics and Math joint honours.

Dean's Response, Faculty of Science:

The Dean would like to thank the members of the review team for their willingness to participate in the site visit and for preparing the external reviewers report. The Dean would also like to thank the Department of Mathematics and Statistics for preparing the Program response to the review report and also highlight the benefits of the broad Departmental engagement that informed the Program response. The Dean noted that the insightful analysis of the undergraduate programs in mathematics and statistics and the recommendations stemming from that analysis provide a useful roadmap for the Program to follow in the coming years.

The Dean writes that the review report accurately highlights the strengths of the undergraduate programs in Mathematics and Statistics in the Faculty of Science, and in the broader University, as well as the challenges presented by the recent changes in enrollment and the fiscal restraints experienced in the Faculty of Science. The Dean agrees that the increasing student to faculty ratios and the demographics of the faculty complement in the Faculty of Science have presented difficult resourcing decisions for many units, including the Department of Mathematics and Statistics. The Dean notes that the course of action the program has proposed in response to the specific recommendations are appropriate and reasonable; however, there are several areas where she would like to highlight the impact of central Faculty and University initiatives and one area of concern.

Concern:

Recommendation 1b. Offer enhanced version of some level 1 and II courses. While the Dean understands the merits of the recommendation and the desire of the review team to address the concern of some of the students who were interviewed about their request to have a higher degree of difficulty in Level 1 courses, she has some concerns about the Program response to the recommendation. The Dean notes that at McMaster, if courses are considered to be substantially different either in the pre-requisites or in the content, then they must be identified as different courses. As such, any changes would have to be approved at the Departmental, Faculty and University level committees and adhere to the required timelines for those changes. Additionally, the Dean has a larger concern about the experiences of the large number of students who are taking courses that they perceive to be too difficult, rather than not sufficiently challenging, and she would encourage the Program to consider both sides of this recommendation in determining a path forward.

Additional information to supplement Program response:

Recommendation 1c. Expand teaching communication skills. The Dean writes that as identified in the report, this is an area of considerable interest University wide and she would encourage the Program level undergraduate committee to liaise with the central offices responsible for the implementation of the recommendations of the PASF report prior to moving forward with independent action. The Dean would also recommend coordination with the Life Sciences Program in the School of Interdisciplinary Science, who have developed a similar "communications requirement" and "communications course list" for assistance with this action item.

Recommendation 2e. Hire more faculty and also explore blended learning models to leverage technology to compensate for higher student/instructor ratio. The Dean states that in the last budget cycle, two additional appointments of tenure stream faculty members were approved for hire in the Department of Mathematics and Statistics for a July 1, 2019 start. These hires will assist with addressing some of the concerns related to student/instructor ratios.

The Dean noted that the undergraduate programs in mathematics and statistics are an excellent example of the benefits of the reflective process encouraged through the IQAP process. The Program has responded to previous reviews with concrete action and refinement of the programs, and with the additional resources now available due to fiscal changes in the Faculty of Science, will be able to address several additional recommendations.

Quality Assurance Committee Recommendations

McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow the regular course of action with a progress report and subsequent full external cyclical review to be conducted no later than 8 years after the start of the last review.

FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Medical Radiation Sciences

Date of Review: February 5 - 6, 2018

In accordance with the University Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the **Medical Radiation Sciences** *programs delivered by the School of Interdisciplinary Science. This report identifies the significant strengths of the programs, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.*

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Executive Summary of the Cyclical Program Review of the Undergraduate

Medical Radiation Sciences Program

In accordance with the Institutional Quality Assurance Process (IQAP), the School of Interdisciplinary Science submitted a self-study in January 2018 to the Vice-Provost, Faculty to initiate the cyclical program review of its undergraduate programs. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers, one from New Brunswick and one from Halifax and one internal reviewer were endorsed by the Dean, Faculty of Science, and selected by the Vice-Provost, Faculty. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on February 5 - 6, 2018. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost, Faculty, Director of the School and meetings with groups of current undergraduate students, full-time faculty and support staff.

The Director of the School and the Dean of the Faculty of Science submitted responses to the Reviewers' Report (August 2018). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

Strengths

In their report (February 2018), the Review team noted that all professors and management are very supportive of the students and the program. Together they provide a high-quality discipline specific curriculum. It was noted that the program effectively integrates elements of experiential learning, self-directed learning and interdisciplinarity throughout the student experience. There is effective monitoring of quality assurance through various processes. There is a high level of student satisfaction, excellent certification results and positive feedback from employers. The reviewers were impressed by the integrated nature of the IAHS building, the quality of the facilities and the simulation equipment. The existence of a capital equipment purchase plan for replacing older equipment was highlighted as a commendable initiative.

Areas of Improvement

In their report, the Review Team identified some recommendations for areas of improvement including:

- Improve selection process to identify student with more aptitude for MRSc
- Opportunities for additional interdisciplinary learning in levels 1 to 3 through collaboration with FHS
- Incorporate academic modules in P/F courses (skills assessment and clinical placement)
- Explore pathway opportunities such as dual certification
- Explore non-traditional sites (clinics) for clinical placements

The Dean of the Faculty of Science, in consultation with the Director of the School of Interdisciplinary Science shall be responsible for monitoring the recommendations implementation plan. The details of the progress made will be presented in the progress report and filed in the Vice-Provost, Faculty's office.

Summary of the Reviewers' Recommendations with the Department's and Dean's Responses

Implementation Plan

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation
"Investigate the possibility of an optional MRSc honours" Page 8	The School of Interdisciplinary Science (SIS) curriculum committee have initiated a review of the current curriculum in order to determine the scope of the changes required to open this option to the MRSc students	Prof Ana Campos (SIS Director) and Dr. Kim Dej (Associate Director of Curriculum)	Timeline will depend on the scope of the changes required. Minimally 2 years.
"Consider adjunct faculty appointment status for Mohawk faculty (especially	The MRSc Steering committee will be consulted and asked to arrive at a process at this level. Mohawk Associate Dean of	Prof Ana Campos, Director of SIS, will add this item to the agenda of the next	Applications should be collected during the 18-19 academic

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those interested in conducting research)" Page 8	Allied Health should be in charge of forwarding the applications with their support to the Steering committee first. Any adjunct appointment in the School of Interdisciplinary Science (SIS) must be approved by the school executive council as the home academic unit that will host this appointment.	MRSc Steering committee for discussion.	year for consideration.
"Investigate developing partnerships with other MRSc programs to facilitate study abroad initiatives" Page 8	The Medical Radiation Sciences program is exploring a number of international partnerships at this time. International connections and awareness of global health issues are areas of interest and growth opportunities. 1. The program is expecting a visit in late July by Safora Johansen (Oslo Metropolitan University, Oslo Norway) to discuss the expansion of an academic partnership with Dalhousie University to include McMaster/Mohawk. (Research collaborations for RT/Rad). 2. The program is exploring a possible partnership/exchange with Cardiff University (Cardiff, Wales). Exchange for Rad. 3. Expansion of the institutions research in Point of Care Ultrasound training and applications has provided opportunities for students to engage in international research and training	Wendy Lawson, AD Special Projects, Mohawk College will coordinate the initial information collection and contacts. Wendy will liaise with SIS as appropriate to arrange dialogue with each group.	First contacts have been made in all cases. Further exploration and meetings with SIS to be planned for the 18/19 academic year.

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	abroad. Current development of research collaboration with Latin America in Hemophilia management. Exploration of Collaborations with EduAfrica to provide abroad training opportunities/service learning for our students in Africa.		
"Explore the formation of a Rad-Aid chapter at the university" Page 8	RAD-AID international is an international aid organization focused on increasing and improving radiology for poor and developing countries. Imaging the World is sponsored by the WHO to build medical imaging capabilities where healthcare resources are scarce and has been recognized for outstanding social innovation in health. The Medical Radiation Sciences program is exploring the formation of a partnership/chapter with one/both of these organizations.	Wendy Lawson has reached out to both organizations for information. A proposal will be presented to SIS for consideration of next steps.	Presentation of opportunities with Rad-Aid and/or Imaging the World to be presented to Ana Campos and Kevin Diamond in Fall 2018.
"Align Mohawk and McMaster MRSc websites to ensure consistency of program description and information" Page 9	SIS website (McMaster side) is undergoing a complete redesign. It is due to go live sometime in mid to late Fall. The faculty of the Science IT team will be forwarding the first complete mock version of the new website very soon. At this point we will share and consult with our Mohawk colleagues such that modifications can be implemented to achieve consistent information in both websites.	SIS Director and SIS website team	Fall term 2018

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"Continue to ensure students have various avenues to explore the three specializations in Level 1" Page 9	There are in place significant opportunities for the students to make informed choices embedded in the 1F03 course designed specifically to introduce the specializations. It includes guest lectures by practicing professionals, graduates and upper year students as well as a panel question and answer session. There are laboratory tours with faculty and student demonstrations and extensive online resources and assignments that focus on researching the scope, legislation, physical and mental demands of the professions. Additionally, the Mohawk faculty works with the MRSc student society to host additional information sessions during the evening of Term 1. We will continue to consult program faculty and students on was to further highlight and engage students in these resources moving forward.	1F03 instructor, SIS Director, Mohawk Associate Dean	Immediate
"If the radiography and radiation therapy specialization students continue to complete the current CT course together, it will be important to provide more radiation therapy specific content and radiation therapy faculty involvement" Page 11	We have already made modifications to the core CT course MRSc 3K03 effective F2018 separating CT labs by specialization. While all students take the same lecture components for this course, new radiation therapy specific labs were created in 2017 and are taught by radiation therapy faculty. We have also started having regular team meetings weekly for the delivery team to ensure appropriate communication regarding outcomes to ensure alignment with assessments.	Mohawk Associate Dean	Immediate

"Academic modules with assigned grades could be integrated into courses with a specialization skills assessment of clinical component. At present these courses are pass/fail and not included in the GPA calculation."	This suggestion is currently being discussed at the level of various Mohawk-McMaster Joint Committees for feasibility and will be considered as part of a wider review of courses for an Honours BMRSc.	Medical Radiation Sciences Program Coordinator (SIS)	Fall 2021

Dean's Response, Faculty of Science:

The Dean would like to thank the members of the review team for their engagement and enthusiasm during the site visit and for their thoughtful and encouraging report, including the recommendations and suggestions. The Dean would like to thank also the members of the School of Interdisciplinary Science and the representatives from the School of Health at Mohawk College for preparing the Program Response.

The Dean noted that the reviewers report highlighted several areas of strength in this undergraduate program in Medical Radiation Sciences. In particular, the report highlighted the unique and effective nature of the collaboration between McMaster University and Mohawk College in terms of the program structure and oversight, but also in terms of the joint commitment to reflection, assessment and adjustment of the program to meet the desired academic outcomes and provide high quality experiential opportunities. The review team recommendations have provided areas for continued improvement and consideration and have all be incorporated into a plan for moving forward. Importantly, the key individuals (and institutions) responsible for advancing the identified responses to the specific recommendations have been detailed in the Program Response. It is reflective of the program that these recommendations will be led by individuals both at McMaster and at Mohawk. The Dean confirmed that she supports all of the proposed actions highlighted in the program response and in particular supports the recommendation in the report to consider the development of an "honours stream" as an option in the existing program. The Dean agreed with the review team's assessment that shifting the complete program to meet the degree level requirements for an Honours Science degree would be a comprehensive undertaking that might not meet the needs and aspirations of many of the stakeholders. In contrast, the option to provide an honours stream for some students might result in attainment of several of the recommendations outlined in the report through direct or indirect activities associated with the associated curriculum and resource changes.

The Dean further noted that while the Faculty of Science is incredibly committed to the continued success of this joint program, she would like to emphases that transparency and collaboration with respect to all levels of oversight and governance will continue to be crucial. The changing models for funding of Universities and Colleges and adjustments in fiscal management and governance by both

Mohawk and McMaster mean that all program level decisions must be reviewed and supported, at all levels, by both institutions. As the Faculty of Science moves forward with our commitment to excellence in undergraduate education, we will monitor our progress with respect to the individual recommendations of the review team and engage in our highly valued partnership with Mohawk College in refining and delivering this excellent undergraduate program in Medical Radiation Sciences.

Quality Assurance Committee Recommendations

McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow the regular course of action with a progress report and subsequent full external cyclical review to be conducted no later than 8 years after the start of the last review.

FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Biology Graduate Programs

Date of Review: March 1 and 2, 2018

In accordance with the University Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the graduate programs delivered by Biology. This report identifies the significant strengths of the program, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Executive Summary of the Review

In accordance with the Institutional Quality Assurance Process (IQAP), the Biology program submitted a self-study in January 2018 to the Vice-Provost and Dean of Graduate Studies to initiate the cyclical program review of its graduate programs. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers and one internal reviewer were endorsed by the Dean, Faculty of Science, and selected by the Vice-Provost and Dean of Graduate Studies. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 1st and 2nd, 2018. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost and Dean of Graduate Studies, Associate Dean, Grad Studies and Research, Chair of the department and meetings with groups of current students, faculty and support staff.

The Chair of the department and the Dean of the Faculty of Science submitted responses to the Reviewers' Report (April 2018 and June 2018 respectively). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

Strengths

- Quality of faculty: Faculty are productive, research-active, dedicated and supportive of graduate student research.
- Quality of students: Graduate students are energetic, demonstrating remarkable initiative regarding community engagement and opportunities for internships. Students are productive with impressive publication and time-to-completion rates.
- Commitment to community engagement: We understand that student and faculty engagement with the community outside the university is very strong. Notably, there is a high level of positive and creative interaction of Biology faculty and graduate students with local schools.
- Dedicated staff: Administrative and academic staff are dedicated to the success of the Department and appear to go over and above their responsibilities to ensure the health of the graduate program.

Areas for Enhancement or Improvement

- Resources (infrastructure, faculty and staff): The need for upgrades and renovation to the physical infrastructure supporting this program was a dominant concern for our review. The current building deleteriously affects research productivity and animal care. Infrastructure renewal should incorporate effective communal space to improve community and cohesiveness. Strategic Faculty and Staff renewal should also be a major goal of the Department.
- Strategic plan: Graduate Program enhancement would be greatly facilitated with a strategic plan setting out clear vision and goals. Such a plan could invigorate and integrate the program and improve the structure of graduate curriculum.
- Communication: In our meetings with all stakeholders, we became aware that the flow of information from Deans to Chair to faculty to students was problematic. There appears to be structural communication gaps both within the Department and between the Department and the Administration. These gaps likely negatively affect faculty engagement at a Departmental level impacting cohesiveness in the Program. Students indicated communication issues regarding graduate course offerings and Teaching Assistant Assignments. It will be important to bridge these different communication gaps to pull the Department together and to move forward with strategic and forward-thinking goals.
- Cohesiveness: A consistent theme during our site visit was a perceived lack of cohesiveness in the Graduate Program and among research groups. We observed that faculty engagement in graduate program initiatives was inconsistent and graduate students commented on a general lack of integration and cross-talk amongst research groups. We are confident that with thoughtful strategic planning, improved communication and resource renewal, the program will be invigorated with a better sense of community.

Summary of the Reviewers' Recommendations with the Department's and Dean's Responses

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation

1. Consider whether direct entry from BSc should be more readily used for exceptional students, including those with outstanding GPAs and undergraduate research experience	a) We will modify our 'Guide to Graduate Studies' and highlight the direct entry option to prospective students. a) This will be communicated directly to <u>outstanding</u> applicants and their proposed supervisors. We note that have taken this route in the past to recruit and retain excellent students. For example, we have just provided this option to an exceptional applicant for the September 2018 entry.	a) The revision of the Guide is the responsibility of the Biology Graduate Studies Committee (BGSC) and the Administrative Assistant b) The Chair of the BGSC will consult with the proposed supervisor(s) and will inform and advise the applicants on this option.	a) Revision of the Guide will be discussed at the next BGSC meeting. Changes to practices and policies in the graduate program will be submitted for discussion with the faculty in the near future. b) This will be implemented by the BGSC Chair as soon as the new practice has been presented and discussed with the BGSC and Biology faculty.
2. The Department may wish to reconsider its approach to international applicants who already hold Masters-level degrees and critically evaluate whether they first need to enroll in the MSc program.	We note that we have directly admitted international MSc graduates into our PhD program before on a case-by-case basis. The BGSC will further examine various options and identify applicants holding a MSc degree who may fulfill the criteria for enrollment to the PhD program. Prior training in a research-intensive MSc program will be considered as a pre-requisite.	Since the BGSC act as the Admission Committee in Biology, it will lead the discussion, determine the guidelines/criteria and oversee the admission to the PhD program of candidates already holding an international MSc degree.	This will be discussed in the near future by the BGSC.
3. The Department engage in curricular planning and mapping for graduate courses. This will include	Curricular planning of graduate courses is already a feature of our "*Core Graduate Courses*". In particular,	Members of the BGSC will lead the review for their respective area of specialization and provide the list of core	The review process will be initiated in May/early June and discussed at the June departmental meeting.

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establishing clear and forward-thinking goals and learning outcomes. Courses should be decided upon and advertised on a 2-year cycle, allowing students and faculty instructors to properly plan.	it involves meetings of faculty belonging to the same area of specialization, determination of the content of the core courses for each area and approval of an adequate schedule. As new courses have also been introduced, we will return to a more rigorous planning of our graduate courses and re-visit the content of our core graduate courses, the faculty designated to teach these courses and their schedule.	courses, instructors and schedule for the next two (or more) years.	
We recommend that a Scientific Communication course (e.g. Biology 712) be offered every year and be mandatory for all incoming graduate students (MSc and PhD). Our suggestion is that this course be in addition to the 2 courses already required for the MSc and would be an additional requirement for the Ph.D.	Some colleagues are concerned by the impact of increasing the course load on completion time. We recognize the value of this course and the interest expressed by a large fraction of our graduate student population. The BGSC will discuss the recommendation and look at alternative models to implement it and perhaps integrate attendance at departmental seminars (see recommendation 5) in the content of this course. This will be done in consultation with the course instructor, Dr. Jacobs.	This discussion and implementation of changes proposed in this recommendation will be done by BGSC in consultation with the course instructor, Dr. Jacobs.	The discussion will begin in May/June but may extend to the summer months as this is a significant modification of our graduate course curriculum and the membership of the BGSC will be updated in July 2018.
5. As either a component of a capstone graduate	As discussed above (recommendation 4), the BGSC will discuss	The proposal to integrate the departmental seminar	As the composition of the BGSC will be updated in July 2018

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course or on their own, weekly Departmental seminars be attended by all graduate students. *We suggest that research group focused seminars be held on rotation and held no more than 1x/week (e.g. PHYSIOL, EEB, MCB)*	recommendation 5 and look at alternative models to implement it. In particular, we'll look at integrating the attendance at departmental seminars in the content of Biology 712. Better scheduling and the coordination of research group focused seminars in the Department is a good idea that will be discussed in the near future.	series in a course such as Biology 712 will be discussed by members of the BGSC and Dr. Jacobs. The schedule and coordination of departmental and research group focused seminars will be discussed by the Seminar Committee in Biology, in consultation with the different groups.	and several faculty members are about to go in the field, the discussion will be initiated in May or June but will likely continue in the summer and fall 2018.
6. Ensure MOSAIC, as an administrative tool, is meeting needs and expectations of Graduate student applicants as well as resulting in timely conversions.	The implementation of MOSAIC has caused many headaches and is taken seriously by all administrative branches at McMaster University. We will continue to work with the School of Graduate Studies (SGS) to address any problems related to MOSAIC	This is an ongoing process.	Problems arising will be addressed by the Chair of the Biology Graduate Students Committee, the Administrative Assistant for Graduate Studies in Biology and SGS.
7. The supervisory committee must be composed of the Supervisor and two other members, one of whom could be from another Graduate Unit.	The supervisory committee of PhD students is already composed of three members. We can certainly follow the same practice for MSc students. If possible, we will promote the inclusion of faculty members belonging to different units; this is consistent with the current practices in Biology. Our approach in this regard is to name	Changes in the rules and practices of the graduate program are the responsibility of the BGSC.	The recommendation can be discussed at the next meeting of the BGSC and the change submitted for approval to the Biology faculty at the June departmental meeting.

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	faculty members who can contribute significantly to the guidance and evaluation of the graduate student's progress and research program. We will continue to use this guiding principle and therefore decide on a case-by-case basis.		
8. The Department should carefully evaluate the recommended timelines for both the PhD and MSc programs, with a view to having meetings and provided feedback earlier and more often in the programs. Students should be provided clear pathways and guidelines to proceed through their programs.	We agree with the comments of the Reviewers. There are several aspects to consider in this recommendation. First, we will put in place a mechanism to review the research program of new students within six months of their entry in the graduate program. This may require a presentation to the supervisory committee or, at the very least, the submission for approval of a short two page document describing the research program/directions to members of the supervisory committee. Second, we will form a working group within the BGSC to review the timelines of MSc and PhD programs and make recommendations to the BGSC and Biology faculty. In particular, the working group will be charged with	Changes in the rules and practices of the graduate program are the responsibility of the BGSC.	The discussion on the composition of the supervisory committee will take place at the next meeting of the BGSC and changes ill be communicated to the Biology faculty at the June departmental meeting.

The working group will be assembled in September, once the new composition of the 2018-2019 BGSC committee is determined in July 2018. |

	reviewing the procedures of Transfer from MSc to the PhD and PhD comprehensive examination.		
9. The Department should ensure its program requirements and assessments are consistent with School of Graduate Studies policies. The Department should carefully evaluate the mechanisms it uses for assessments with respect to Section 4.2 of the Graduate Calendar, which gives wide latitude to graduate programs to develop tools that meets their needs.	We will comply with these rules/policies of the SGS and update our "Guide to Graduate Studies in Biology" accordingly. In particular, we will review and modify the potential outcomes in assessment to be consistent with the practices of SGS.	Changes in the rules and practices of the graduate programs are the responsibility of the BGSC.	The recommendation can be discussed at the next meeting of the BGSC and modifications to the "Guide to Graduate Studies" will be made in collaboration with the Administrative Assistant in the near future.
10. We recommend transparent and timely communication between the Graduate Studies Committee and graduate students regarding TA allocation and assignment.	Most in-program graduate students are generally assigned to courses where they have previously worked at teaching assistants. Therefore, the problem generally concerns new graduate students entering the program. As the number of teaching assistants is determined by undergraduate enrolments, we are dependent on the data provided by the Registrar's office, typically in July/August.

TA assignment is the responsibility of the Departmental | The BGSC Chair will discuss this with the current TA assigner on how best to communicate the TA allocation. | This will happen in June 2018. |

	Administrator with the help of the undergraduate secretary and faculty members. With the approval of the membership of the BGSC (see recommendation 17), the inclusion of a BGSC member in the TA allocation process will make it more transparent.		
11. The Department should work with the Faculty to ensure current plans to improve the building space and infrastructure move forward in a timely manner.	We will continue to improve building space and infrastructure by working with the Faculty of Science and the University. The Life Sciences Building is being prioritized for a deep retrofit, but funding sources for this have not yet been identified. Dean M. MacDonald visited the Department in December 2017 and discussed her strategy to obtain funds for long-term improvements to the Life Sciences Building and infrastructure requirements in Biology. In particular, the addition of a new green house is now the number one priority of the Faculty of Science. We will continue to discuss this important issue with Dean MacDonald.	Chair of Biology and Dean of Science	Dr. Jacobs' term as Biology Chair is ending on June 30, 2018. The selection committee for the new Biology Chair is currently working to identify suitable candidates for this position. One of the key challenges of the next Chair will be to define the hiring priorities for faculty renewal.

13. Staff workload must be examined carefully to get a true sense of the work that needs to be done and how best to efficiently maximize staff capacity without causing detriment to both the undergraduate and graduate student experience. With the inefficiencies noted with the University's ERP system, the committee feels that one staff person to administer the graduate program is probably now sufficient.	The staffing plan across the Science Department is being harmonized through a central initiative, which recommends that one person is sufficient to administer the graduate program for each department. However, the "one-fits-all" model does not take into account the size of a graduate program (i.e. number of graduate students).

The Chair of Biology will seek to revisit this model after providing an hour-by-hour map of the current administrator's activity.

The Department of biology recently went through a major restructuring of our staff complement that is still in the implementation stage.

Work overload of our Administrative Assistant to Graduate Studies has been noted by graduate students and faculty members. It will be one of the priorities of the new Biology Chair to review the recommendation of the Reviewers.

The addition of a half-time assistant may alleviate many | Biology Chair and Dean of the Faculty of Science. | The discussion of this recommendation will depend on the nomination of the new Biology Chair (expected July 2018). |

	problems identified by the Reviewers.		
14. Student stipends should be examined regularly to ensure they remain competitive with peer institutions and programs which may be competing for graduate students.	We will examine the stipend situation for students on a yearly basis by comparing ours with peer institutions. We will try to maintain a competitive guaranteed minimum funding level, taking into account our main competitors in the GTA and Southern Ontario.	The Associate Chair and graduate secretary will gather the required information and will work with the departmental administrator to review the department's funding position and provide suggestions for the BGSC and department.	We will address this issue in the early fall of 2018. i.e. in time for the review of applications for the 2018-19 academic year.
15. Increase opportunities for scientific connections to be made between students in the program.	Biology offers several discipline-based seminar series that provide opportunities for students to hone their presentation skills and seek input for their projects. Better coordination of the departmental and research group-specific seminar series (see Recommendations 4 & 5 above), will allow us to more effectively allocate additional resources for beverages and food as an incentive to enhance and promote the attendance to these seminars and provide the opportunities for students to interact and learn interdisciplinary skills.	The Associate Chair will initiate a discussion with BGSS, members of BGSC, the Chair of Biology on how best to increase scientific connections among students in our program.	The BGSC will organize a meeting to specifically discuss this and other curricula matters in the second half of May 2018. Executive members and representatives of BGSS will be invited to discuss this and other related issues.
16. Work to boost faculty participation in activities that support the graduate student experience, such as volunteering to	We will put a greater emphasis on encouraging both students and faculty to attend departmental seminars and	GRD for at least the next year. The Graduate Chair, BGSC, and the graduate secretary will continue to work with BGSS to	The BGSC will organize a meeting to specifically discuss this and other curricula matters in the second half of May 2018.

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organize Graduate Research Day and other such activities.	contribute to the several discipline-specific seminar series. The first four editions of the Biology Graduate Research Day (BGRD) were organized by faculty members. In 2018 the event was organized by the BGSS for the first time. Several faculty and staff members (including both the Associate Chair and the graduate secretary) contributed to the organization of this year's GRD. We will continue to encourage the BGSS to take a lead role in GRD and provide necessary financial and logistic support. We will look at mechanisms to increase faculty and student engagement. Establishing the GRD as a standing departmental duty/committee will be discussed.	identify their needs with regard to GRD and other activities. The Associate Chair, members of BGSC, BGSS, and the Departmental Chair will discuss whether and how to make participating in GRD mandatory for all graduate students.	
17. We recommend that the composition of the Biology Graduate Studies Committee be determined democratically with fair and transparent voting procedures and that Terms of Reference be established for the Committee and for the position of Associate Chair, Graduate Studies.	The current BGSC membership is proposed by the Chair in consultation with the Associate Chair and after discussion with individual faculty members. A guiding principle in the nomination of BGSC members is a fair representation of all areas of specialization of the Department.	The Associate Chair for graduate studies will work with the T and P Committee as well as the Chair of the department and other relevant stakeholders to develop a clear set of procedures and the terms of references for the Associate Chair and members of the BGSC. They must be voted on by the department	This will likely happen when the new Chair is confirmed in July 2018 or soon after. The current Associate Chair's term finishes at the end of June 2018. Significantly, all areas of specialization of the Department are represented in the current membership of BGSC.

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	This is necessary to ensure that appropriate expertise exists in the committee during the review of prospective student applications and in-program students performances for award nominations (again in BGSC serves as the Admission committee in Biology). Therefore we propose to continue with the current selection process but to submit the admission of new faculty members to the BGSC to vote by the Biology faculty. An email ballot may be used for this purpose. A majority of votes in favour of the candidates would confirm the nomination. The terms of references for both the Associate Chair and BGSC members will be drafted, discussed and published.	before adoption. The Faculty of Science is asking departments to put their regulations in writing and this approach could be incorporated at that time.	
18. We suggest that the Department work to increase the visibility of the Associate Chair, Graduate Education towards the student body, and especially to new incoming students. The Associate Chair should be well known to all students in the program, and every effort should be make	The Associate Chair will increase his/her visibility to the students. In Biology, at the beginning of each academic year in September, the Associate Chair welcomes all new students and informs the new students of key issues of their	The Associate Chair will discuss with BGSS on how to increase the visibility of BGSC and the Associate Chair.	The Associate Chair has already talked to the president of BGSS about various issues brought up during the IQAP review. A meeting will be scheduled between the Associate Chair and members of BGSS to discuss the strategy to improve his/her visibility.

to build a strong rapport between this individual and all students in the program.	graduate program. The Associate Chair also organizes Scholarship application seminars for both new and returning graduate students. In addition, all letters of offer to new students, MSc to PhD transfer notices, PhD comprehensive exams, as well as thesis defences all need to be approved by the Associate Chair. On a weekly basis, the Associate Chair also shares relevant opportunities from other sources to the entire graduate student distribution email list. One potential avenue of further exposure is to participate in social events organized by BGSS. Regular, pre-scheduled meetings with the BGSS will be discussed with the graduate students.		
19. We recommend that the Biology Graduate Studies Committee publish minutes of their meetings and present these to the Department.	Minutes from the BGSC will be shared with the BGSS and the Biology faculty. The timely publication of the minutes will likely require the addition of a part-time/half-time staff member as discussed in Recommendation 13. Currently, the Associate Chair has been has been sharing	The Associate Chair will ensure that updates of meetings from the BGSC and departmental meetings are passed on to the BGSS representatives on those committees as soon as they become available or/and at pre-scheduled meetings, if necessary.	The March 2018 updates from BGSC were sent to BGSS. Minutes from the next BGSC meetings will be sent to BGSS as soon as they become available.

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	information regarding graduate studies with members of the department at departmental meetings or via email. The BGSS is represented at the Departmental level.		
20. The Biology Department, through the Associate Chair or the Graduate Studies Committee work closely with allied academic and non-academic units to construct a clearly articulated package of services available to graduate students.	The current Associate Chair has been interacting with other associate chairs of graduate studies in the Faculty of Science through our monthly meetings. In these activities, we share our experiences and concerns to propose faculty-wide initiatives enhancing the student experiences. Tim Nolan, the Director of Student Accessibility Services (SAS), was invited to present the SAS at the April 16, 2018 departmental meetings. The Guide to Graduate Studies in Biology is also updated on a regular basis. Special attention to student services will be devoted in the next edition. Since January 2017, the current Associate Chair has relayed all relevant information (scholarships, writing and presentation trainings, health consultations, community events,	The Associate Chair and the Administrative Assistant to Graduate Studies will be responsible for follow-up, including updating and posting the information, with inputs from members of BGSC when necessary. We will continue to work with the SAS to improve student services.	From now on, all information provided by the SGS, Faculty of Science and other administrative units will be forwarded immediately to students and copied to all supervisors. Our newly revised Guide to Graduate Studies has just been submitted. SGS is proofreading the Guide for consistency. There will be periodic updates to reflect the most up-to-date information from the Biology Department, the Faculty of Science, the SAS, McMaster University and other stakeholders, including the community.

| | awards opportunities etc) provided by the SGS, Faculty of Science, MacPherson, and MITACS etc to members of BGSS by email. To improve this process, we will copy the same information to all supervisors and ask them to encourage their students to consider taking advantages of these services.

Once the new Chair is confirmed, we will also discuss additional secretarial help for graduate studies so as to enhance such services (Recommendation 13). | | |
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Dean's Response

This Faculty level (Dean's response) has been prepared by the Dean of Science (Dr. Maureen MacDonald), with input from the Associate Dean of Science (Graduate) Dr. Bhagwati Gupta. On behalf of the Faculty of Science, the Dean thanked the reviewers for their careful and thorough assessment of the Graduate Programs in Biology. They were pleased with the recognition of the strengths of the programs, particularly the determination that the program learning outcomes are clear and that research environment is of high-quality. There were however several areas of concern cited and appropriate recommendations made. It is clear that many of these concerns and recommendations can be addressed with improvements in both the policies and practices related to communication at all levels. The Faculty of Science will work to support the Department of Biology in attending to the concerns expressed and in following the implementation plan outlined in the accompanying Program response. Additional comments from the level of the Faculty of Science on significant points related to governance and resources are provided below.

The Dean agreed with the reviewers that a concerted effort must be made to improve the flow of communication within the Department of Biology and between the Department and other units on campus, including the School of Graduate Studies and the Offices of the Dean and Associate Dean (Graduate) of Science. The Program level response has highlighted some of the crucial points of contact

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for the flow of information, and the Faculty of Science will support the implementation and formalization of the processes identified. Several other graduate programs in the Faculty of Science have implemented systems of coordinated research seminars linked to incentives for increased attendance, strategic and balanced graduate curriculum planning, and implementation and enhanced scientific communication opportunities. The Faculty of Science will ensure that these "best practices" are shared with the Department of Biology including terms of reference for Associate Chair (Graduate) and Graduate Curriculum and Policy Committees.

It is worth noting that since the time of the site visit and submission of the reviewer's reports, activities have begun to address some of the concerns and recommendations.

The committee expressed concerns with respect to the administrative processes dependent on the existing ERP (MOSAIC). The graduate MOSAIC module has undergone extensive review led by both the School of Graduate Studies and University Technology Systems. A task force is currently working to address the shortcomings of the current systems with a deadline of Sept 2018 for improvements. Representatives from the Faculty of Science are on the review and implementation teams and considerable improvements are forecasted.

With respect to the resources available to the Graduate Programs in Biology, the Dean agreed that the state of both the Life Sciences Building and the Greenhouse are unacceptable. As indicated in the reviewers' report, the Faculty of Science has made these resource issues their number one priority in the last year. They have now secured funding for a new greenhouse addition to the Life Sciences Building, and the process of design is underway. Concerning the requested deep retrofit to address the deferred maintenance in the Life Sciences Building, they have not yet received notification on our submission for provincial funding for this project but will continue to advocate for these improvements in the upcoming year. The Office of the Dean of Science has been working on a very frequent basis with the Chair of the Biology Department over the last year to address the staffing, resource and TA concerns in the unit; however, concerns remain on both sides of the discussion. They look forward to working with the incoming leadership in the hopes that a cohesive and detailed strategic plan for the Department will be developed and presented to allow the Dean of Science to support the unit in achieving its goals moving forward. Regarding Faculty renewal, the report of a hiring freeze in the Department for ten years is inaccurate as there have been three hires in Biology in the last seven years. Despite the Faculty of Science enduring a hiring freeze for four years, the Department of Biology was one of a small number of units that received a new appointment. The Dean will provide the incoming Department Chair and Acting Chair support and guidance on their future faculty appointments requests. However, new faculty appointments will likely be constrained in units that do not have companion retirements and a clear, well-articulated and integrated plan for renewal.

The Faculty of Science is committed to supporting the Department of Biology as it moves forward with the implementation plan associated with this IQAP review. We appreciate the opportunity for self-reflection and will work to retain the many strengths of the program while enhancing communication and implementing new processes that will lead to program enhancement.

Quality Assurance Committee Recommendation

McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow a modified course of action with a progress report and a modified internal cyclical review to be conducted no later than 4 years after the start of the last review. At the time of the internal review, the committee will be looking at progress that has been made in response to the recommendations and specifically, how the recommendations have been implemented with the appointment of the new Chair.

FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Chemical Engineering Graduate Programs

Date of Review: April 9 and 10, 2018

In accordance with the University Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the graduate programs delivered by Chemical Engineering. This report identifies the significant strengths of the program, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Executive Summary of the Review

In accordance with the Institutional Quality Assurance Process (IQAP), the Chemical Engineering program submitted a self-study in March 2018 to the Vice-Provost and Dean of Graduate Studies to initiate the cyclical program review of its graduate programs. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers and one internal reviewer were endorsed by the Dean, Faculty of Engineering, and selected by the Vice-Provost and Dean of Graduate Studies. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on April 9th and 10th, 2018. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost and Dean of Graduate Studies, Associate Dean, Grad Studies and Research, Chair of the program and meetings with groups of current students, faculty and support staff.

The Chair of the program and the Dean of the Faculty of Engineering submitted responses to the Reviewers' Report (June 2018). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

Strengths

- Very high-quality faculty and high-quality students in the graduate programs.
- Research intensive department with both basic and applied research through industry collaborations, interdisciplinary and collaborative initiatives.
- Very collaborative environment both for the faculty members and students. Collaboration is considered part of the "DNA" of the department and critical to its culture.
- Accelerated Master's program.
- Internship/Co-op programs in research intensive graduate degrees (Ph.D. and Master's).

Areas for Enhancement or Improvement

- The professional development of graduate students is an area of significant potential for the department. The department has a clear commitment to the graduate student experience and this would help the department to compete for graduate students with other universities.
- The committee has commented extensively on the language requirements and sees the resolution of this issue as a top priority.

Summary of the Reviewers' Recommendations with the Department's and Dean's Responses

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation
That the department continue its practices of intermingling graduate student office spaces between research clusters.	We will continue our current practice, as we agree with the recommendation that this is a strength area of the Department.	Chair and Departmental Administrator	Already implemented and to be maintained
The University and Faculty need to ensure that the space commitments to the department are honoured.	We believe that no follow-up is needed, since the Faculty of Engineering has always honoured the commitments made to our Department and trust is a cornerstone of how the Faculty has always interacted with our Department	Chair and Dean	Immediate and on-going
Continue to develop, in collaboration with the Faculty of Engineering, its graduate student teaching assistant workshops and career development initiatives. There was very positive support for these initiatives at the Faculty level.	We thank the reviewers for pointing out how valuable these programs are. The Dean and his office have been exceptional in establishing and supporting these programs, and we will continue to mandate and/or strongly encourage participation in these initiatives among our graduate students as well as participate in the delivery of such workshops/initiatives as needed.	Chair, Dean and Associate Deans	Already implemented and to be maintained
The department should begin using the TA teaching evaluations currently available at the University level.	This is a very valuable comment and we fully appreciated the need for TAs to receive feedback on their work. The current teaching evaluation questionnaires include a section regarding the TAs. The information on these sections is already typically passed on to the TAs by the course instructor, as long as confidentiality is maintained and after the comments are screened by the instructors for inappropriate content. The	Chair and Associate Chair (Graduate)	Already in place and reminder from Chair to be given to all faculty members every term.

	quantity and quality of the feedback is usually limited, but we have to ensure that in case specific feedback is given, that instructors do send it to the appropriate TAs. Every term the Chair will remind all faculty members that TA feedback should be sent to the TAs, if available in the questionnaires - if appropriate and maintaining confidentiality. The Chair will also encourage all faculty to provide specific feedback to their TAs independently of the student evaluations, as we agree this is valuable feedback for improving TA best practices as well as providing content for future teaching portfolios among the graduate students.		
Ensure that all students who wish to challenge themselves through various TA positions and teaching fellowships are provided an opportunity as appropriate.	We agree with the reviewers and would love to be able to provide as many opportunities as possible, but these opportunities are limited by budgets. Our Department is already over-extended in terms of the allocated budget for TAs. As a minimum, all graduate students get at least one term of TAing per year. If the budget allocated by the faculty is increased, we will happily give more TA opportunities to the students. We already provide a TA preferences questionnaire to graduate students to gauge their interest in various types of TA positions and will continue to use this questionnaire to best match student interests to available positions, while at the same time taking into account the appropriateness of the student's background for	Chair, Dean, Departmental Administrator, Associate Dean (Graduate) and Director of Finance/Administration	Budgets are given on an early basis

	the course and the needs specified by the instructor for the successful delivery of the course to ensure high quality undergraduate instruction. For any available sessional instructor positions, we will continue our practice of posting these positions openly to all Ph.D. candidates in the Department and interviewing interested candidates prior to any assignment being distributed		
Ensure that TAship in the department is viewed as one of the key professional development opportunities by providing various opportunities for positions, adequate training, and constructive feedback to the students.	We agree and we will continue to offer our annual TA training session to all graduate students. We will extend these sessions to emphasize the importance of communication as key factor for professional success. We will encourage our graduate students to take advantage of the many opportunities offered by the MacPherson Institute. In the academic year of 2017-18, our Department voted and unanimously supported changing our graduate course requirements to allow one of our required graduate courses to be in a non-engineering/science field, such as courses in teaching and learning. These changes have been approved at the Senate level, after approval by the Graduate Council. As such, it will now be easier for our students to gain additional training in this area while still fulfilling program requirements.	Chair, Associate Chair (Graduate), Associate Dean (Graduate) and MacPherson Institute	Already implemented new policy to provide flexibility for students to take at least one course that is outside of engineering/science to provide additional opportunities for professional development. We need to increase student awareness of graduate coops and industrial Ph.D. We will work with the Associate Dean to better advertise this to our students – this will be done in the next year.

	The Associate Dean has been very active and is developing capacity in the Faculty to increase the opportunities for professional development, such as coop for graduate students and industrial Ph.D. options. We will continue to support these options for our students.		
Review the requirement for Master's students to give oral presentations and/or other opportunities to communicate their knowledge to a wide audience.	We agree with the reviewers on this point. During our May retreat, we already voted to require all graduate students to present (either orally or through a poster) their research work in our annual research conference called MUCEC, attended by all graduate students and professors. While this formal change requires approval by Graduate Council and thus cannot be a formal program requirement until the 2019-2020 academic year, we have already updated the graduate student handbook strongly encouraging Master's students to deliver one poster presentation at MUCEC and will remind faculty members of our decision on this point prior to the next MUCEC conference to encourage high participation rates.	Chair, Associate Chair (Graduate) and Assistant Administrator (Graduate)	Already added to graduate student handbook. The paperwork to make this a formal program requirement for the Master's degree will be submitted in September. The Assistant Administrator has been tasked with monitoring that this requirement is met.
It is recommended that the department review the course offerings, especially in light of the accelerated Master's students only having one year to take graduate courses, and some courses are only offered on alternative years.	We agree with the reviewers, and for the academic year of 2017-18 we already got Graduate Council approval to modify our graduate course requirements to allow all our graduate students to take one non-technical course selected by the student (and approved by the supervisor) to provide an additional opportunity to professional development – this	Chair, Associate Chair (Graduate)	Already got Graduate Council and Senate approval to provide more flexibility in course selection and cross-listed many graduate courses. We will identify any essential graduate courses

	will open up a large number of potential courses that can be taken by the students. In addition, we cross-listed a large number of graduate courses to increase the available courses to all students. Finally, between 2015 till 2019, we hired 6 new professors, each bringing new graduate courses to the Department to significantly expand our range of course offerings. Most of these new courses will be coming on to the books in the next 2-3 years as these new professors become established, starting this year with a new course in Bacteriophage Biotechnology. In terms of allowing Accelerated Master's students more access to courses offered only in alternate years, we will review the course calendar and ensure that any graduate course that would be considered essential to success in a given project is offered with a frequency suitable for the Accelerated Master's program timing. We have already done this with our advanced statistics course (CHEM ENG 765), which was offered twice last year alone.		for Accelerated Master's students within the next year and will offer those courses on an annual instead of alternate year basis.
The department may wish to discuss how it will support the new internship and industrially based programs.	We did not yet have any students opting for this path, and this is a Faculty-wide initiative. The Chairs of all the Departments meet formally and informally at least once per month and best-practices will be shared. The Department was polled when this initiative was first presented by the Dean and Associate Dean and there was unanimous support. There is a long history of department-industry	Chair/Associate Chair (Graduate)/ Associate Dean (Graduate)/	Already started and current parameters will be revisited and adjusted as students make it through the program.

	collaboration which makes internships a natural process.		
The committee would suggest that the department specifically update the program learning objectives to reflect the new graduate programming specifically the work experience.	We agree with this recommendation.	Chair/Associate Chair (Graduate) in consultation with the Associate Dean (Graduate)/	This exercise will be started in 2018 and to be completed by 2020.
The Faculty of Engineering should encourage all graduate programs in the Faculty to address the matter of language proficiency requirements.	The Faculty of Engineering is aware of differences in language requirements. The Department of Chemical Engineering has already the highest language requirements in the Faculty and, at our May retreat, we voted to further increase the program requirements to a 91 minimum TOEFL score (minimum 20/category) and a 7.0 minimum IELTS score (minimum 6.5/category). The changes to the minima per category are particularly noteworthy in terms of ensuring that incoming graduate students have a complete set of language skills relevant to their success. These are now the second highest language requirements in Canada for Chemical Engineering – only second to the University of Toronto. This change needs to be approved by Graduate Council and will be submitted for approval for the 2019-2020 admission cycle.	Dean, Associate Deans and Chairs	The Dean has been very clear, for a couple of years, in insisting that all departments raise language requirements. Some Departments have responded positively (such as Chemical Engineering), while others have been more conservative because increasing requirements would decrease their graduate student counts. This issue is discussed at Dean's Council several times every year and there has been a gradual overall increase of the requirements thanks to the Dean and Associate Dean (Graduate)

That the Department, in consultation with the School of Graduate Studies, make information regarding the new language proficiency requirements accessible and transparent to prospective graduate students on all relevant websites.	We agree that the varying language requirement statements are confusing. We will ensure that there is consistency in all relevant webpages between the Faculty of Engineering, the School of Graduate Studies, and our department, after the new minimums are approved by Graduate Council.	Chair, Associate Chair (Graduate) and Assistant Administrator (Graduate)	Implemented and to be monitored on a yearly basis.
That the Department of Chemical Engineering admit all graduate students at a single IELTS or equivalent measure.	Our Department does not accept any students below the specified minimum and will not approve any requests for exceptions to these minima. In fact, after our Departmental Retreat in May, we voted to TOEFL/ILETS requirement to 91 (minimum 20 per category) or 7.0 (minimum 6.5 per category), making it the second highest in Canada for Chemical Engineering. We believe that the reviewers got the impression of a multi-tiered system, because different departments have different requirements and the Faculty does not have a common minimum.	Chair, Associate Chair (Graduate) and Assistant Administrator (Graduate) to ensure that these minimum requirements are met	Continuous monitoring and ensuring that applications not meeting the minimum requirements are not further considered, consistent with our current practice.
That Chemical Engineering develop new opportunities for graduate students, particularly Ph.D. candidates, to work in laboratories not only outside of McMaster, but also outside of Canada.	We currently have 2-7 graduate students participating in lab exchanges. We believe that this is best achieved at the supervisor/student level. Doing it at the Department level does not seem to be feasible since the Department does not have funds to support these exchanges and the supervisor/student are much better equipped to make the connections with different labs.	Graduate Students and Supervisors. Associate Chair (Graduate) to provide support to remove barriers	Already being done for many years. We will continue to accommodate these requests in terms of waiving seminar requirements, scheduling TA assignments etc. as appropriate to facilitate these opportunities.
That Chemical Engineering, in collaboration with the Faculty of Engineering	Please see response for previous item – the main issue is the same. We will certainly join with the Faculty on ongoing efforts to establish linkages	Graduate Students and Supervisors. Associate	Already being done for many years

develop key "partner" universities, particularly in institutions (e.g., in the U.S.) where strong relationships – through research collaborations already underway with faculty members – already exist.	with partner universities (most recently with Northwestern Polytechnic Institute in China and Penn State) and promote these exchange opportunities to our students.	Chair (Graduate) to provide support to remove barriers	

Dean's Response

The Faculty had read the reply of the program to the reviewers' recommendations and consider their approach prudent. They have identified urgent task versus long-term continuing areas for improvement. The reviewers in their assessment of Chemical Engineering found a department that has kept its attention on staffing, research output and teaching, concluding it to be a very strong and collegial department with significant research leaders at all rank levels.

The reviewers identified language proficiency standards as a minor issue to be addressed, which the program has responded that they will immediately handle through GCPC. They seem very concerned that the department and Faculty could have different minimums though it is not the philosophy in the Faculty to operating in a top-down manner; they encourage departments to aspire to the highest possible standards yet recognize that each discipline is in a much better position to set those standards provided undergraduate students encounter only high-quality TAs. The Faculty will continue to ask all of the departments to raise their minimums over time. The reviewers make a mistake though in stating an enrolled student who did not receive a TA due to their low proficiency score while applying may re-take the test to receive a TA later – that is not consistent with the Faculty internal policies.

Most of the big recommendations provided by the reviewers related to internationalization and external collaboration, giving the department some aspirational goals, though the Faculty doesn't see any links being made in the report to curriculum content or programming quality that would be relevant to this review exercise and so they don't consider these as urgent tasks.

The Faculty was gratified that the reviewers were excited by the faculty initiatives to include more workplace experiential learning in curricula and will continue to help Chemical Engineering and all other Engineering departments integrate these experiences in their programs. They greatly appreciate the hard work and effort undertaken by the reviewers and thank them for providing valuable suggestions that will help bring more visibility to the department as an international leader in research excellence.

Quality Assurance Committee Recommendation

McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow the regular course of action with a progress report and subsequent full external cyclical review to be conducted no later than 8 years after the start of the last review.

FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Globalization M.A.

Date of Review: March 28 and 29, 2018

In accordance with the University Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the M.A. program in Globalization. This report identifies the significant strengths of the program, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Executive Summary of the Review

In accordance with the Institutional Quality Assurance Process (IQAP), the Globalization program submitted a self-study in February 2018 to the Vice-Provost and Dean to initiate the cyclical program review of its M.A. program. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers and one internal reviewer were endorsed by the Dean, Faculty of Social Sciences, and selected by the Vice-Provost and Dean of Graduate Studies. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 28th and 29th, 2018. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost and Dean of Graduate Studies, Associate Dean, Grad Studies and Research, Director of the program and meetings with groups of current students, faculty and support staff.

The Director of the program and the Dean of the Faculty of Social Sciences submitted responses to the Reviewers' Report (May 2018). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

Strengths

The reviewers noted many strengths with the MA in Globalization program. The overall student experience with the program was judged to be exceptional. This is due primarily because of the high quality of the academic training, with students benefitting from a wide range of theoretical and methodological approaches to understanding globalization. The program's commitment to interdisciplinarity, its enthusiastic faculty, the flexible program structure, as well as the diverse academic and personal backgrounds of the student body were further identified as elements that enhanced the student experience. The reviewers also emphasized that the graduate program is consistent with, and indeed makes a unique contribution, to McMaster's Mission and Academic Plan.

Areas for Enhancement or Improvement

- Recruit additional tenured/tenure-track faculty to do core teaching in the graduate program
- Increase the profile and expand the network of the graduate program both externally and internally
- Enhance the opportunities for research training, experiential education, and community engaged research for graduate students
- Expand the opportunities for graduate funding (especially for international students) and improve the transparency of funding decisions
- Revitalize the governance structure and expand the staffing of the IGHC

Summary of the Reviewers' Recommendations with the Department's and Dean's Responses

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation
Improve the branding and marketing of the MA in Globalization in order to make its public and social media more coherent with its outlook and values	The IGHC will review its online and print materials that promote the MA in Globalization. The Marketing & Promotions Coordinator at the Faculty of Social Sciences will be consulted when developing a strategic plan about the marketing and branding of the graduate program.	Director	Fall 2018
Secure committed teaching units from tenure track faculty members	The IGHC will enter into negotiations with the relevant	Director	Fall 2018

from Social Sciences and Humanities at McMaster University for extended periods, ideally for 3-5 years stints, which would consolidate the program while building stable personal links with departments	Deans to secure additional teaching commitments from existing permanent faculty at McMaster.		
Build partnerships and explore possible collaborative opportunities with other programs	The IGHC will consult with the Directors of the MA in Gender Studies, the MA in Cultural Studies & Critical Theory, and other relevant graduate programs to identify potential areas of collaboration, cooperation, and partnership in order to enhance the student experience.	Director/Advisory Committee	Ongoing over next 3 years
Hire a part-time administrator to assist the Coordinator and increase opportunities to involving students in faculty research and training.	The IGHC will enter into negotiations with the Dean of Social Sciences to secure an additional staff position.	Director	Fall 2018
Explore opportunities with the Office for Community Engagement and look to commensurate programs for guidance and potential collaboration to develop experiential learning opportunities. However, be mindful of existing resources constraints and the material frailty of the program. In order to have a successful community engagement program, the MA would require additional personnel to manage the opportunities. In the absence of increased teaching units and	The IGHC will continue building its relationship with the Office of Community Engagement by connecting graduate students with research opportunities in the Hamilton area. Research opportunities that complement students' MRP papers will be prioritized. The level of engagement with this Office will be mindful of the administrative resources available at the IGHC.	Director	Ongoing

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administrative support, we do not recommend pursuing community engagement.			
Internationalization: where possible, more funding should be directed to offsetting international fees in the form of tuition waivers or scholarships. This will attract more international students to the program whilst maintaining its commitments to inclusion and accessibility for disadvantaged and marginalized people.	The IGHC will continue working with the Faculty of Social Sciences, in particular the Associate Dean of Graduate Studies and Research, to secure additional scholarships and other financial resources for international students.	Director	Ongoing
Increase research training opportunities for students.	The Advisory Committee will consider this recommendation and look to design research training workshops for all graduate students as well as increase the number of opportunities for students to work as Research Assistants. Further efforts will be made to integrate graduate students into the research life of the IGHC.	Advisory Committee	Ongoing over next 3 years
Improve marketing and profile with sister undergraduate programs beyond McMaster	The IGHC will promote the MA in Globalization to undergraduate students in relevant global studies programs across Canada and abroad. It will consult its 2015 report on the possibility of creating an undergraduate program in Globalization Studies at McMaster. This report conducted a detailed	Director	Fall 2018

	analysis of undergraduate programs in global studies. The IGHC will aim to marketing the MA in Globalization to students in these programs.		
Standardize the TA allocation process and make clear that these positions are allocated on a competitive basis.	The Advisory Committee will create new protocols for the distribution of TA positions and develop a transparent process for communicating how these positions are allocated to students.	Director/Advisory Committee	Fall 2018
Refine the research methods course such that it offers training opportunities beginning in first term and formalizes the workshop program.	The Advisory Committee will consider this recommendation as part of its overall consideration of how its core graduate courses (Globalization 709 and 710) are taught.	Advisory Committee	Fall 2018
Develop program streams to improve the coherence of the program and assist students in the design of their MA degree	The Advisory Committee will review the program structure of the MA in Globalization and make changes that will enhance the student experience while maintaining the academic integrity of the program.	Advisory Committee	Ongoing over the next 3 years
Consider improving experiential learning and community engagement opportunities by increasing the faculty resources involved and interchanging the MRP with field work opportunities.	The IGHC will consider this recommendation contingent on securing staff resources to support internships and field research opportunities.	Advisory Committee	Ongoing over next 3 years
Offer research assistantships in projects led to faculty members'	The Director will consult with the Dean of Social Sciences as	Director/Advisory Committee	Fall 2018

research programs, in place of scholarships	well as the Associate Dean of Graduate Studies and Research in order to determine the feasibility of this recommendation. The Advisory Committee will also reach out to IGHC faculty and encourage them to use their research funding to hire Globalization MA students as RAs.		
Re-introduce distinct positions for the direction of the MA program and of the Institute.	The Advisory Committee will consider this recommendation about the governance of the IGHC and graduate program once the new Director begins her five-year term in July 2018.	Advisory Committee	Fall 2018
Ensure that membership of the advisory group be broadly representative of the McMaster community and especially of those engaged with globalization issues, and that it be truly involved in the life of the program and of the Institute.	The Advisory Committee will review its membership on an ongoing basis in order to ensure that it is a diverse and representative body.	Advisory Committee	Ongoing
Develop a PhD Diploma/Certificate in Globalization that could be tacked on to a standard disciplinary PhD.	The Advisory Committee will consider this recommendation and consult with relevant PhD granting departments at McMaster about their interest in such an initiative. The viability of providing a Diploma for MA/MSc students in other programs will also be explored.	Advisory Committee	Ongoing over the next 3 years

Dean's Response

Overall, the reviewers provided a resounding endorsement of the program, while noting some areas for improvement and recommending some specific actions to undertake to address them. The reviewers emphasized the distinctiveness of the Globalization MA within the Canadian landscape of global programs (e.g., Munk, Balsillie, etc.), the exceptional student experience in the program, the intellectual rigour underlying its approach to the critical analysis of globalization and its effects, and the program's fit with McMaster's strategic focus on globalization and internationalization. As is often the case for interdisciplinary programs that cross departments and faculties, it relies heavily on the goodwill and commitment of participating faculty, and the reviewers lauded the commitment of participating faculty.

While the Faculty will support the IGHC as it implements the larger set of recommendations, the Dean focused his comments on those recommendations for which the Faculty may play a particularly important role.

1. Build partnerships and explore possible collaborative opportunities with other programs.

This recommendation is consistent with a greater emphasis within IGHC more generally on increased collaboration (research and educational) both with other units at McMaster and externally. While the report highlighted opportunities with Humanities, which should be explored, opportunities likely exist with other faculties as well. There may be scope, for instance, to expand the current collaboration within the inter-faculty Global Health graduate programs. A broader range of research collaborations with other academic partners external to McMaster may also lead to opportunities for exchange and other types of educational collaborations. The Dean's offices is happy to work with IGHC as appropriate to pursue such opportunities.

2. Secure committed teaching units from tenure track faculty members from Social Sciences and Humanities at McMaster University for extended periods, ideally for 3-5 years stints, which would consolidate the program while building stable personal links with departments

This, to be frank, is a challenging recommendation at a time when the faculty complements in both Humanities and the Social Sciences have fallen, overall course enrolments have grown, and, although the financial status of each has improved in recent years, both faculties continue to face fiscal challenges. Nonetheless, the Dean's office will work with the Director of IGHC, relevant Department Chairs and interested faculty, and the Dean of Humanities to explore opportunities to make such time-limited commitments to the Globalization MA. Working together, they may be able to identify creative ways to take advantage of shared interests that can provide greater stability to the MA program.

3. Hire a part-time administrator to assist the Coordinator

The administrator role is a shared position across the Globalization MA and general IGHC programming and activities. Changes to staffing therefore have to be considered within the larger context of demands across these two components of the position, and support provided by IGHC for its activities

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distinct from the MA program. They also have to be considered in light of the new responsibilities providing support for a limited set of administrative activities to the Water Without Borders program, an arrangement that began this past year (and is more limited than depicted in the review report).

4. *Internationalization: where possible, more funding should be directed to offsetting international fees in the form of tuition waivers or scholarships. This will attract more international students to the program whilst maintaining its commitments to inclusion and accessibility for disadvantaged and marginalized people.*

Admitting international students has been, and will continue to be, a challenge for the program. The Dean viewed this issue as linked to the discussion and recommendations about integrating students into faculty research. The reviewers too readily dismissed the contribution research funding associated with IGHC and its faculty can play in providing funding to support the admission of strong international (and Canadian) students. While tuition waivers can help and deserve to be examined, alone they will be of limited effectiveness. Working with IGHC, the Faculty needs to develop ways to expand the pool of resources available.

5. *Experiential Learning and Community Engagement*
   a. *Consider improving experiential learning and community engagement opportunities by increasing the faculty resources involved and interchanging the MRP with field work opportunities.*
   b. *Explore opportunities with the Office for Community Engagement and look to commensurate programs for guidance and potential collaboration to develop experiential learning opportunities. However, be mindful of existing resources constraints and the material frailty of the program. In order to have a successful community engagement program, the MA would require additional personnel to manage the opportunities. In the absence of increased teaching units and administrative support, we do not recommend pursuing community engagement.*

These two are linked. The reviewers correctly identify these as a challenge in a 12-month MA program. However, a number of aspects of the current environment suggest that there may be more opportunities than in the past. The greater emphasis on experiential learning in graduate training suggests that both more and more variety of opportunities will be available, even in the context of programs structures as the Globalization MA. Given that many of the faculty associated with IGHC conduct community-engaged research, better integration of Globalization students in the research of faculty should create opportunities for community engagement related to that research. This is also consistent with potential opportunities for students to get involved with the Office for Community Engagement through the research shop that it now oversees. So while resources and the nature of the 12-month program place real constraints on the nature and amount of experiential learning and community engagement that is possible within the MA, it is possible to improve upon the current situation.

6. *Re-introduce distinct positions for the direction of the MA program and of the Institute.*

This is an internal matter relating to the governance of IGHC and its programs. IGHC receives the same support for the Institute and the MA program (6 units of teaching release) as comparable units within the Faculty. The MA program is notably smaller than the graduate programs of departments

and schools in the Faculty, which counterbalances the increased administrative complexity of an interdisciplinary MA.

<div align="center">**<u>Quality Assurance Committee Recommendation</u>**</div>

McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow a modified course of action with a progress report and a modified internal cyclical review to be conducted no later than 4 years after the start of the last review. At the time of the internal review, the committee will be looking at progress that has been made in response to the recommendations and specifically, how the recommendations have been implemented with the resources available at the time.

FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Master of Health Management

Date of Review: January 22 and 23, 2018

In accordance with the University Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the Master of Health Management Program. This report identifies the significant strengths of the program, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Executive Summary of the Review

In accordance with the Institutional Quality Assurance Process (IQAP), the Master of Health Management program submitted a self-study November 2017 to the Vice-Provost and Dean of Graduate Studies to initiate the cyclical program review of the program. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers and one internal reviewer were endorsed by the Deans, Faculty of Business and Health Sciences, and selected by the Vice-Provost and Dean of Graduate Studies. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on January 22nd and 23rd, 2018. The visit included interviews with the Provost and Vice-President (Academic); Vice-PRovost and Dean of Graduate Studies, Associate Dean, Grad Studies and Research, Co-Directors of the program and meetings with groups of current students, full-time faculty and support staff.

The Co-Directors of the Program and the Deans of the Faculties of Business and Health Sciences submitted responses to the Reviewers' Report (March 2018). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

- **Strengths**

Master in Health Management (MHM) is an innovative program, exceptionally well run and is meeting the advanced education needs of health professionals. Overall, stakeholders (staff, full-time and part-time faculty, upper management, students and alumni) view this program positively. Two indicators reported in the self-study, student retention and time to completion, reflect a rigorous, yet appropriately paced, program that selects the right candidates. Revenues are reinvested in support of faculty (research and conferences) and students (awards). Current innovations in the program to integrate a full-time stream and course development to support experiential learning options are key indicators of the ongoing responsiveness of the program to student demand and feedback.

- **Areas for Enhancement or Improvement**

The program noted that the following items were worthy of their attention but not included by the reviewers in the section called areas for enhancement/improvement:

1. Reviewers note that the admissions process of non-regulated healthcare professionals should be more transparent. Admission requirements for non-regulated healthcare professionals are listed on the program website. Applicants are required to submit a one-page letter outlining their educational and work experience and provide a clear rationale as to how these have prepared them for meeting the following core competencies of the Master of Health Management Program:

   a. Awareness of the political and healthcare environments

   b. Organizational behaviour and human resources management

   c. Financial management

   d. Research awareness

   e. Leadership

The statement regarding the letter and the core competencies is linked to the admissions page; based on the feedback of the review team they will ensure that this is included on the main page and added to the MHM Program description of the 2019-2020 Graduate Calendar. They will discuss at a future executive meeting the inclusion of non-regulated healthcare professionals, review data on the achievements of the non-regulated health professions who have completed the program and determine whether additional admissions criteria are warranted.

2. The reviewers suggest that the feasibility of offering travel bursaries for students to attend the residency be investigated and considered by the MHM executive. The program will review the need and financial implications of providing travel bursaries for students. As current students are working full-time, we do not anticipate that there is a significant need. However, they are mindful that the costs associated with attending the residencies could be significant in the full-time cohort. If demonstrated

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need is apparent, then a process will be developed and shared with students in time for 2019 Spring Residency.

3.   On an ongoing basis, pre-course skills will be identified by instructors and appropriate modules will be added to the MHM Virtual Office for students to gain various proficiencies that could attribute to course success.

4.   The reviewers note that there was little information about academic services accessed by students and their level of satisfaction with these services. The program will implement a survey of current students and recent graduates of their use of available student services to assess utilization and need.

Summary of the Reviewers' Recommendations with the Department's and Dean's Responses

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation
Curriculum (EDI, Canadian content and examples)	-Although not always explicit, the topic of EDI is included in some courses (HM700-Health Policy, HM708–Leadership). We recognize that aspects of EDI could be included in all courses. We will poll current instructors about the inclusion of EDI in their courses to understand our baseline. We plan on having this as a discussion topic at the Fall 2018 Instructors Meeting. Instructors will discuss personal strategies to include EDI in their curriculum. Instructors will add a statement about EDI to their course description of the 2019-2020 Graduate Calendar. -Some courses do include content dealing with other provinces/countries. In HM700–Health Policy and HM731-Economic Evaluation students have the freedom to complete an assignment using any province/state/country. Instructors will discuss personal strategies to include more Canadian/ world content, and interprofessional examples that are more relatable to all students in their curriculum at the Fall Instructors Meeting.	-Instructors -Executive	Initiate at Fall 2018 Instructors Meeting. Adopt new and better examples each year.

Curriculum (human resources, digital health, quantitative analysis techniques)	The core content of the program and courses is reviewed annually. -Aspects of human resources (HR) are included in HM706–Health Foundations I, HM708–Leadership, and Spring Residency (Conflict Mode workshop). We will discuss key HR learning outcomes at a future executive meeting and where best to include these materials: in an existing course(s) or an online module. -Digital health is not significantly core to MHM curriculum. Students interested in this topic have the choice to focus on this area by completing an elective, HM730-Scholarly Paper, or HM798-Experiential Study. -Including quantitative analysis techniques is beyond the scope of the MHM Program. Students interested in this topic have the choice to focus on this area by completing an elective, HM730-Scholarly Paper or HM798-Experiential Study.	-Instructors -Executive	At future executive meeting discuss key HR learning outcomes and determine where to include these aspects in the curriculum by Fall 2019.
Enhance mental health supports for distance students	Through the Student Handbook and during the Fall Residency, we will increase student awareness of available mental health supports (in-person or by phone). Staff have completed QPR training. We will send annual reminders to Instructors and MHM staff of available mental health supports for students. Instructors have mental health resources available in the Instructor Guide and the Instructors Virtual Hub. These resources are used to support and redirect students when appropriate.	-Instructors -MHM staff	Reaffirm supports to instructors, staff and students at the beginning of each academic year.
Provide informal, confidential mentoring opportunities	Group work and residency periods offer students the opportunity to develop community within their cohort and outside of their cohort. During the residency and within the Student Handbook, we will provide a	-Program Manager -Co-Directors	Include in Student Handbook and Orientation for each Fall Residency.

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	list of ways students have and can create mentoring opportunities. It is our impression that some students have organically developed these relationships through Facebook, etc. The nature and means of these opportunities can differ based on the needs of the students.		
Marketing (program name, interprofessional)	We have not heard this feedback previously. Thank you for bringing it to our attention. We will amply promote the interprofessional nature of the program and highlight its value to the student experience. All marketing materials including the website and brochures will be reviewed and updated to include additional strengths of the program such as flexible, leading, doable, and interprofessional. We acknowledge that there has been some unfamiliarity with the degree designation of MHM. To counter this, we will ensure that students develop awareness of the differences between a MBA, MHM, and MHA degree with the intent to educate and advocate about the nature, content, and value of the MHM degree. We are confident that there will be more clarity in the community as we produce more graduates who can advocate on behalf of the program.	-Program Manager -Co-Directors	To be completed by Fall 2018. Ongoing with each new group of students.
Program planning (PhD and career pathways)	Advise students during Fall Residency and Spring Residency about the connection between course selection and academic/career pathways. Examples of careers such as management in health system, consulting, policy, etc. could be included.	-Program Manager -Co-Directors	Include in each Spring and Fall Residency.
Student input through focus groups	The MHM Program gathers student input after each residency, each course, and one year after graduation. Informally students provide program input during the	-Program Manager	Include in each Spring Residency.

	Spring Residency. A formal focus group could be led by the McPherson Institute during the Spring Residency. Any other time may be challenging given the fact that our students and alumni are located across Canada and abroad.		

Dean's Response

The Deans' appreciated that the reviewers recognized the innovative nature of this program that combines both business and healthcare administration. They agreed with their perception that the joint government and management is working very effectively and that the program does not have any major weaknesses. They appreciated the enhancements that were recommended for greater transparency in the admission of non-regulated healthcare professionals and to improve mentoring and mental health supports given that the primary mode of program delivery is through online courses. They also appreciated the suggestion to further develop the curriculum in some specific content, including issues related to equity, diversity and inclusion, human resource management and the coordination and delivery of healthcare to diverse populations and beyond the Ontario environment. The positive feedback on how the program is being run by the co-Directors and on the program's quality indicators and enhancements was appreciated.

They reviewed the program response to the reviewers' reports and fully agreed with their plans to address the suggested improvements, including the supports to attaining pre-course skills for those in need, enhancement to the program curriculum, and the enhancements to admissions for non-regulated healthcare professionals. They will be following the progress of these changes. Related to exploring needs for travel bursaries, they agreed with the program's view that the needs may not be significant given that current students are working full time. They support the plans to improve marketing, survey current students and recent graduates about academic services, and to increase student awareness of the interprofessional strengths of the program, mental health supports and mentoring opportunities. They also agreed with the plan to use the residency periods to discuss the possibility of PhD and other post-MHM completion career pathways.

Quality Assurance Committee Recommendation

McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow the regular course of action with a progress report and subsequent full external cyclical review to be conducted no later than 8 years after the start of the last review.

FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Materials Science and Engineering – Graduate Programs

Date of Review: February 6th and 7th 2018

In accordance with the University Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the graduate programs delivered by Materials Science and Engineering. This report identifies the significant strengths of the program, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

<u>**Executive Summary of the Review**</u>

In accordance with the Institutional Quality Assurance Process (IQAP), the Materials Science and Engineering program submitted a self-study in December 2017 to the Vice-Provost and Dean of Graduate Studies to initiate the cyclical program review of its graduate programs. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers and one internal reviewer were endorsed by the Dean, Faculty of Engineering and selected by the Vice-Provost and Dean of Graduate Studies. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on March 30 - 31, 2017. The visit included interviews with the Provost and Vice-President (Academic); Associate Vice-President, Faculty, Associate Vice-President and Dean of Graduate Studies, Associate Dean, Grad Studies and Research, Chair of the department and meetings with groups of current students, full-time faculty and support staff.

The Chair of the department and the Dean of the Faculty of Engineering submitted responses to the Reviewers' Report (April 2018). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

- **Strengths**

The Reviewers have highlighted the following as clear strengths of the Department's Graduate Program: (i) reputation for research excellence and achievement, (ii) world class resources housed within the Department's research centres (CCEM, SRC and CAMC) and (iii) quality of the student experience. The global reputation for research excellence and achievement is based on two key aspects. First, is the Department's record of research excellence awards, as contributed by both graduate students and faculty members. Second, is the Department's healthy and sustainable funding lever per full-time equivalent, which is viewed as being above average for a Materials Science and Engineering program in Canada. The world class resources are based on the state-of-the-art research instrument and tools that have been acquired over the past decade and half as part of successful capital grants applications along with the associated modernized space that is available for graduate research. The quality of the student experience is based on the generous level of financial support that is provided along with the incorporation of graduate students into the Department's administrative functions.

An emerging strength recognized by the Reviewers is the set of recent faculty hires at both the assistant and associate levels, as these hires have both expanded the breadth of research offerings in the department and increased the gender diversity of the faculty. The biomaterials hires in particular were called as having significant potential for expansion into biomedical research by coupling with the School of Medicine, which is a globally recognized area of strength for the University.

- **Areas for Enhancement or Improvement**

The Reviewers have highlighted the following relevant areas for enhancement: (i) future hires, (ii) career planning initiatives and (iii) additional course offerings. A future hire in the field of computational materials science would strengthen this under represented areas at the Department and serve to enhance the breadth and depth of research expertise available. Expanding the career planning initiative to include follow up activities and incorporate industry involvements will serve to enhance the quality of the quality of the student experience. Leveraging courses offered at other universities via video link will serve to provide increased coursework options such that the associated program learning objectives can be realized in more student-specific manner.

The Reviewers have highlighted the following areas for improvement: (i) website, (ii) removal of the Materials Science degree designation and (iii) modification of the graduate seminar course. An improved website will serve as an effective tool to better promote the Department's programs and research opportunities that are possible taking advantage of world class faculty and research infrastructure whilst enjoying a high-quality student experience. A simplified offering of two, rather than four, core degree programs (one at the Master's level and the other at the PhD level) will remove a "quirk" that is not typical of Materials Science and Engineering programs worldwide and, thus avoid confusion for potential graduate students. A modified graduate seminar course will ensure that the both the "speaker" (feedback assessment) and "audience" (active learning) roles are indeed aligned with the program learning objectives, as indicated on the Department's curriculum map.

Summary of the Reviewers' Recommendations with the Department's and Dean's Responses

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation
Update website and make it more exciting for potential graduate students	-Work with Faculty web masters to share resources to decide on layout and acquire content for updated website	Department Leadership (Chair, Associate Chair - Undergraduate and Associate Chair - Graduate)	Summer Term 2018
Remove Materials Science Degree (at both Master's and PhD level)	-Held Department meeting in March to discuss this specific recommendation -Consensus to offer one degree each at level (Master's and PhD): Materials Science and Engineering	Department Leadership (Chair and Associate Chair - Graduate)	-Prepare and submit necessary paper work to GCPC during 2018-2019 academic year
Modify graduate seminar course	-Strike a Department committee to examine the recommendation is detail and then propose a solution strategy	Associate Chair – Graduate to chair the Department committee	- Committee meetings to be held during Summer and Fall Terms - Decision early in Winter Term - Prepare and submit necessary paper work to GCPC during before deadline for 2019-2020 academic year
Future hire in computation materials	Already identified as priority area in Department's strategic hiring plan	Department Chair	- Discussions are ongoing with local industry to develop and industrial research chair in this area. - Our hiring plan also aligns with the Faculty's *Smart Systems* priority area. We will be submitting a proposal for hiring in the area of AI.
Expand career planning initiatives	-The Faculty of Engineering is already in the process of	Associate Chair - Graduate	Summer Term 2018

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	releasing online career planning modules. -Work to promote these modules and encourage graduate students to complete them.		
Additional course offerings through video-link	Strike a Department committee to examine the recommendation in detail and possible pathways forward	Associate Chair – Graduate to chair the Department committee	- Committee meetings to be held during summer term as trail run could be offered as Special Topics course in 2018-2019 academic year

Faculty Response:

The Faculty extended its gratitude to the reviewers, department staff, graduate students and faculty members who carried on this important task. Materials Science and Engineering (MSE) is the oldest department in the Faculty and represents a strong foundation upon which the Faculty has built its international reputation. The Faculty accepted the report as a very positive indicator of the high quality academic programs it offers and the open, collaborative social environment it creates for its graduate students.

The faculty has undergone substantial growth over the past four years, with MSE hiring four tenure track professors in areas of biomaterials and materials processing/characterization. Requests for future hires will be accommodated in the fullness of time as student demand requires, but for the moment the Faculty will be unable to cover the requested computational faculty position. Neither the program nor reviewers are identifying computational research as a knowledge deficit impairing the quality of the programs or reputation of the institution, and so they will accept the recommendation as meant for future discussions with the department on their strategic plan.

The overlap in degree requirements between the science and engineering degrees (both Master's and Doctoral) has been a recent source of confusion and the Faculty was happy to acknowledge that the department will be eliminating the science degrees. The Associate Dean will assist the department in moving these changes, along with the course changes, through the mechanisms of the university starting in the fall of this year.

Quality Assurance Committee Recommendation:

McMaster's Quality Assurance Committee (QAC) recommends that the Materials Science and Engineering graduate programs should follow the regular course of action with an

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18-month progress report and a subsequent full external cyclical review to be conducted no later than 8 years after the start of the last review.

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FINAL ASSESSMENT REPORT

Institutional Quality Assurance Program (IQAP) Review

Psychology – M.Sc. and Ph.D.

Date of Review: April 19 – 20, 2018

In accordance with the University Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the graduate programs delivered by Psychology. This report identifies the significant strengths of the program, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.

The report includes an Implementation Plan that identifies who will be responsible for approving the recommendations set out in the Final Assessment Report; who will be responsible for providing any resources entailed by those recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations and who will be responsible for acting on those recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

<u>**Executive Summary of the Review**</u>

In accordance with the Institutional Quality Assurance Process (IQAP), the Psychology program submitted a self-study in March 2018 to the Vice-Provost and Dean of Graduate Studies to initiate the cyclical program review of its graduate programs. The approved self-study presented program descriptions, learning outcomes, and analyses of data provided by the Office of Institutional Research and Analysis. Appendices to the self-study contained all course outlines associated with the program and the CVs for each full-time member in the department.

Two arm's length external reviewers and one internal reviewer were endorsed by the Dean, Faculty of Science and selected by the Vice-Provost and Dean of Graduate Studies. The review team reviewed the self-study documentation and then conducted a site visit to McMaster University on April 19 and 20, 2018. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost and Dean of Graduate Studies, Associate Dean, Grad Studies and Research, the Chair of the program, meetings with groups of current students, full-time faculty and support staff.

The Chair and the Dean of the Faculty of Science submitted responses to the Reviewers' Report (June 2018 and August 2018). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

Strengths

- PNB is a high functioning, collaborative, and integrated department, and this reflected throughout the graduate program. The strengths of this program include a flexible and individualized program, a high degree of collaboration that allows each student to work with multiple faculty members, and extensive opportunities for graduate students to engage in mentorship of research assistants. PNB is unusual among psychology graduate programs in maintaining a well-integrated research-intensive program that has not split into multiple streams or fields of study.
- The IQAP review team stated in their review (page 5) that the "PNB graduate program is high quality and well-functioning". They further stated that the program provides a rich and collaborative program for our students, and that PNB has an uncommonly high level of collaboration and cohesion across the department. They noted that we "successfully combine rigorous academic graduate training with a strong sense of collegiality".
- The review team noted that research in PNB is very strong, based on publication and citation rates, as well as international reputation.
- The reviewers were very positive about the recent introduction of the Research and Clinical Training (RCT) stream. They stated that the objectives of this new stream, which is to provide a small number of students each year with opportunities for strong clinical research training, and to do so in a manner that maintains integrity with the PNB program more broadly, have been largely met. There is a high level of satisfaction with its current delivery and a strong sentiment that the success of the stream to this point is in large part owing to the strong partnership between PNB and Psychiatry that oversees its administration.
- The review committee expressed a positive opinion about the curriculum, in which the department achieves the program's learning outcomes in a manner that reflects disciplinary tends in the field using a strong "teaching at the bench" apprenticeship model, and by interdisciplinary work, collaboration, and acquisition of strong statistical and computational skills.
- The review team emphasized the cohesion of PNB very positively, as follows: "The extent to which opportunities for collaboration and interdisciplinary research are built into all components of the curriculum was viewed by the reviewing committee as an especially innovative feature and unique strength of the PNB graduate program. We were struck by how purposeful this aspect of the curriculum design was, and to what degree it was reflected in the department culture as a whole, which exudes a spirit of cooperation and cohesion. It is more common for Psychology departments to be functionally split into separate research areas. The PNB department at McMaster has done exactly the opposite and maintains a remarkable level of cohesion across the subdisciplines of psychology, to the benefit of the graduate program."
- In addition to the formal program requirements and expectations, students gain the opportunity during their graduate studies to develop strong mentorship skills by actively participating in the supervision of undergraduate project students and volunteers. It is common practice for undergraduate students in years 2, 3, and 4 to assist graduate students in their laboratory research, and to collaborate with graduate students on data analysis and

writing papers. The committee was extremely impressed by the level of engagement of graduate students in this apprenticeship model that would clearly facilitate students in achieving many if not all of the Graduate Degree Level Expectations and corresponding program learning outcomes.

- Even within the areas of improvement identified, the reviewers stated that the members of PNB seemed well-attuned to the challenges, and well-prepared to respond.

Areas for Enhancement or Improvement

- The executive summary offered by the review team: In general we conclude that the PNB graduate program is of very high quality. All of our recommendations should be considered as minor recommendations and are not meant to detract from our general conclusion that this is a very strong program.
- The reviewers confirmed that the program functions very well but could be further enhanced through formalizing some processes in procedures. This would particularly benefit the program moving forward as new faculty members are recruited as supervisors. Providing clarity about topics such as composition and term length of the graduate studies committee, graduate course offerings, expectations around reading group courses would enhance the transparency of the program for newcomers without sacrificing the very strong sense of collegiality and community.
- During the review the topic of long-term funding for core facilities, such as the LiveLab, came up. This is a common challenge in Canada where there is a challenge in funding ongoing operation of infrastructure built with CFI funding. The review team stated that the PNB department and university will need to work together in the long-term for the operation of such facilities.
- PNB is top heavy due to challenges related to hiring. They have not been able to add to the faculty complement in recent years. Moreover, there is an imbalance in the male:female ratio in the research stream that has widened considerably over the last several years.
- The program would like to improve their skills at developing and offering workshops on professional development for both academic and industry related careers. This might be done effectively in collaboration with other departments, and to that end we will coordinate through School of Graduate Studies.

Summary of the Reviewers' Recommendations with the Department's and Dean's Responses

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation
Recommendation 1 PNB should continue to work with the Faculty of Science to identify how to use funds to attract international students and enhance internationalization. **Context:** The review team wrote: "The department has a very strong international reputation. Based on our meetings with faculty and graduate students, it appears there is a lack of clarity regarding the financial support recently made available for international graduate students. We see an opportunity here to build on existing strength. The PNB program should continue to work with SGS to identify how to use recent funds made available for international Ph.D. students in a manner to facilitate internationalization."	The site visit (April 19-20, 2018) was held at the same time as changes to international graduate tuition and support were being discussed and implemented at McMaster, so the sense of lack of clarity when talking to faculty and students was likely a function of these new opportunities being in transition. The School of Graduate Studies (SGS) has been working closely with faculties and departments to optimize our international PhD student fee structure in light of the Ontario government's modified structure of funding to Ontario universities.	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC), School of Graduate Studies (SGS).	Ongoing now, in consultation with Faculty of Science and SGS.
Recommendation 2 PNB should continue best practices in graduate student recruitment and work to ensure implicit biases are minimized throughout the recruitment process. **Context:** The review team wrote: "Based on discussions with faculty members it appears the program is already doing a good job of ensuring that admission is based on merit and not	As a department they recognize the power of implicit biases and the challenges involved in identifying situations where implicit biases play a role. They have	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	Over the 2018-2019 academic year (and beyond) we will continue to improve our process for reviewing graduate

how sociable or "like us" the applicants are. We encourage the program to continue to face this challenge and to codify practices to continue to reduce any implicit biases (which we are all subject to) in the admission process."	organized workshops around these issues and will continue to address this important issue going forward. With respect to graduate recruitment, they agree with the review committee that it is important to codify the assessment criteria used in the recruitment and admission process so that we can better evaluate our responses and work on minimizing effects of implicit biases. We would like to underline the importance of identifying and reducing implicit biases in other areas as well, such as hiring practices.		applications, as well as improve our evaluation process over the recruitment weekend activities. They are mindful of the need to apply these same improvements to our hiring processes.
Recommendation 3 (Curriculum): The program should formalize existing criteria for student performance and progress to ensure that assessment of student progression is transparent and accountable. **Context:** The review team wrote: "While the committee was impressed by the element of flexibility that is built into the curriculum, allowing students to tailor their program in manner that best befits their interests and career development, we would encourage the department to continue to develop practices to ensure clear and accountable processes on student performance and progress. For example, it was not entirely clear to us what the process is (or whether there is a formal process in place) for following up with students who are identified as progressing with difficulty during the course	The program stated that their procedure for monitoring individual student progress is quite good at present but could well benefit from additional measures as recommended by the IQAP review team. Currently, their process for monitoring progress is designed to create a paper trail of progress each year, including supervisory committee meeting reports, progress report evaluations, and review of each individual student at the annual June faculty meeting. Students who are not progressing as well as desired are identified at the June	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	This will be resolved over the 2018-2019 academic year.

of the annual evaluation meeting, and also for ensuring that students complete course requirements in a timely manner. Although we understand that the supervisory committee is expected to follow up with the student and create a plan when performance is unsatisfactory, we would recommend that consideration also be given to the Graduate Chair providing a letter with feedback from the department."	meeting and both the supervisory committee and the graduate chair follow up on these students. There is a process already in place such that a letter from the graduate chair and SGS is prepared when a student is substantially off-track in their progress. This is a very rare occurrence and they believe it is rare because our system of monitoring and guiding students is very successful. However, they agree with the IQAP review team that in some cases, a letter from the graduate chair with feedback from the department could be a valuable addition to our process. The GSC will develop a proposal for criteria for such a letter.		
Recommendation 4 (Curriculum): PNB should continue to ensure that adequate numbers of graduate courses are offered each year, with as much advance notice as possible in order to facilitate student planning. **Context:** The review team wrote: "We encourage the department to continue to be mindful of offering an adequate selection of courses each year, and to provide as much advanced notice of upcoming course offerings, such that students are able to optimize the feature of flexibility built into the program in a manner that is not constrained by course availability. This is an issue that came up in both our meetings with students and faculty. We recognize the challenges associated with timetabling	Improvements in course offerings, especially providing advance notice of what will be offered in the coming year, is already underway. In the past, scheduling of undergraduate and graduate courses has been organized separately, with undergraduate commitments obtained in December and January, and graduate commitments obtained much later in the year. The program sees an opportunity to improve scheduling of graduate courses by yoking	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	The program had already started earlier this year to confirm course availability for 2018-2019. They expect to have the new system in place for 2019-2020. The GSC will prepare course substitution guidelines for

of courses, and also that the department is making efforts to address the matter." **Further context:** The review team also pointed out that PNB could set in place more explicit guidelines regarding course credit for reading groups and online courses: "While the committee applauds the flexibility and opportunity for program customization that this mode of delivery affords students, it was not clear to us what safeguards are in place to ensure quality control. We would encourage the department to develop a clearly articulated set of expectations and reporting process for the administration of these courses. Likewise, in the Self Study it is mentioned that students are sometimes given permission to complete online courses in fulfillment of course requirements. The process for approving these courses, or what assessment criteria they are expected to meet in order to ensure that they are achieving the intended learning outcomes is not clear. In addition, it is not mentioned whether there are a maximum number of credits that can be obtained via this option. We encourage the department to clearly articulate the approval process, including quality assurance. "	the undergraduate and graduate scheduling. This way they can post graduate courses months earlier. With respect to offering course credit for reading groups and online courses, the program thinks these options provide valuable flexibility for the students whose needs are diverse. In the case of course credit in a reading group setting, their approach has been to carefully structure content and assessment so that the requirements meet the expectations for a graduate level quarter-course or half-course. To this end, a course outline is constructed by the faculty member overseeing the reading group and is approved by the Graduate Studies Committee. In the case of an online course, the study module is negotiated between the student, the faculty member who oversees the student's work, and the Graduate Studies Committee. They have added information to our Graduate Handbook with specific guidelines regarding expectations and evaluation.		implementation in 2018-2019.
Recommendation 5 (Curriculum): We commend the PNB department's attention to	As the program outlined in their self-study, there are substantial efforts by SGS and the McMaster Graduate	PNB chair, PNB associate chair	To start, the program will

professional and transferable skills development in students, and recommend they continue these efforts at both the program level and in conjunction with SGS. **Context:** The review team wrote: It was the impression of the committee that more focused attention may be given to ensuring that students receive adequate opportunities for professional skills development, including encouraging students to take advantage of offerings by SGS. We understand that professional development is a component of the Contemporary Problems course that all students take in their first year, and is a component that is currently in development. We also recognize that the department has, since the last review, made efforts to prepare students for careers outside academia, including expanding course offerings in computational and skills-based methods, and organizing events that allow current in-program students to establish a network with former students who have successfully navigated the path to industry. We commend the department for these efforts, and encourage them to continue to develop this component of their curriculum."	Student Association to offer workshops and other events that provide professional skills development. They already offer professional development classes as part of first year Contemporary Problems. They are working on improving these offerings for all of their students. Moreover, they are committed to learning more about the transition from academia to industry, so that the program can either provide workshops or point students to existing workshops that develop skills for both academia and industry.	(graduate), PNB Graduate Studies Committee (GSC).	expand their professional development series in CP for 2018-2019, and continue to identify (on campus and in the community) or develop a wider selection of lectures and workshops across the next two years.
Recommendation 6 (Teaching and Assessment): We recommend that the PNB graduate studies committee continue to monitor the functioning of the Contemporary Problems course in light of recent and potential increased enrolment. **Context:** The review team wrote: "There is a sense among some students that the 'program has outgrown the course'. We understand that discussions between faculty and students have begun on how some aspects of the course design may be modified to support	The Contemporary Problems (CP) course is team taught by a rotating set of faculty members each year and is meant to provide breadth of knowledge about current research areas in the department, as well as offer tutoring on issues related to professional	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	They expect to transition over the next two years towards a model that can better satisfy the larger class sizes.

growing enrollment numbers, but in a manner that does not compromise those features of the course that seem to be working well. We commend the department for already initiating conversation on this issue in response to student feedback received in the course of preparing the Self Study, and encourage them to continue to refine the delivery and assessment of the course in a manner that reflects changing enrollments in the department."	development. Moreover, it serves an important cohort building function for the incoming class. As the incoming graduate class grows larger, they must reorganize the way they offer CP so that important features are not compromised (e.g. student involvement in discussions). The program is exploring options, in consultation with faculty and students, to revise some components of CP and will be implementing a set of changes in 2018-2019 to enhance this valuable course.		
Recommendation 7 (Teaching and Assessment): PNB should continue its existing culture of sharing equipment and resources for graduate students across labs. **Context:** The review team suggested: "The department does not appear to have any current plans for renovations of facilities, but if and when such renovations are considered the program may benefit from moving from having graduate students and equipment housed in individual labs to a more open concept core facilities model. This would allow the physical layout of the department to more fully support the cohesive and collaborative nature of the program."	The collaborative nature of the graduate program helps to maintain their success with sharing equipment and resources. There is enough space in the human research labs for their students to have their own desks in the lab itself. However, this does not work for the animal research labs and in that case the students share space in an open concept space. There are advantages and disadvantages to both these models. If the program is fortunate enough to be able to renovate department facilities in the future,	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	They do not expect to renovate facilities for all graduate students in the near future, but they do evaluate student working space each year. For example, this year (2018-2019) they are redesigning the space for the graduate students working

	they will consider these pros and cons and decide whether to move to a more general open concept work space for all students.		in animal research labs.
Recommendation 8 (Academic Services): PNB should work with central administration to ensure adequate access to site-licensed software required by graduate students. **Context:** In our review the only academic service that appeared to need improvement was central site licensing of necessary software packages. It was not clear if this would be a Faculty or University responsibility at McMaster. Provisioning site licenses for necessary core software (e.g. Qualtrics, MatLab) is typically most efficiently done at an administrative level higher than the department. We encourage an exploration of how to most effectively to provide licenses for core, and necessary, software packages that support the graduate program in PNB and others on campus.	The program was in strong agreement that adequate access to site-licensed software is a critical element for productive research, and that this element could be improved at McMaster for some software packages such as Matlab. They will talk with administration at the faculty and university level to improve this critical support.	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	The program will initiate these discussions immediately, over the 2018-2019 academic year.
Recommendation 9 (System of Governance): The department may wish to be more explicit in regard to detailing the policies by which the GSC makes decisions and implements changes, perhaps as part of the Faculty-wide process of updating Department by-laws and program handbooks.	Over the 2017-2018 year the program has made substantial improvements by developing a PNB Graduate Handbook, as well as a handbook specific to the Research and Clinical Training stream. A graduate student committee was formed during the winter term (2017-2018) to work with the graduate chair to construct the PNB Graduate Handbook. We	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	These improvements are ongoing now; the program expects that updates will be needed each year. In fact, they are also revamping the department website

	designed the Graduate Handbook as a WIKI so that changes can be made at anytime in collaboration with faculty and students. Thus, the PNB Graduate Handbook is a "living" document such that it is edited and improved each time a question is raised or a clarification is needed. They are also working on updating PNB department by-laws.		on which department by-laws will be shared.
Recommendation 10 (System of Governance): Consideration may also be given to implementing a system whereby membership of the GSC is determined by election with renewable fixed terms.	Traditionally, the chair of the department is elected for a fixed term, and the associate chairs are selected by the chair for that same fixed term. The typical process for determining committee membership on GSC (as well as other department committees) involves a careful evaluation by the chair of the department of service and duties carried by faculty members. Assignment to committees is done in collaboration with associate chairs and the relevant faculty member so that the workload is shared fairly, and so that membership rotates across committees. Thus, each committee will usually have a rolling membership, with the chair	PNB chair, PNB associate chair (graduate), PNB Graduate Studies Committee (GSC).	During the 2018-2019 academic year they will propose to the department the idea of changing our system such that the department would elect members of the GSC to serve over a fixed term.

	of the committee first serving as a member of the committee for 2 or 3 years, and members of the committee cycling out to different committees after serving for 3 or 4 years on a staggered basis so that the committee always consists of new and experienced members. This system has worked very well for the department.		

Deans Response:

This Dean's response was prepared by the Dean of Science with input from the Associate Dean of Science (Graduate). The Dean thanked the review team for their efforts during the site visit and preparation of the report. The review highlights the strengths of the PNB graduate program and indicate that it provides a high-quality, collaborative training atmosphere, and where impactful research is carried out by graduate students. It is worth noting that graduate enrolment in PNB has increased by about 25% since the last review took place in 2009, in part due to the new RCT stream. In spite of the substantial growth, the program has done extremely well with regards to maintaining the quality of the experience, the careful and consistent methods of assessments, and the overall academic progress of students.

The Program has provided a detailed response to the review recommendations and we agree with both the recommendations and those Program responses. In some specific areas we have provided additional information and context to supplement the program responses and action plans. The reviewers were positive about Program graduate curriculum map of learning outcomes and the fact that these meet degree level expectations. The Dean noted that the recommendations with regards to course offerings have been adequately addressed by the department and agreed with the timelines for implementation and action.

The recommendation to enhance reputation by recruiting international Ph.D. students is timely since starting 2018-19 McMaster has equalized the tuition of this category of students. This step should make PNB more attractive to recruit the best students from other countries. Also, Dr. Bhagwati Gupta (Associate Dean of Science, Graduate) is working closely with PNB, as well as other graduate programs, in the Faculty of Science to develop graduate program specific international student strategic plans and to understand the associated resource needs to support these internationalization efforts.

The Dean agreed with the recommendation of developing best practices and accountable processes in order to follow up on performance and progress of students effectively. The program recognizes that it is an important issue and will be taking steps to strengthen the processes currently in place. The Faculty of Science will work to support these efforts.

The Faculty of Science supports efforts towards professional skill development of graduate students. In fact, McMaster is currently participating in one of the OCAV Taskforce pilot projects on Graduate Experiential Learning that is led by Bhagwati Gupta, Associate Dean of Science (Graduate). As part of the project, a subset of graduate programs from Science, as well as other Faculties, are being reviewed for curricular experiential learning activities. The outcome of this exercise is expected to help us engage with graduate programs and the School of Graduate Studies to further enhance the professional skills of the graduate students.

With respect to the recommendation to explore the possibility of centralized access to site-licensed software and packages, this is a topic of discussion at many levels of the McMaster University. McMaster recently purchased centralized access to Microsoft Office for all students, faculty and staff and similar solutions for high use software and IT resources are being explored. The new

Information Technology (IT) governance process at McMaster will provide several opportunities for consideration of this, and similar recommendations in the future.

The cohesive and collaborative nature of the Department of PNB and the successes of its associated academic programs are outstanding examples of excellence within the Faculty of Science and McMaster University. The IQAP review process has provided an important opportunity for self-reflection, external review and subsequent refinement that will certainly enhance these already outstanding programs.

<u>Quality Assurance Committee Recommendation</u>

McMaster's Quality Assurance Committee (QAC) reviewed the above documentation and the committee recommends that the program should follow the regular course of action with a progress report and subsequent full external cyclical review to be conducted no later than 8 years after the start of the last review.

McMaster University

School of Graduate Studies

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Ext. 23679
Fax 905.521.0689
http://www.mcmaster.ca/graduate

To   :   Senate

From :   Christina Bryce
              Assistant Graduate Secretary

Re   :   Report from Graduate Council

_____

At its meeting on May 14th, Graduate Council approved the following for recommendation to Senate:

For Approval:

   1. Changes to Cotutelle Policy (attachment)

A number of changes were proposed to the policy as a result of the recommendations from the Graduate Council Working Group who reviewed the policy and process around cotutelle arrangements at McMaster.

   2. Faculty of Business

Health Management*

Change to Admission Requirements (M.H.M.)

The program adjusted their admission requirements in response to their IQAP review to provide some indication of how non-regulated health professionals will be assessed for admission. The admission text will now include the following provision: *Non-regulated health professional candidates will be considered if they have a minimum of 12 months working experience within the healthcare system as a healthcare professional OR supervisory experience of regulated health professionals.* This is intended to create transparency in the requirements for non-regulated health professional candidates.

*also approved by the Faculty of Health Sciences

For Information:

   3. Faculty of Business

Business Administration

Change to Course Requirements and Calendar Copy (Ph.D.)

The program proposed minor changes to the calendar text for consistency between the different fields of the program, removing duplication and adding 'additional information' sections to two fields to note that students might be required to take additional courses depending on their background, at the recommendation of their supervisor. In the Health Management field elective list they removed the reference to 'MBA' to give more flexibility in course selection.

Master of Finance

Change to Course Requirements and Calendar Copy

The program proposed two changes to the calendar copy. The first was to remove the requirement that students maintain an average grade of at least B in order to continue in the program and graduate and the second was to revise the list of possible elective courses to include the two new courses and remove from the list two existing courses that the two new courses replace.

M.B.A.

Change to Calendar Copy and Program Requirements

The program proposed a change to the list of elective courses available in the Accounting and Financial Management Services specialization to reflect current offerings. The program also proposed a new course be added as an elective be added to the Health Services Management specialization and created a list of available electives for the Blended Learning Part-Time M.B.A. program. The program corrected the language around admission requirements for McMaster B.Com graduates as their graduate calendar text had not previously reflected their accepted average and some text was added to note that it is not possible to transfer between the Blended Learning program and other MBA programs. A number of other housekeeping changes were made for clarity.

4. Faculty of Health Sciences

Medical Sciences

Change to Transfer Exam Procedure (M.Sc.)

The program proposed eliminating their current transfer examination process and instead have the request occur at the second or third M.Sc. committee meeting, where students will have to submit an outline of the Ph.D. project, including hypothesis and specific aims. This change will help streamline processes within the program.

Nursing

Change to Course Requirements and Calendar Copy (M.Sc)

The program eliminated 745 as a requirement for both the course-based program and primary healthcare and nurse practitioner program and revised their calendar copy to remove some confusing language around the required scholarly paper, which is managed through a course. The program found that their course-based students wanted more choice in their coursework, geared toward their career plans. Students will still be able to take 745 as an elective if they wish.

5. Graduate Council Working Group Reports

Cotutelle

The working group was tasked with review the Cotutelle policy and process and to make adjustments and recommendations about how to increase uptake of this option. Their recommendations included revisions to the policy itself, noted earlier in this report. The groups other recommendations included the following:

- Revisions to the Cotutelle Section of the Graduate Calendar
- Recognition of the SGS International Student Life staff member as the coordinator of Cotutelle arrangements
- Adoption of the Cotutelle checklist as a tool for making these arrangements

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- The development of an inviting and informative web presence for Cotutelle and other international research/study options
- Further thought in the 2019/2020 academic year on tuition and funding arrangements for the Cotutelle and other promotional efforts beyond the website.

<u>Graduate Program Structure</u>
The working group was tasked with reviewing the graduate academic regulations and make recommendations while considering a number of questions, including the differences between research-based and course-based Masters, should different categories of graduate programs be created, do graduate fees provide appropriate flexibility, what should happen to a students status and fees charged when they take time off and which of the academic regulations should be re-written.

The group passed along the following recommendations:
- That McMaster create two categories of graduate programs, with the primary differences being the type of research being conducted and the way fees are charged.
  - Category 1: Research Expertise and Discovery programs (Consists of all Ph.D. program and most Master's programs at McMaster, these programs include original research in addition to some form of research discovery activities. The discovery component relates tot eh creation of a new body of knowledge. Charged per term.)
  - Category 2: Research Expertise programs (Currently includes a small number of Master's program where the research component often takes the form of some type of practical experience. Charged per course.)
- Re-write the definition of Course and Milestone in the Graduate Calendar to provide more clarity on these items and the consequence of a failure in each and how those failures interact.
- Add a general section to the Graduate Calendar that discusses progression to provide more context for how graduate students move through their degree.
- That the School of Graduate Studies, with graduate programs, will lead a review of current courses and milestones to ensure compliance with the new definitions.
- To explore the creation of a single course fee for Category 1 (term-charged) programs.
- Review and change the refund policy for course-based fees in Category 2 programs.
- Create a 'no course offered' leave of absence.
- Strike a committee to consider the implications of changing the graduate part-time definition to 0.3 of the full-time program.
- Include the 'Definitions of Experiential Work as defined by OSAP' appended to the report in the New Program Proposal Guidebook and circulate the table to programs considering changes through the curriculum process.

6. Graduate Calendar Administrative Section Changes

A number of changes to the administrative sections of the Graduate Calendar were approved. A summary of the changes is below and the full track-changes document is available at the following link:

http://macdrive.mcmaster.ca/d/ec31e54ff7974dda8074/

Sessional Dates

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Some minor changes were made to the dates and a note about late registration fees and text about the black-out periods for scheduling Ph.D. defences was added.

1.1 Programs of Study
Program with names changes approved in this cycle were adjusted.

1.3 Responsibilities of Graduate Students to the University
Some text was added and adjusted to refer to new information in the revised section 2.6 Academic Progression.

General Regulations of the Graduate School
Some potentially confusing text regarding the McMaster email account was adjusted.

2.1.5 Admission of Students to a Cotutelle Ph.D. Degree
Text changes were made as a result of the work of the Cotutelle Graduate Council Working Group.

2.1.8 Admission Requirements for Post-Degree Students
Text was added to note that students are allowed to take up to three courses as post-degree. Other adjustments were made to the text to clarify the role of the Associate Dean in post-degree admissions.

2.2 Application for Admission
Some text was added to note that the application fee is assessed for each program requested to review the application.

2.3 Transfer/Advance Credit and Determination of Course Equivalency

Text from the Quality Assurance Framework was added to note that in some cases courses taken as part of a diploma program may be considered for advanced standing in a subsequent master's degree.

2.5.7 Leaves of Absence and 2.5.8 Parenting Leave

The text in this section was reorganized and a new type of leave (No Course Available) was added. The No Course Available leave was proposed by the Graduate Program Structure Working Group and is not open to students in programs that require a thesis/dissertation or a major research paper.

References to 'paid' work experience was removed and some text was added to note the potential consequences of taking a leave of absence mid-term.

As part of the text reorganization, section 2.5.8 was moved into 2.5.7.

2.6 Academic Progression and Graduate Curriculum
This section was renamed (formerly 'Graduate Curriculum') and some information was added to clarify how a student successfully progresses through their degree at the recommendation of the Program Structure Working Group.

2.6.1 Averaging of Letter Grades

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Equivalent percentages were added to the chart for the Graduate Student Grading Scale. The Grading Scale used by the MBA, Master of Finance and Graduate Diploma in Professional Accountancy was also added to this section.

2.6.2 Course Levels and Types

One of the recommendations of the Graduate Program Working Group was more clarification on courses and milestones. Text was added to explain what constituted a unit for a graduate course.

2.6.4 Milestones (formerly section 2.6.8)

Another recommendation from the Graduate Program Working Group was to add more detail to this section. The definition was expanded to add additional clarity about what constituted a milestone and the consequence of a failure in a milestone.

2.6.8 Failing Grades and Incomplete Grades (formerly section 2.6.4)

This section was adjusted to clarify the interaction between a failure in a course and a failure in a milestone. The text was also adjusted to clarify the process around incomplete grades

2.6.9 Placeholder Courses

Text was added to note that students visiting or on exchange need to enroll in SGS 302

2.7 Supervision

Emphasis was added to note that the supervisor must be declared within the first five months of study. Text was also added to note the policy for non-McMaster faculty or industry experts to be considered for roles on the supervisory committee. Additional information was also added to clarify the deadlines for Ph.D. supervisory committee meetings based on when the student entered the program.

2.7.1 Graduate Work Supervision Guidelines for Faculty and Students
Text was added under point 7 of the Guidelines for Supervisors and Advisors of Graduate Students to clarify the process for temporary disabilities and long-term disabilities.

Regulation for Master's Degrees

An out of date reference to the M.B.A. Calendar was removed.

4.3 Thesis

Adjustments were made to this section in light of the requirements for the accelerated thesis defence process, including noting that the presence of the external is mandatory either in person or electronically. Some other text was added to note the role of the Chair and eligibility requirements for Chairs. Information about timelines for the external report, including that if a report is not received five business days before a defence the candidate and committee will be notified that the defence is at risk of being cancelled. If the report has not been received two business days before the scheduled examination, the candidate will be informed that the defence will be rescheduled.

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4.5 Program Progression

Text was added to help clarify progression as it relates to a student's performance in the supervisory committee meetings.

5.1.2 Non-payment of Fees or Charges

Some additional detail was added to clarify that students would not receive academic results if they have not settled their outstanding account.

5.2.1 Financial Support for Graduate Students

This section was adjusted based on the previously approved concept of raising the minimum remuneration for doctoral students.

6.1 Academic and Research Integrity

A link was corrected, and some text was added related to Research Integrity.

6.5 McMaster University Policy for Academic Accommodation of Students with Disabilities

The old text was replaced with excerpts from the Academic Accommodation policy. Some text was also added about how workplace accommodations are managed.

6

Policies, Procedures and Guidelines

Complete Policy Title:	Policy Number (if applicable):
Cotutelle Policy	

Approved by:	Date of Most Recent Approval:
Senate	**April 10, 2013**

Date of Original Approval(s):	Supersedes/Amends Policy dated:

Responsible Executive:	General Enquiries:
Vice-Provost and Dean of Graduate Studies	Policy (University Secretariat)

DISCLAIMER: *If there is a Discrepancy between this electronic policy and the written copy held by the policy owner, the written copy prevails.*

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SECTION I

INTRODUCTION

1. A cotutelle is a ~~single~~ PhD jointly awarded by two post-secondary institutions, typically from different countries.

2. A cotutelle degree ~~is a unique way to~~ promote~~s~~ and structure~~s~~ ~~research~~ international collaboration~~s in ways that~~ ~~and s, and~~ allow~~ss~~ students access to a broader range of research experience ~~and supervision~~ than would be available at a single institution.

REQUIREMENTS

3. The student must meet McMaster's admission requirements.

4. The student must initiate arrangements for the Memorandum of Understanding (MOU) no later than 12 months into their Ph.D. study and ~~Tthe student~~ must ~~apply to be in a~~finalize the cotutelle MOU ~~Memorandum of Understanding (program arrangementsMOU)~~ within the first 24~~12 24~~ months of their PhD study.

5. The student is required to be registered full-time at both institutions.

~~5.~~6. Each institution must have a qualified supervisor for the student.

~~6.~~7. The student must meet the degree requirements at both institutions,~~-~~ as negotiated in the ~~Memorandum of Understanding (MOU)or as negotiated in MOU~~.

~~7. Each institution must have a qualified supervisor for the student.~~

8. A cotutelle ~~Memorandum of Understanding~~MOU ~~(MOU)~~ must be created between both institutions, if it does not already exist. ~~-~~At a minimum, the ~~MOU~~Memorandum will outline:

    a) which institution is the "Home Institution" and which is the "Host Institution";

    ~~a)~~ ~~who~~the names and titles of the supervisors~~are~~;

    b)

    ~~b)~~

    c) a listing of degree requirements for each institution;

    ~~who the supervisors are~~financial / tuition / funding details;

    ~~d)~~

    ~~c)~~d)~~the residency, class, exam, and research schedule for the student~~a timetable for residency and meeting degree requirements;

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f)a) financial / tuition / funding details;

g)a)insurance coverage and visa requirements;

h)a)intellectual property and publication details;

e)   a schedule for progress reports and committee meetings;

f)   intellectual property and publication details;

i)g) financial / tuition / funding details;

        the language of the thesis and defence (normally English), and details of the examination procedure;insurance coverage and visa requirements;

        intellectual property and publication details;

j)

k)h)options for completion if the supervisory relationship with either supervisor breaks down;

i)   options for completion if the student fails to meet degree requirements;

        the language of the thesis and defence (normally English), and details of the examination procedure;

j)

l)   and

k)   agreement that both institutions will award a single doctoral degree designated as having been completed "in cotutelle" with the other institution.

l)   insurance coverage and visa requirements;

9.   The student must comply with regulations at both institutions (e.g., research ethics, etc.). The student can be processed under either university's regulations.

10.   Generally, the student spends the majority of time at the Home Institution, with a minimum of 12 months and maximum of 24 months at the Host Institution.

11.   Students enrolled in a cotutelle program will pay tuition only to one institution at a time, normally to the Home Institution; additional administrative or ancillary fees may be required. All tuition and fee requirements should be in the Cotutelle MOU.

> **Commented [A1]:** To be confirmed.

12.   The student will include an additional chapter in his/her thesis discussing the value added from the cotutelle work.

13.12.   As dictated by McMaster's policies, there must be a formal thesis defence. The thesis defence normally will use the procedures of the Home Institution and be defended at the Home Institution with both thesis supervisors attending the defence (in person or by teleconference). The examining committee must be

McMaster
University

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equally appointed by both institutions (generally 2 professors from each institution) and must include an external examiner independent of both institutions.

14.13.   Upon successful completion of the defence, an the final thesis (normally in in English) version of the final thesis will be submitted to McMaster for dissemination through the eThesis program.

15.14.   Wording on transcripts and degrees parchments from both institutions must specify the degree was awarded as having been completed "in cotutelle" with the other institution.

PROCEDURES

16.15.   The student will fill out the Cotutelle Letter of Intent with the program coordinator of the program in the School of Graduate Studies (SGS). This letter must bet be signed by the student and both supervisors.

17.16.   The Cotutelle Letter of Intent then will be reviewed and approved by the appropriate Associate Dean from SGSof Graduate Studies representing the student's Faculty.

18.17.   The Cotutelle Letter of Intent is forwarded to the Office of International Affairs for the creation of a Cotutelle MOU, in collaboration with the School of Graduate Studies. The Cotutelle MOU must be approved and signed by the Vice-Provost and Dean of Graduate Studies from McMaster University, and an authorized representative of the other institution, as well as by both supervisors and the student. Other signatories may be added as appropriate.

19.18.   The Cotutelle MOU must be completed and signed before the student attends the Host Institutione.

McMaster University

SECTION II

RELATED POLICIES

~~20.~~19.   This Policy is to be read in conjunction with the following policies, statements, and collective agreements. Normally the policies listed below act independently of one another. However, they may intersect with the application of other University policies or procedures regarding the same matter.

~~21.~~20.   Any question of the application of this Code or related policies shall be determined by the Associate Vice-Provost and Dean of Graduate Studies from McMaster University, in consultation with the administrator of the other policy or policies. The University reserves the right to amend or add to the University's policies and statements from time to time (this is not a comprehensive list):

- Academic Accommodation of Students with Disabilities
- Academic Accommodation for Religious, Indigenous and Spiritual Observances
- Academic Freedom, Statement on
- Academic Integrity Policy
- Alcohol Policy, University
- Conflict of Interest Guidelines: Undergraduate Studies and Graduate Studies
- Code of Student Rights and Responsibilities
- Discrimination, Harassment and Sexual Harassment: Prevention and Response, Policy
- Employee/Labour Relations – Collective Agreements (students acting in their role as Teaching Assistants are acting as University employees and should refer to their collective agreement.)
- Freedom of Information and Protection of Privacy Act
- Group Conflict and Senate Mediation Procedures
- Ontario Human Rights Code
- Personal Health Information Protection Act
- Research Integrity Policy
- Sexual Violence Policy
- Statement on Building an Inclusive Community with a Shared Purpose
- Statement and Guidelines on Inclusive Communications
- Tobacco & Smoke Free University Policy
- University Technology Services (UTS) – Policies and Procedures
- Violence in the Workplace, Policy on

McMaster University

REPORT TO THE SENATE

FROM THE

COMMITTEE ON BY-LAWS

Open Session (Regular Agenda)

Senate accepted Notice of Motion for the amendments to the Faculty of Science By-Laws and the Faculty of Business By-Laws at its meeting on May 15, 2019.

1. **Amendments to the Faculty of Science By-Laws (For Approval)**

   At its meeting on May 27, 2019, the Committee reviewed and recommended that Senate approve the amendments to the *Faculty of Science By-Laws.*

   The Senate Committee on By-Laws now recommends,

   that Senate, on the recommendation of the Committee on By-Laws, approve the proposed amendments to the Faculty of Science By-Laws as circulated.

2. **Amendments to the Faculty of Business By-Laws (For Approval)**

   At its meeting on May 27, 2019, the Committee reviewed and recommended that Senate approve the amendments to the *Faculty of Business By-Laws.*

   The Senate Committee on By-Laws now recommends,

   that Senate, on the recommendation of the Committee on By-Laws, approve the proposed amendments to the Faculty of Business By-Laws as circulated.

3. **Report from The Ad Hoc Committee to Review the By-Laws of the Senate of McMaster University that Govern Elections (For Approval)**

   At its meeting on May 27, 2019, the Committee reviewed and discussed the recommendations from the Ad Hoc Committee to Review the By-Laws of the Senate of McMaster University that Govern Elections.

   The Senate Committee on By-Laws now recommends,

   that Senate, on the recommendation of the Committee on By-Laws, receive for information the report from the Ad Hoc Committee to Review the By-Laws of the Senate of McMaster University that Govern Elections and refer the report to the 2019/20 By-Laws Committee for a detailed review and recommendations.

SENATE: FOR APPROVAL
June 5, 2019

McMaster University Faculty of Science By-laws

I   THE FACULTY OF SCIENCE

(i)   Membership:

Ex Officio: President
                Provost
                Vice-President (Research)
                Dean & Vice-Provost of Graduate Studies
                Dean of the Faculty (Chair)
                Associate Deans of the Faculty
                Assistant Dean (Academic), Faculty of Science
                Director of Finance & Administration, Faculty of Science
                Directors of Senate-approved Centres and Institutes that report to the
                    Dean, Faculty of Science (see Schedule A)
                Directors of Interdisciplinary Graduate Programs involving the Faculty of
                    Science
                Chair, Department of Biochemistry & Biomedical Sciences, Faculty of
                    Health Sciences

Faculty: All full-time faculty members holding appointment at the rank of Lecturer
                    or higher in the Departments/Schools of Biology, Chemistry &
                    Chemical Biology, Geography & Earth Sciences, Interdisciplinary
                    Science, Kinesiology, Mathematics & Statistics, Physics &
                    Astronomy, and Psychology, Neuroscience & Behaviour, and in
                    such other departments and schools as may be added to the
                    Faculty of Science by the Senate
                One faculty member from each of the other Faculties

Staff: Three full-time staff members in the Faculty of Science, elected by and
                    from the full-time, non-teaching staff of the Faculty, for staggered
                    three-year, once renewable terms

                *Staff members should normally have at least one year of service within
                the Faculty. Continued service within the Faculty for at least the term of
                election is normally expected.*

Students: The elected undergraduate student to the University Senate from the
                    Faculty of Science
                The President of the McMaster Science Society (undergraduate student
                    association), or delegate, and 4 additional undergraduate
                    students to be appointed annually by the Faculty Dean upon
                    recommendation by the President of the McMaster Science
                    Society

The elected graduate student to the University Senate from the Faculty of Science

The President of the McMaster Science Graduate Students Association~~Scientist Association at McMaster~~ (graduate student association), or delegate, and 1 additional graduate student to be appointed annually by the Faculty Dean upon recommendation by the President of the McMaster Science Graduate Students Association~~Scientist Association at McMaster~~

Students may be asked to withdraw when the cases of specific students are under consideration, but on other matters shall have full voting privileges.

Secretary: (non-voting)

Secretary of the Senate, or delegate

Consultants: (non-voting)

Manager, Science Career and Cooperative Education
Manager, Communications, Faculty of Science
Manager, Development, Faculty of Science
Manager, Information Technology, Faculty of Science
Administrator (Research and Facilities), Faculty of Science
Administrator (Faculty Affairs), Faculty of Science
Directors of Senate-approved Centres and Institutes that report to the Vice-President (Research) in which the Faculty of Science is involved (see Schedule B)

(ii) Regular Meetings:

(a) The Faculty shall meet at least two times during the period from September to June, inclusive. A notice of meeting shall normally be circulated at least one week before a meeting, and an agenda shall be circulated at least forty-eight hours before any such meeting.

(b) Meetings of the Faculty shall be conducted in accordance with the rules and procedures of the Senate.

(c) A quorum shall consist of those present at the meeting, provided that the meeting has been properly called and that regrets have not been received by the Secretary from more than one half of the members of the Faculty. However, for action on items not on the circulated agenda, a quorum shall consist of one half of the members of the Faculty.

(d) In the absence of the Dean of the Faculty, the Chair shall be an Associate Dean of the Faculty or, in his/her absence, a member of the Faculty designated by the Dean.

(iii) **Special Meetings:**

Special meetings may be called, under the same conditions of notice and agenda as specified in sub-section (ii) above, by the Dean. They shall be called when at least twenty voting members of the Faculty request such a meeting by written submission to the Dean.

(iv) **Authority of the Faculty:**

(a)   The Faculty shall, within its area of jurisdiction and subject to the constraints imposed by these By-laws, determine the various levels of responsibility within the Faculty and establish appropriate Standing and Ad Hoc Committees.

(b)   Under the authority of these By-laws, which are subject to approval and amendment by the Senate, the Faculty shall determine the functions and powers that may be delegated to subordinate bodies.

II   THE FACULTY COUNCIL

(i)   Composition:

Ex Officio: President
Provost
Dean & Vice-Provost of Graduate Studies
Dean of the Faculty (Chair)
Associate Deans of the Faculty
Chairs of Departments and Directors of Schools in the Faculty of Science
Assistant Dean (Academic)
Director of Finance & Administration

Consultants: Members of the Faculty who are members of the University Planning
(non-voting)   Committee
Directors of Interdisciplinary Graduate Programs involving the Faculty of
        Science
Chair, Department of Biochemistry & Biomedical Sciences, Faculty of
        Health Sciences
Manager, Communications
Manager, Development
Manager, Information Technology
Manager, Science Career and Cooperative Education
Administrator (Research and Facilities)
Administrator (Faculty, Staff and Systems)

Secretary: Secretary of the Senate, or delegate
(non-voting)

Quorum: One half of the voting members

(ii) **Functions**:

To do short-term and long-term planning for the Faculty of Science; to co-ordinate the academic objectives and priorities of the Departments and Schools in the Faculty of Science into a coherent Faculty plan; to be responsible for the planning of the Faculty's physical facilities and services; to deal with such matters as may be referred to it by the Dean of the Faculty or by the Faculty; to act on behalf of the Faculty in the period between the last regular Faculty meeting of one academic year and the first regular Faculty meeting of the succeeding academic year, submitting a written report to the Faculty at the latter meeting on all actions taken; to advise the Dean on matters of concern; to make recommendations to the Faculty on any appropriate matter; and to act as a nominating committee, as set out in Section V below.

Action taken by Faculty Council shall be reported to the Faculty at the next Faculty meeting.

III **DEAN'S AD HOC COMMITTEES**

Ad hoc committees, for advice and/or assistance in the operation of the Faculty, may be appointed on the Dean's initiative or at the request of the Faculty. The Faculty shall be informed of the function and composition of all such ad hoc committees.

IV **STANDING COMMITTEES**

(i) **General**

The President, the Provost, and the Dean of the Faculty are ex officio members of all Standing Committees, except that neither the President nor the Provost is an ex officio member of the Tenure and Promotion Committee.

The Standing Committees listed below, and such other committees as the Faculty or the Faculty Council may establish, shall meet at the call of the Chair. Student members of committees may be asked to withdraw from meetings when cases of specific students are under consideration.

Unless otherwise specified, a quorum shall consist of one half of the committee members.

(ii) **Undergraduate Academic Planning and Policy Committee**

Functions:

To advise the Associate Dean (Academic) on matters and policy related to undergraduate academic planning, recruitment, course enrolment management, and student awards; and

to consider undergraduate curriculum matters affecting the Faculty of Science and make recommendations thereon to the Faculty.

Composition:

Ex Officio:	President
	Provost
	Dean of the Faculty
	Associate Dean (Academic) (Chair)
	Assistant Dean (Academic)
Faculty:	Undergraduate Associate Chair (or equivalent) of each Department and School in the Faculty of Science offering programs in which there are students registered in the Faculty of Science
Students:	President, McMaster Science Society, or delegate
	Vice-President, Academic, McMaster Science Society
Consultant: (non-voting)	Manager, Science Career and Cooperative Education
Secretary: (non-voting)	Provided by the Office of the Associate Dean (Academic), Faculty of Science

(iii) **Committee on Graduate Curriculum, Policy, Admissions and Study**

Functions:

To consider matters of policy and curriculum affecting graduate work in the Faculty of Science, including new programs and course changes, and to make recommendations thereon to the Faculty; to determine the admissibility to graduate study of any applicant recommended by a Department, School, Unit or Institute; to approve each graduate student's course program; to review annually the progress of each graduate student; to determine action on the recommendation of a Department or School in instances of failure in a course; to recommend to the Graduate Council the students to receive graduate degrees; to decide on petitions from graduate students for special consideration in respect to off-campus or part-time study, extension of time to complete degree requirements, etc.; and to hear appeals of graduate students with respect to matters of academic standing involving substantive academic judgement, as described in Sections 28 to 33 of the *Student Appeal Procedures*.

Composition:

Chair:	Associate Dean (Graduate Studies), Faculty of Science

Ex Officio:	President
	Provost
	Dean of the Faculty
	Dean & Vice-Provost of Graduate Studies

Faculty:	The longest serving faculty member currently elected by the Faculty of Science to the Graduate Council
	Graduate Associate Chair (or equivalent) of each Department and School in the Faculty of Science offering programs in which there are students registered in the Faculty of Science
	One member appointed by the Graduate Council from a department or school other than those of the Faculty of Science

Students:	The elected graduate student to the University Senate from the Faculty of Science
	The President of the McMaster Science Graduate Students Association~~Scientist Association at McMaster~~ (graduate student association), or delegate
	Students may be asked to withdraw when the cases of specific students are under consideration, but on other matters shall have full voting privileges.

Secretary: (non-voting)	Secretary of the School of Graduate Studies, or delegate

(iv) **Tenure and Promotion Committee**

Functions:

To receive from the Chair of each Department and the Director of each School, and to consider, all recommendations for the granting or withholding of tenure/permanence; to recommend to the Senate Committee on Appointments, for each candidate, that either tenure/permanence be granted or the appointment be allowed to lapse or the period of the term appointment be extended or no action be taken on the case; to receive from the Chair of each Department and the Director of each School, and to consider, all recommendations for promotion; and to recommend to the Senate Committee on Appointments the granting or withholding of promotion.

Composition:

Chair:	Dean of the Faculty
Faculty:	Seven tenured members of the full-time faculty (as specified in these By-laws) elected from those holding the rank of Professor or

Associate Professor. Of these, at least four shall be Professors and at least one shall be an Associate Professor. They shall be elected for staggered three-year terms by the full-time members of the Faculty.

Quorum: The Dean of the Faculty, and all other members, save one.

(v)   Faculty of Science Recognition and Rankings Committee

Functions:

To nominate Science faculty members for prestigious international, national and University-specific research and teaching excellence awards, and to make recommendations to the Dean for honorary degree nominations from the Faculty of Science, to provide recommendations to the Dean on matters related to reputation and rankings.

Composition:

Chair: To be appointed by the Dean of the Faculty in consultation with Faculty Council

Ex Officio: President
                Provost
                Dean of the Faculty

Faculty: One faculty member from each Department or School

Secretary: Provided by the Office of the Dean
(non-voting)

(vi)   Faculty Finance Committee

Functions:

To monitor the financial position of the Faculty and to recommend strategies to ensure a financially viable organization to the Dean; to develop financial policies and guidelines for the review and management of the fiscal resources, to recommend thereon to the Dean; to establish a mechanism (e.g. reports, key performance indicators, etc.) for financial decision-making, including recommending comprehensive financial plans and budgets for the Faculty; and, to establish such other *ad hoc* committees as may be deemed appropriate to review specific financial issues with Faculty-wide implications. The Faculty Finance Committee is advisory to the Dean.

Composition:

Chair: Dean of the Faculty

Ex-Officio: President
Provost
One (1) member of the Faculty who is a member of the University Budget
      Committee (if applicable)
Associate Deans of the Faculty
Director, Finance & Administration, Faculty of Science

Members: Two (2) Department Chairs/School Directors, both to be appointed for
      staggered three-year terms (once renewable) by the Dean, in
      consultation with the Associate Deans. ~~One (1) of whom will also~~
      ~~serve to orient new Chairs to University and Faculty financial~~
      ~~processes.~~

      The Department Chair(s)/School Director(s) ~~in~~ during their first term of
      appointment as Chair/Director, ~~if applicable,~~ to be appointed for a
      one-year term (non-renewable) by the Dean

      Two (2) members of the Faculty to be appointed for staggered three-year
      terms (once renewable) by the Dean, in consultation with the Associate
      Deans

      Normally, members will be selected such that departmental/school
      representation is not duplicated.

Consultants: Assistant Vice-President (Administration) & Chief Financial Officer
(non-voting) Associate Vice-President, Finance and Planning (Academic)

(vii) **Faculty Appointments Advisory Committee**

Functions:

To review all Department and School applications for new full-time tenure- and teaching-stream faculty appointments, and recommend to the Dean on the allocation of the number and nature of the faculty positions. This Committee is advisory to the Dean.

Composition:

Chair: Dean of the Faculty

Ex-Officio: President
Provost
Associate Deans of the Faculty

Members: Five (5) faculty members (not Chairs/Directors or Associate Chairs/Directors), one from each School and Department not represented by Associate Deans, appointed by the Dean after consultation with the relevant Chairs/Directors

Consultant: Administrator (Faculty Affairs)
(non-voting)

(viii)   Academic Accommodation Teams

Functions:

The revised McMaster University policy, *Academic Accommodation of Students with Disabilities*, effective September 1st, 2017 created the concept of "Academic Accommodation Teams" in each Faculty to assist Student Accessibility Services (SAS) in developing academic accommodation decisions. The mandate of the Faculty Academic Accommodation Team is defined in the Policy thus: "The Academic Accommodation Teams (AAT) are informal networks of individuals within academic units who have the knowledge and expertise required to inform decisions related to Academic Accessibility Services and support the Associate/Assistant Deans in the consideration of complex and/or retroactive Academic Accommodation decisions and appeals. In some areas there may be Accommodation Teams specific to the departments and professions within that Faculty."

Composition:

For Undergraduate Students:

Chair: Associate Dean (Academic), Faculty of Science

Ex-Officio: Assistant Dean (Academic), Faculty of Science
Manager, Undergraduate Recruitment & Education, Faculty of Science

Members*:   Academic Advisor(s) in the Office of the Associate Dean (Academic), Faculty of Science
Course Instructor(s) of the Student
Assistant Dean (Academic) from another Faculty

Consultant: SAS Program Coordinator(s)

* *Members to be determined by the Committee Chair based on the matter under consideration.*

For Graduate Students:

Chair: Associate Dean (Graduate Studies), Faculty of Science

Ex-Officio: Associate Chair/Director (Graduate) or Director of the Interdisciplinary Graduate Program in which the Student is registered, as appropriate

Members*:   Chair/Director of the Department/School where the Graduate Program is delivered or with which it is affiliated, if applicable
Associate Chair/Director (Graduate) of the Department/School where the Graduate Program is delivered or with which it is affiliated, if applicable

Consultant: SAS Program Coordinator(s)

Members to be determined by the Committee Chair based on the matter under consideration.

V   ELECTIONS

(i)   At an appropriate time each year, the Faculty Council shall make appointments or nominations to fill the vacant positions on each Standing Committee as appropriate, except the Tenure and Promotion Committee. Nominations shall be mailed to all members of the electorate, at their University address, giving members the opportunity to make additional nominations, within a designated period, any such nomination to be supported by five members of the electorate. In the event that further nominations are received, an election shall be conducted by the Secretary of the Senate, by means of ballots mailed to the University address of each member of the electorate.

(ii)   At an appropriate time each year, the Faculty Council shall make nominations sufficient to ensure an election of representatives of the Faculty of Science on the Graduate Council, on the Undergraduate Council, on the Senate and on the Tenure and Promotion Committee.

These nominations shall be mailed to all members of the electorate eligible to vote in such elections, at their University address, giving members the opportunity to nominate, within a designated period, additional candidates for any vacancy, any such nomination to be supported by five members of the electorate. The elections shall be conducted by the Secretary of the Senate, by means of ballots mailed to the University address of each member of the electorate.

(iii)   The Faculty Council shall nominate a representative of the Faculty of Science, for a three-year renewable term, to each of the other Faculties in which the Faculty of Science has representation. Additional nominations may be made by members of the electorate, within a designated period, any such nomination to be supported by five members of the electorate. If an election for any of these representatives be necessary, it shall be held concurrently with the election of members of Standing Committees.

(iv)   In the election of faculty members from the Faculty of Science to the Senate, no department or school shall hold more than two of the six allotted seats.

(v)   All elections shall be conducted in accordance with the single transferable vote procedure.

(vi)   The electorate shall consist of those faculty members holding the rank of Lecturer and above in the Departments and Schools of the Faculty of Science except insofar as the electorate for the Tenure and Promotion Committee is restricted by Senate to full-time members of the Faculty.

(vii)   Appointments to Standing Committees from Departments and Schools shall be forwarded by the Directors of Schools and Department Chairs to the Dean prior to July 1 of each year.

(viii)   Retiring members of Standing Committees shall be replaced by new members on **July 1** of each year.

(ix)   If a position on a Standing Committee other than the Tenure and Promotion Committee becomes vacant, the Faculty Council may fill that vacancy for the remainder of the vacated term. In the case of a vacancy on the Tenure and Promotion Committee, a by-election must be held in accordance with the procedures outlined above.

(x)   In the election of staff members to the Faculty, Faculty Council shall make sufficient nominations to ensure an election. Additional nominations shall be solicited from the electorate, within a designated period and any such nomination shall be supported by three members of the electorate.

VI   AMENDMENTS TO THE BY-LAWS OF THE FACULTY OF SCIENCE

(i)   To have effect, any amendment to these By-laws must first be approved by the Senate.

(ii)   A recommendation to the Senate for any amendment to any By-law, or for any new By-law, shall be made only after the proposed change in the By-laws has been approved at a Faculty meeting. Notice of motion to request such amendment shall be given at a previous meeting of the Faculty, or in writing to all members of the Faculty at least four weeks before the Faculty meeting.

VII   IMPLEMENTATION

The date of effect for these By-laws shall be the date on which they receive the approval of the Senate.

Date of Most Recent Approval by Senate: **January 1, 2019**

Faculty of Science By-laws: Schedule A

Senate-approved Centres and Institutes that report to the Dean, Faculty of Science:

- Biointerfaces Institute (BI)
- McMaster Centre for Climate Change
- McMaster Centre for Nutrition, Exercise and Health Research (McNEHR)
- McMaster Institute for Music and the Mind (MIMM)
- McMaster Physical Activity Centre of Excellence (PACE)
- Origins Institute (OI)

As of Date: January 1, 2019

Faculty of Science By-laws: Schedule B

Senate-approved Centres and Institutes that report to the Vice-President (Research) in which the Faculty of Science is involved:

- Brockhouse Institute for Materials Research (BIMR)
- Fraunhofer Project Centre for Biomedical Engineering and Advanced Manufacturing (BEAM)
- MacData Institute
- McMaster Institute for Healthier Environments (MIHE)
- McMaster Institute for Transportation and Logistics (MITL)

As of Date: January 1, 2019

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Office of the Dean

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TO: Senate Committee on By-Laws

FROM: Dr. Leonard Waverman, Dean, DeGroote School of Business

DATE: May 7, 2019

RE: Proposed Amendment – Faculty of Business By-Laws

On behalf of the Faculty of Business I am submitting the proposed amendment to Section IV, Standing Committees in the Faculty of Business By-Laws. The proposed amendment is the addition of the *Integrated Business and Humanities Operating Committee* to the list of DSB Standing Committees.

A new standing committee has been proposed to be added (and approved at the Faculty of Business Meeting on October 4, 2018) to the School of Business By-Laws to reflect the addition of a new program, Integrated Business and Humanities, in 2016. This standing committee has responsibility for curriculum development recommendations for the Integrated Business and Humanities program to the Undergraduate and Curriculum Policy Committee of the Faculty of Business and the Faculty of Humanities, where appropriate. The Operating Committee would also elect a subcommittee for admissions consisting of the program director and one faculty member from each faculty.

We would be happy to discuss as necessary with the members of the Senate Committee on By-Laws.

Attach.

cc: Dr. D. Farrar, Provost & Vice-President (Academic)
   Dr. D. Welch, Vice-Provost and Dean of Graduate Studies
   Dr. A. Danielova, Associate Dean (Faculty Affairs & Accreditation), DeGroote School of Business

BRIGHTER WORLD

AACSB ACCREDITED

Amendment to Section IV, Standing Committees in the Faculty of Business By-Laws:

<u>Integrated Business and Humanities Operating Committee</u>

The program is overseen by a Director and is supported by an Administrative Assistant. A standing Integrated Business and Humanities Operating Committee has responsibility for curriculum development recommendations for the Integrated Business and Humanities program to the Undergraduate and Curriculum Policy of the Faculty of Business and the Faculty of Humanities, where appropriate. The Operating Committee would also elect a subcommittee for admissions consisting of the program director and one faculty member from each faculty.   The composition of the IBH Operating Committee is as follows:

Chair:	Director, Integrated Business and Humanities
Ex Officio:	President
	Provost
	Dean, Faculty of Business
	Dean, Faculty of Humanities
	Associate Dean (Academic), Faculty of Business
	Associate Dean (Academic), Faculty of Humanities
Faculty:	Five faculty members, three from the Faculty of Business and two from the Faculty of Humanities, to be appointed by their respective Deans on the recommendations of their department or area chairs, for staggered three-year terms
Students:	One undergraduate student, registered in the IBH program, to be appointed by both Deans, for a one-year term
Consultants (non-voting):	Manager, Academic Programs Office at the Faculty of Business
	Assistant Dean (Studies), Faculty of Humanities
	Resource Staff, as appropriate
Secretary: (non-voting)	Administrative Assistant, IBH program

I   THE FACULTY OF BUSINESS

(i)   Membership

(a)   Ex Officio:
President
Provost
Vice-President (Research and International Affairs)
Dean of the Faculty (Chair)
Associate Dean (Academic)
Associate Dean (Graduate Studies and Research)
Associate Dean (Faculty Affairs and Accreditation)
Associate Vice-President and Dean of Graduate Studies
Director, MBA Program
Director, Professional and Executive Education Programs
Director of the Engineering and Management Program
Chair of the Department of Economics
Chair of the Department of Mathematics & Statistics

(b)   Faculty:
All faculty members holding appointment in the Faculty of Business at the rank of Lecturer or higher
One faculty member from each of the other Faculties

(c)   Students:
Two undergraduate students, elected by and from the undergraduate students in Commerce
Two graduate students elected by and from the graduate students registered in the Faculty of Business
(Students shall withdraw when the cases of specific students are under consideration, but on other matters shall have full voting privileges.)

(d)   Non-teaching Staff:
Two members, one elected by and from The Management Group and one elected by and from CAW-Canada Local 555 members for a two-year renewable term. To be eligible for election, candidates must be part of the full-time, non-teaching staff of the Faculty of Business.

(e)   Secretary:
(non-voting)
Secretary of the Senate or delegate

(ii)   Regular Meetings

(a)   The Faculty shall meet at least four times during the period September to June, inclusive. A notice of meeting and a preliminary agenda shall normally be circulated at least one week before a meeting, and a final agenda shall be circulated at least forty-eight hours before any such meeting.

(b)   Meetings of the Faculty shall be conducted in accordance with the rules and procedures of the Senate.

(c)   A quorum shall consist of those present at the meeting, provided that the meeting has been properly called and that regrets have not been received by the Secretary from more than one-half of the faculty members holding full-time appointments in the Faculty at the rank of Lecturer or higher. For action on items not on the final agenda, however, a quorum shall consist of one-half of the faculty members holding full-time appointments in the Faculty at the rank of Lecturer or higher.

(d)   The maximum length of a meeting of the Faculty shall be two and one-half hours. A meeting may be extended for a further half hour, however, on the affirmative vote of two-thirds of the members present.

(e)   In the absence of the Dean of the Faculty, the Chair shall be the Associate Dean (Faculty Affairs and Accreditation) of the Faculty or, in his/her absence, another of the Associate Deans designated by the Dean.

(iii)   Special Meetings

Special meetings may be called, under the same conditions of notice and agenda as specified in sub-section (ii) above, by the Dean. They shall also be called when at least twenty voting members of the Faculty request such a meeting by written submission to the Dean.

(iv)   Authority of the Faculty

(a)   The Faculty shall, within its area of jurisdiction and subject to the constraints imposed by these By-laws, determine the various levels of responsibility within the Faculty, and establish appropriate Standing and Ad Hoc Committees.

(b)   Under the authority of these By-laws, which are subject to approval and amendment by the Senate, the Faculty shall determine the functions and powers that may be delegated to subordinate bodies.

II   THE DEAN'S ADVISORY COUNCIL

(i)   Composition

Ex Officio: President
Provost
Dean of the Faculty (Chair)
Associate Dean (Academic)
Associate Dean (Graduate Studies and Research)
Associate Dean (Faculty Affairs and Accreditation)
Associate Vice-President and Dean of Graduate Studies
Director, MBA Program (non-voting)
Director, Professional and Executive Education Programs (non-voting)

Area Chairs of all Areas in the Faculty.

Faculty: One member elected by and from the Faculty for a renewable one-year term

Consultant: Director, Administration
(non-voting)

Secretary: Secretary of the Senate or delegate
(non-voting)

Quorum: One-half of the members

(ii)   Functions:

To advise and assist the Dean with short-term and long-term planning for the Faculty of Business, including establishing the objectives and priorities of the Faculty within the context of a comprehensive Faculty plan; to advise and assist the Dean in identifying strategic priorities for the hiring of faculty members; to advise and assist the Dean in the planning of the Faculty's physical facilities and services; to deal with such matters as may be referred to it by the Dean of the Faculty or by the Faculty; to act on behalf of the Faculty in the period between the last regular Faculty meeting of one academic year and the first regular Faculty meeting of the succeeding academic year, submitting a written report to the Faculty at that latter meeting on all actions taken; to advise the Dean on matters of concern; to make recommendations to the Faculty on any appropriate matter; to act as a nominating committee, as specified in Section V below.

III   AD HOC COMMITTEES

The Dean of the Faculty may appoint Ad Hoc Committees for assistance and advice in the operation of the Faculty, or as requested by the Faculty, and the Faculty shall be informed about the function and composition of these committees. Such committees shall report, at least annually, to the Faculty.

IV   STANDING COMMITTEES

The President, the Provost, and the Dean of the Faculty are ex officio members of all Standing Committees, except that the President and the Provost are not ex officio members of the Tenure and Promotion Committee, and the Provost is not an ex officio member of the Faculty Research Committee.

The Standing Committees listed below, and such other committees as the Faculty or the Dean's Advisory Council may establish, shall meet at the call of the Chair. Where the Chair is to be elected from among the members, the Dean (or delegate) shall call the first meeting and preside until a Chair has been elected. Student members of committees shall withdraw from the meetings when cases of specific students are under consideration.

Unless otherwise specified in these By-laws, a quorum shall consist of one half of the voting members of a committee.

All Standing Committees shall report to the Faculty at least annually.

(i)   Undergraduate Recruiting, Admissions and Student Affairs Committee

Functions:

(a)   To assess and make recommendations to the Faculty on matters of undergraduate admissions policy, and to adjudicate admission matters referred to it.

(b)   To plan, for approval by the Faculty, all recruitment activities and events within the Faculty and at an institutional level.

(c)   To review, at the end of an academic session, the grades of all students registered in undergraduate programs in the Faculty of Business (i.e., students working toward a Commerce degree); to make recommendations to the Faculty concerning the status of in-course students; and to recommend to the Faculty candidates for undergraduate degrees.

Composition:

Chair:	Associate Dean (Academic)
Ex Officio	President
	Provost
	Dean of the Faculty
Faculty:	One faculty member from each Area of the Faculty, to be appointed by the Dean of the Faculty after seeking the advice of the Area Chairs, for staggered three-year terms
Consultants: (non-voting)	Associate/Assistant Registrar (Admissions or Records, as appropriate)
	Director, Centre for Business Career Development
	Manager, Undergraduate Programs
	Resource staff, as appropriate
Secretary: (non-voting)	To be provided by the Academic Programs Office

(ii)   Undergraduate Curriculum and Policy Committee

<u>Functions:</u>

To develop undergraduate curriculum policy and undertake long-term curriculum planning for recommendation to the Faculty; to make recommendations on curriculum changes arising from requests from members of the Faculty, or from the curriculum policies adopted by the Faculty or proposed by the School of Business Committee of Instruction; to report to the Faculty on the curricula of programs in the Faculty; and to ensure that the undergraduate calendar contains up-to-date program curricula

<u>Composition:</u>

Chair:	Associate Dean (Academic)
Ex Officio	President
	Provost
	Dean of the Faculty
Faculty:	One faculty member from each Area of the Faculty, to be appointed by the Dean of the Faculty after seeking the advice of the Area Chairs, for staggered three-year terms
Students:	One undergraduate student, registered in a Commerce program, to be appointed by the Dean on the recommendation of the Commerce Society Executive for a one-year term

Consultants: Manager, Undergraduate Programs
(non-voting)   Director, Centre for Business Career Development
                  Resource staff, as appropriate

Secretary: To be provided by the Academic Programs Office
(non-voting)

(iii)   Engineering and Management Policy Committee

Functions:

To consider and make recommendations regarding the operation of the
Engineering and Management Program; to recommend, to the appropriate Faculty
committees, policy on admission numbers and major program changes; and to
consider proposals from the Director requiring policy decisions.

Composition:

Chair: Dean of Engineering and Dean of Business, alternately, for two-
                  year terms

Ex Officio: President
                  Provost
                  Dean of the Faculty of Business, when not serving as Chair
                  Dean of the Faculty of Engineering, when not serving as Chair
                  Director, Engineering and Management Program
                  Associate Dean (Academic) of the Faculty of Business
                  Associate Dean (Academic) of the Faculty of Engineering

Secretary: Administrator, Engineering and Management Program
(non-voting)

(iv)   Graduate Curriculum and Policy Committee

Functions:

To develop and make recommendations to the Faculty on the graduate curriculum
and on matters of graduate policy, including new programs and course changes;
and to consider recommendations made by the MBA Program Development
Committee.

Composition:

Chair: Associate Dean (Graduate Studies and Research)

Ex Officio: President
                 Provost
                 Dean of the Faculty
                 Associate Vice-President and Dean of Graduate Studies
                 Director, MBA Program

Faculty: One faculty member from each Area of the Faculty, to be
                 appointed by the Dean of the Faculty after seeking the advice of
                 the Area Chairs, for staggered three-year terms

Students: One graduate student, registered in the MBA program in the
                    Faculty of Business, to be appointed by the Dean of the
                    Faculty on the recommendation of the MBA Association
                    Executive for a one-year term
                 One graduate student, registered in the doctoral program in the
                    Faculty of Business, to be appointed by the Dean of the
                    Faculty on the recommendation of the DeGroote Doctoral
                    Students Association Executive for a one-year term

Consultants: Director, Centre for Business Career Development
(non-voting)   Graduate Program Co-ordinator
                 Manager, MBA Program
                 Resource staff, as appropriate

Secretary: Secretary of the School of Graduate Studies or delegate
(non-voting)

(v) Graduate Admissions and Study Committee

Functions:

To determine the admissibility of applicants to graduate programs in the Faculty;
to review the progress of students engaged in graduate programs; to determine
action on the recommendation of the Associate Dean (Graduate Studies and
Research) in instances of failure in a course; to recommend to the Graduate
Council students to receive graduate degrees; to decide on requests for
readmission to the graduate programs; to decide petitions from graduate students
for special consideration in respect of off-campus or part-time study, extension of
time to complete degree requirements, etc; and to refer any matter to the Graduate
Curriculum and Policy Committee, before taking action, if either the Associate
Vice-President and Dean of Graduate Studies or the Committee considers a matter
of precedent or policy to be involved.

Composition:

Chair:	Associate Dean (Graduate Studies and Research)
Ex Officio:	President Provost Dean of the Faculty Associate Vice-President and Dean of Graduate Studies Director, MBA Program
Faculty:	One faculty member from each Area of the Faculty, to be appointed by the Dean of the Faculty after seeking the advice of the Area Chairs, for staggered three-year terms
Consultants: (non-voting)	Graduate Program Co-ordinator Manager, MBA Program Director, Centre for Business Career Development Resource staff, as appropriate
Secretary: (non-voting)	Secretary of the School of Graduate Studies or delegate

(vi)   Student Awards Committee

Function:

To administer internal and external awards for graduate and undergraduate students within the Faculty; to make recommendations to Undergraduate Council and Graduate Council, as appropriate, for the award of prizes and scholarships restricted to students in the Faculty of Business and concerning the establishment of new awards and other related matters; and to encourage, develop and promote the nomination of students for other internal and external awards, as appropriate.

Composition:

Co-Chairs:	Associate Dean (Academic) and Associate Dean (Graduate Studies and Research) *(The agenda of any meeting will determine which Associate Dean shall preside.)*

Ex Officio:	President
	Provost
	Dean of the Faculty
	Associate Dean (Academic)
	Associate Dean (Graduate Studies and Research)
	Associate Dean (Faculty Affairs and Accreditation)
	Director, MBA Program
Faculty:	One faculty member from each Area of the Faculty, to be appointed by the Dean of the Faculty after seeking the advice of the Area Chairs, for staggered three-year terms
Consultant: (non-voting)	Graduate Program Co-ordinator
	Manager, MBA Program
	Manager, Undergraduate Program
	Resource staff, as appropriate
Secretary: (non-voting)	Associate, MBA Programs and Administration, MBA Academic Services Office

(vii)   **Tenure and Promotion Committee**

Functions:

To consider recommendations from the Area Tenure and Promotion Committees for the granting or withholding of tenure or permanence and/or promotion to Associate Professor. For each candidate, the Committee shall recommend to the Senate Committee on Appointments that tenure or permanence and/or promotion be granted, that the tenure- or teaching-track appointment be allowed to lapse, that the period of the tenure- or teaching-track appointment be extended, or that no action be taken on the case. The Chair shall convey the Committee's recommendations to the Senate Committee on Appointments.

To consider recommendations from the Area Tenure and Promotion Committees for promotion to Professor. For each candidate, the Committee shall recommend to the Senate Committee on Appointments that promotion be granted or withheld. The Chair shall convey the Committee's recommendations to the Senate Committee on Appointments.

Composition:

Chair:	Dean of the Faculty
Faculty:	Six full-time tenured members of the Faculty of Business elected from those holding the rank of Professor or Associate

Professor. Of these, at least three shall be Professors and at least one shall be an Associate Professor. They shall be elected for staggered three-year terms by the full-time members of the Faculty.

Quorum: The Dean of the Faculty, and the rest of the Committee save one.

(viii) **Faculty Research and Awards Committee**

Functions:

To advise and assist the Dean with regard to the strategic direction for research within the Faculty; to promote and monitor the effective sharing and dissemination of research results amongst faculty members; to develop and promote initiatives to create a collaborative interdisciplinary research community within the Faculty; to evaluate applications for internal Faculty research funds and make recommendations to the Dean; to administer internal Faculty research awards (currently the Faculty Research Excellence Award and Research to Practice Excellence Research Award); and to encourage, develop and promote the nomination of Faculty members for other internal and external awards, as appropriate.

Composition:

Chair: Associate Dean (Graduate Studies and Research)

Ex Officio: President
              Vice-President (Research and International Affairs)
              Dean of the Faculty
              Associate Dean (Academic)
              Associate Dean (Faculty Affairs and Accreditation)

Faculty: Five faculty members, two of whom hold Research Chairs, appointed by the Dean of the Faculty for staggered three-year terms. One of these members shall be selected by the Dean of the Faculty to serve on the Arts Research Board.

Secretary: To be provided by the Associate Dean (Graduate Studies and
(non-voting) Research)

(ix) **MBA Program Development Committee**

Functions:

To review MBA curriculum and to develop and make recommendations on MBA curriculum to the Graduate Curriculum and Policy Committee.

Composition:

Chair:	Director, MBA Program
Ex Officio:	President
	Provost
	Dean of the Faculty
	Associate Vice-President and Dean of Graduate Studies
	Associate Dean (Graduate Studies and Research)

Faculty: One faculty member from each Area of the Faculty, to be appointed by the Dean of the Faculty after seeking the advice of the Area Chairs, for staggered three-year terms

Students: One graduate student, registered in the MBA program in the Faculty of Business, to be appointed by the Dean of the Faculty on the recommendation of the MBA Association Executive for a one-year term

Consultants: Director, Centre for Business Career Development
(non-voting)   Manager, MBA Program
Resource staff, as appropriate

Secretary: To be provided by the Associate Dean (Graduate Studies and
(non-voting)   Research)

(x)   School of Business Committee of Instruction

Functions:

To ensure the quality of program delivery across all programs in the Faculty and to provide advice to the Associate Dean (Faculty Affairs and Accreditation) on appropriate teaching assignments for faculty members.

Composition:

Chair: Associate Dean (Faculty Affairs and Accreditation)

Ex Officio: President
Provost
Dean of the Faculty
Associate Vice-President and Dean of Graduate Studies

Associate Dean (Academic)
Associate Dean (Graduate Studies and Research)
Director, MBA Program

Consultants: Resource staff, as appropriate
(non-voting)

Secretary: To be provided by the Associate Dean (Faculty Affairs and
(non-voting)   Accreditation)

(xi)   Joint Occupational Health and Safety Committee

Functions:

For all buildings and areas under the control of the Faculty:

To receive information on safety and hazards from the University and other
sources and disseminate it to faculty members, staff and students as needed; to
provide advice to the Dean of the Faculty, faculty members, staff or students,
wherever appropriate, concerning potential hazards; to monitor compliance by
McMaster University with the spirit and the letter of the Ontario Occupational
Health and Safety Act and other relevant legislation and to report to the Dean on
any variances; and to represent the Faculty of Business legally in all matters of
health and safety designated under the Occupational Health and Safety Act.

Composition:

Chair: Two co-chairs, one of whom shall be appointed by the Dean from
among the supervisory staff, and the other of whom shall
be the elected non-supervisory support staff member of the
committee

Ex Officio: President
Provost
Dean of the Faculty

Members: One faculty member, appointed by the Faculty Dean for a two-year
term
One member of the non-supervisory support staff in the Faculty,
elected by and from the support staff in the Faculty for a
two-year term
One graduate student, elected for a two-year term by and from the
graduate students registered in the Faculty of Business who
are members of the CUPE Local 3906

Additional members as may be appointed by the Co-chairs, in consultation with the Dean, from other groups which use the facilities of the Faculty of Business, as long as the total number of elected members on the Committee comprises at least fifty per cent of the Committee membership.

Consultant: Senior Manager, Health, Safety and Risk Management
(non-voting)

Secretary: Selected by and from the Committee
(non-voting)

Quorum: Quorum shall consist of the majority of the voting members of the Committee, excluding the President and Provost

V   ELECTIONS

(i)   Elections of Faculty of Business representatives to the Senate, Graduate Council, Undergraduate Council, and to fill such vacancies on the Faculty's Standing Committees as are required to be decided by an election, shall be held before the end of April each year. The Dean's Advisory Council shall prepare nominations for all such vacancies. These nominations shall be made available, either in hard copy or electronically, to all members of the Faculty of Business eligible to vote in such elections, at their University address, giving such members the opportunity to nominate, within a designated period, additional candidates for any vacancy, any such nomination to be supported by five members of the Faculty of Business. The elections, if necessary, shall be conducted by the Secretary of the Senate by means of ballots made available, either in hard copy or electronically, to each member of the Faculty, except insofar as the electorate for the Tenure and Promotion Committee is restricted by the Senate to full-time members of the Faculty.

(ii)   In the election of faculty members from the Faculty of Business to the Senate, at least one of the three allotted seats shall be filled by a professor and at least one by an associate professor.

(iii)   The Dean's Advisory Council shall nominate a representative of the Faculty of Business, for a three-year renewable term, to each of the other Faculties in which the Faculty of Business has representation. Additional nominations may be made by members of the Faculty of Business, within a designated period and any such nomination shall be supported by five members of the Faculty of Business. If an election for any of these representatives be necessary, it shall be held concurrently with the elections referred to in Section V (i).

(iv)   The conduct of the election of undergraduate and graduate student members of the Faculty is the responsibility of the Dean who normally shall delegate this task to the Commerce Society and the MBA Association respectively.

(v)   The conduct of the election of the regular full-time, non-teaching staff members of the Faculty (one elected by and from The Management Group and one elected by and from CAW-Canada, Local 555 members) shall be carried out by the Office of the Dean. Any member of the non-teaching staff who is eligible to vote may be nominated as a candidate for election, provided written consent has been filed with the Office of the Dean and the nomination form has been signed by two members of the non-teaching staff eligible to vote within their respective employment group. The election, if necessary, shall be conducted by means of ballots made available, either in hard copy or electronically, to each regular full-time, non-teaching staff member of the Faculty of the respective employment group. The candidate receiving the most ballots shall be declared elected.

(vi)   All elections, with the exception of that described in Section V (v), shall be conducted in accordance with the single transferable vote procedure.

(vii)   If a position on a Standing Committee other than the Tenure and Promotion Committee, becomes vacant, the Dean's Advisory Council may select a replacement to fill that position for the remainder of the term. In the case of a vacancy on the Tenure and Promotion Committee, a by-election must be held in accordance with the procedures outlined above.

(viii) All committee memberships shall take effect on July 1.

VI   AMENDMENTS TO THE BY-LAWS

(i)   Any amendment to these By-laws shall, to have effect, require the approval of the Senate.

(ii)   A recommendation to the Senate for any amendment to any By-laws or for any new By-law, shall be made only after the proposed change in the By-laws has been approved at a meeting of the Faculty of Business. Notice of motion to request such amendment shall be given at a previous meeting of the Faculty of Business, or shall be sent electronically to all members of the Faculty of Business at least four (4) weeks before a Faculty of Business meeting.

VII   IMPLEMENTATION

The date of effect for these By-laws shall be July 1, 2012. Any amendments thereto shall be the date on which they receive the approval of the Senate.

T:\Faculty Meeting Documents\Business\DSB_Reorganization_2011\By-laws\Business Bylaws as of April 11 2012.docx

REPORT TO THE COMMITTEE ON BY-LAWS
FROM THE
AD HOC COMMITTEE TO REVIEW THE BY-LAWS OF THE SENATE OF
MCMASTER UNIVERSITY THAT GOVERN ELECTIONS

In the Fall of 2018, the Senate struck, on the recommendation of the Committee on By-Laws, an Ad Hoc Committee to Review the *By-Laws of the Senate of McMaster University* that Govern Elections. The Ad Hoc Committee was tasked with reviewing the By-Laws and proposing which, if any, changes should be recommended for approval through the governing bodies. Over the course of several meetings held over the past year, the Ad Hoc Committee undertook this review with an eye to ensuring that the electoral processes facilitate equity and inclusion, balance accountability and efficiency, and reflect good practice among comparator institutions. Further, in accordance with its Terms of Reference, the Ad Hoc Committee was not to make recommendations regarding the clauses governing Senate composition, eligibility to stand for election within a defined constituency, nor the procedure used to vote in Senate elections (ranked ballot).

The Ad Hoc Committee's recommendations are primarily related to operational or administrative tasks that will improve processes and procedures related to nominations, campaigning, record keeping, and candidate recruitment. To that end, the following proposed recommendations will be presented to the Senate, via the Committee on By-Laws, for information.

Representation

The Secretariat should collect and publish annually a report of the proportion of Senators who are members of equity-seeking groups (for example, Indigenous peoples (First Nations, Inuit and Métis), persons from racialized communities, persons with disabilities, women, LGBTQ+ identified people and members of sexual orientation and gender identify (SOGI) minority groups). This report might also include the proportion of Faculty Senators on tenure-stream and teaching-stream appointments. The collection of this data should follow FIPPA and all best practices for confidentiality, so as not to identify individual Senators. Dalhousie University has published documents that might serve as a model.

When Deans, Chairs, and Nominating Committees seek candidates for election to Senate, they should consult this report and consider nominating candidates who can contribute to the diversity of the Senate.

Information

The Secretariat should create a document describing the following:
- the responsibilities of Senators
- desirable skills for a Senator
- skills that Senators (especially student Senators) can develop by serving on Senate

This document should prominently include an EDI (Equity, Diversity and Inclusion) statement and should be distributed widely along with the materials calling for nominations. This document might also include a brief personal story from a Senator describing what they found rewarding in their work on Senate.

The training/orientation for incoming Senators should be reviewed to consider whether it adequately prepares Senators for their duties.

Nominating Candidates

The Senate should consider whether two or three signatures would suffice on a nomination form, rather than the five currently required.

The Senate should consider whether, rather than a CV, the nomination form could include questions about candidates' skills and interests. The nomination form used by Thompson Rivers University might be considered as a model.

Recruiting Student Senators

Faculties should approach their student societies (e.g., the McMaster Humanities Society, McMaster Science Society, etc.) and the Graduate Student Association to investigate whether it would be possible to harmonize elections to Society Executive with elections for Senate positions. Specifically, could the student Senator be elected alongside the other members of the Society Executive? Furthermore, could the regulations governing campaigning for election and the use of social media be harmonized between Senate elections and the student society elections?

The Secretariat and Faculties should employ multiple ways of reaching students to seek candidates for election, including email, social media, the Silhouette, the student societies for each Faculty. Furthermore, Chairs should ask Faculty members to consider inviting students with the relevant skills to seek a nomination, giving consideration to the EDI contributions that candidates can make and to the current composition of the Senate.

The Student Election Guidelines should be named "Regulations" rather than "Guidelines". The Senate should seek a legal opinion about the wording of Item 16 "Violations".

Item 8, "Candidates shall take down signs or posters within sight of any computer lab(s) by 11:59 p.m. the night prior to the first day of voting" should be removed from the Student Election Guidelines, since few students vote in the computer labs anymore and campaigning is permitted on social media in any case.

Recruiting Faculty Senators

At the first stage in the process, candidates from each Faculty should have the opportunity to nominate themselves, so that all interested candidates are considered. If not enough candidates have self-nominated, then the Faculty Nominating Committee should recruit additional

candidates, giving consideration to the EDI contributions that candidates can make and to the current composition of the Senate. The full slate of candidates should be presented for election only after self-nominations and Committee nominations are complete. Whether a candidate self-nominated or was nominated by the committee should not be made public.

Senate Committee on By-Laws: FOR INFORMATION
May 27, 2019

REPORT TO THE SENATE

FROM THE

UNIVERSITY PLANNING COMMITTEE

Open Session (Regular Agenda)

<u>FOR INFORMATION</u>

Consolidated Budget

On May 15, 2019, the University Planning Committee received a presentation on the Consolidated Budget for information and comment.

SENATE: FOR INFORMATION
June 5, 2019

2019/20 Consolidated Budget

Senate

June 5, 2019

BRIGHTER WORLD

McMaster University

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1   QUICK FACTS

History
Founded in **1887** in Toronto.
Relocated from Toronto to Hamilton in **1930**.

Institutional Leadership
Chancellor: **Suzanne Labarge (August 2019)/ Santee Smith (from September 2019)**
President, Vice-Chancellor and Chair of the Senate: **Dr. Patrick Deane (June 2019) / Dr. David Farrar (Acting, July 2019)**
Provost and Vice-President Academic: **Dr. David Farrar (June 2019) / Susan Searls-Giroux (Acting, July 2019)**

McMaster Model
Student-centred, research-intensive, problem-based, interdisciplinary approach to learning

Degrees Granted (in 2017-18)
7,049

Student Enrolment Headcount (as of fall 2018)
Undergraduate: **28,920**
Graduate: **4,857**
Domestic: **28,747**
International: **4,400**

Average Entering Grade (in fall 2018)
88.5%

Faculties
6

Full-Time Faculty (excluding Clinicians, 2018)
849

Staff (2018)
10,342

Alumni (2018)
196,547

Research Funding
$391.6 million awarded in research funding in 2017-18 (McMaster and affiliated hospitals)

World Ranking (2018)
Shanghai Ranking: **86**th
Times Higher Education: **77**th
QS World Ranking: **146**th
Times Higher Education Global Impact Rankings: **2**nd in world for Societal and Community Impact
2018 – Recipient of the Global Teaching Excellence Award from Times Higher Education
2018 – Canada's most research-intensive university – Research Infosource Rankings

Campus
152.4 hectares of property
4 libraries, **12** residence buildings, **1** athletic complex
Nuclear Reactor, WJ McCallion Planetarium, McMaster Museum of Art
4 campuses in Burlington, Waterloo, Niagara, and downtown Hamilton

Quick Facts

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2   ORGANIZATIONAL CHART

Board of Governors	President and Vice-Chancellor Chair of the Senate	Senate

Ombuds Office	University Secretariat

Provost and Vice-President (Academic)

- Associate Vice-President (Equity and Inclusion)
- Vice-Provost (International Affairs)
- Vice-Provost (Faculty)
- Vice-Provost (Teaching and Learning)
- Vice-Provost and Dean (Graduate Studies)
- Associate Vice-President, Finance and Planning (Academic)
- Associate Vice-President (Institutional Research and Analysis)
- Associate Vice-President (Students and Learning)
- Assistant Vice-President and Chief Technology Officer
- Dean, DeGroote School of Business
- Dean, Faculty of Engineering
- Dean, Faculty of Humanities
- Dean, Faculty of Science
- Dean, Faculty of Social Sciences
- University Librarian

Dean and Vice-President, Faculty of Health Sciences

- Executive Vice-Dean and Associate Vice-President, Academic
- Associate Vice-President, Global Health
- Assistant Vice-President
- Vice-Dean, Clinical Services and Commercial Enterprises
- Vice-Dean, Faculty Affairs
- Associate Dean, Graduate Studies
- Vice-Dean, Health Professional Education
- Vice-Dean, Research
- Vice-Dean and Executive Director, School of Nursing
- Vice-Dean and Executive Director , School of Rehabilitation Science
- Vice-Dean, Undergraduate Health Sciences Education

Vice-President (Administration)

- Assistant Vice-President (Administration) and Chief Financial Officer
- Assistant Vice-President and Chief Facilities Officer
- Assistant Vice-President and Chief Human Resources Officer
- Assistant Vice-President and Chief Technology Officer
- Chief Internal Auditor
- University Counsel

Vice-President (Research)

- Associate Vice-President (Research)
- Assistant Vice-President (Research Administration)
- Assistant Vice-President (Research Partnerships)

Vice-President (University Advancement)

- Assistant Vice-President (Communications and Public Affairs)

3   MESSAGE FROM THE PRESIDENT

The University's mission and strategic priorities provide the framework for the 2019/20 consolidated budget. McMaster's budget process engages all areas across the University in thinking about and demonstrating their use of resources in furtherance of the University's guiding strategy, *Forward with Integrity (FWI)*. The Strategic Mandate Agreement entered into with the provincial government is based on the principles outlined in *Forward with Integrity* and the resulting consolidated budget is therefore reflective of, and aligned with, McMaster's strategic priorities and with the provincial agreement.

The key priorities established by *Forward with Integrity* are:

- Strengthening research excellence and graduate education and training, while integrating research into the University's academic mission

- Developing a distinctive, personalized, and engaging student experience

- Enhancing the connections between McMaster and the communities we serve, locally, provincially, nationally, and around the globe

In support of these goals, McMaster is engaged in a major multi-year focus on research excellence and on enhancing the funding, infrastructure, and overall support for research. The *Research for a Brighter World — Strategic Plan for Research 2018-2023* lays out a vision and strategy to further the University's research mission and take our institution's research success to an even higher level. Beyond ensuring our researchers are properly supported and that the positive impact of their work is recognized and celebrated, the University is dedicated to securing additional funding from a variety of sources to strengthen and intensify the research enterprise.

In this budget and the planning years ahead, McMaster will continue to welcome a more diverse student population from all regions of the world and will continue to focus on enhancing the student experience and developing globally engaged citizens. Our engagement with the local and global communities that we serve will also continue and advance as the positive impact of our research, and the work of our faculty, students, and staff, is felt around the globe.

Each Faculty, department, and administrative area across the University has prepared a budget that reflects the resources available and outlines initiatives planned or already underway that support and advance these goals. The budget is structurally balanced and takes account of the revised tuition framework, drawing upon reserves to advance critical priorities.

This is the last consolidated budget I have the pleasure to support as President and Vice-Chancellor. I would like to highlight my sincere gratitude to the members of the Budget Committee and all staff across the institution who contributed to the development of this comprehensive document. Thank you also for the work that each and every department and unit does every day to advance and support the mission of the University, and for the time, energy, and dedication that you each contribute to McMaster's mission and strategic direction.

Sincerely,

Patrick Deane
President and Vice-Chancellor

Message from the President

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4   MESSAGE FROM THE PROVOST

I am pleased to present McMaster University's 2019/20 budget to the University community. The budget supports our mission of the discovery, communication and preservation of knowledge. The budget plan enables the implementation of the University's strategic priorities by:

- Strengthening the excellence of our research and our graduate education and training through opportunities to integrate research more purposefully into our academic mission. This means supporting research that reflects current and emerging issues that has impact across a wide range of disciplines and issues. We intend to build on our track record in technology transfer and entrepreneurship to provide opportunities for commercialization for our faculty and students, and to bridge the gap between research and commercial application. We are focused on integrating research and teaching creatively across our programming by engaging students at all levels in research activities. Our graduate training is central to sustaining our research intensity; we are committed to equipping graduate students in all programs with the practical skills and experiential knowledge that will enable them to translate their academic achievements into success after graduation.

- Developing a distinctive, personalized, engaging and sustainable student experience, and building on the success of our most creative and innovative programs to provide an enriching and transformative learning experience for all students. This includes opportunities for experiential, work-integrated and self-directed learning while allowing for the consideration of multidisciplinary perspectives. McMaster is committed to integrating our world-class research enterprise into teaching and learning, and connecting the learning experience to our local, national and international communities.

- Enhancing the connections between McMaster and the communities we serve, locally, provincially, nationally and around the globe. We do this by fostering ongoing collaboration between the University and its partners. This enables us to understand and consider more fully the issues identified as priorities by local and global communities, and to integrate them fully and meaningfully into the work of the academy. In addition to societally focused research, teaching and service, McMaster also supports the broader community by fostering a diverse campus community and creating enhanced pathways and improved supports for underrepresented groups.

The current budget plan includes a ten percent cut in domestic tuition and a domestic tuition freeze for next year. Faculties will meet the reduction of revenues by spending some of their accumulated surpluses. Under the current enrolment corridor mandated by the Ministry of Training, Colleges and Universities, McMaster has reached the upper limit for enrolment of domestic undergraduate students. We have also reached the Ministry's cap for funding PhD students. Maintaining our research intensity will require growth in our PhD student enrolment. Therefore, increases in undergraduate and PhD enrolment will come from an intensified and diversified international recruitment, which is not limited by the Ministry's funding cap.

There remains room for growth in Masters student enrolment, particularly in professional Masters programs. These programs fulfill McMaster's commitment to providing lifelong learning and ongoing skill development for our graduates and our community.

Message from the Provost

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Although demand for McMaster programs remains strong, there are other risks that could impact the current budget plan including: changes in government priorities and funding; our ability to attract and retain a diversified international student base; and other legislative changes.

Strategically aligned initiatives intended to broaden our revenue include: the retention and success of international students; new international partnership programs; increased summer use of campus; new professional graduate programs; and a life-long learning focus including micro-credentials. We will continue to focus on effective budget strategies through ongoing review of our administrative support models, as well as by enhancing and diversifying our revenue sources.

As Provost, my other strategic priorities include: enhanced support of research and research platforms; commercialization of our research activities; opportunities for additional Indigenous programs and research; externally focused experiential learning; and faculty renewal.

I would like to thank the academic and administrative staff across the University for their contributions to sound financial management and their hard work in contributing to this budget. Their collective efforts ensure the ongoing well-being of our great institution.

Sincerely,

David Farrar
Provost and Vice-President (Academic)

Message from the Provost

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5   EXECUTIVE SUMMARY

The consolidated budget shows a surplus in 2019/20 and the outer planning years, and the Operating Fund representing 66% of the consolidated budget is structurally balanced. This is achieved despite funding changes by the Ministry of Training, Colleges and Universities (MTCU), such as the 2019/20 10% domestic tuition cut, and 2020/21 domestic tuition freeze in addition to the domestic enrolment cap at 2016/17 levels. The Operating Fund will be further affected by MTCU's recently announced cancellation of the Medical Doctorate (MD) and Graduate Expansion Grants, removing a total of $52.9 million in capital funding, of which $3.3 million is already committed, with the Operating Fund potentially being the new funding source for the committed funding. Other changes driven by MTCU include the 2019/20 implementation of student opt-out fees, predominantly affecting student associations and threatening the ongoing viability of programs that enhance student life. Finally, the provincial government will also consider legislative changes affecting individuals who are both working and collecting a pension; the impacts associated with any subsequent changes are not factored into this budget.

Delivering on McMaster's *Forward with Integrity (FWI)* vision remains a priority, utilizing prior years' savings in reserves (appropriations) as well as seed funding from the University Fund. This budget emphasizes *FWI* priorities related to delivering an optimal research-focused, student-centred experience, providing an integrated local-to-global community mindset, with consideration toward impact and sustainability of the environment we depend on. Plans include investments in research excellence, as well as technologically enabled pedagogical approaches, career pathways across programs, and broadening existing community initiatives and partnerships with the City of Hamilton and beyond.

McMaster's research focus involves the 2019/20 launch of the *Brighter World Research Initiative* aimed at raising funds to deliver on the research strategic plan. In addition, McMaster will progress its research commercialization initiative, building dedicated space to relocate research spin-off businesses to the McMaster Innovation Park. This space will be co-located with the new government-supported advanced manufacturing supercluster. In addition, the capacity of the nuclear reactor will increase to enhance research while balancing other commercial opportunities.

In an environment of reduced funding, these initiatives cause expense growth to exceed revenue growth in the Operating Fund (Figure 1). As a result, appropriations will be substantially reduced over the budget and planning years (Figure 2). In response to the MTCU funding changes, the University has increased its attention and targets on diversified international enrolment. Other revenue growth is in the planning stage and includes increasing professional Masters programs, expanding the use of campus in the summer, and introducing block chain and micro-credentials using online solutions that reduce the burden on physical infrastructure.

Actual and projected enrolment growth has increased the strain on campus capacity. In 2019/20 McMaster will open the Peter George Centre for Living and Learning (PGCLL) providing over 500 additional undergraduate beds and an additional 36% in classroom capacity. Additional capacity-enabling projects include building the McLean Center for Learning and Discovery on top of Innis Library, and two additional residences, including integrated learning and research spaces. One residence will be for undergraduate students on campus land and include an integrated intergenerational research space. The other residence will be on McMaster leased land downtown

and include integrated learning spaces. Both additional residence projects are public-private partnerships (P3), whereby McMaster owns or holds the lease on the lands. Further, McMaster operates, manages and maintains the residences and student life programming the same as any non-P3 residence. The P3 projects are strategically important capacity initiatives that the University could not finance on its own. These P3 projects could be at risk if changes are made to existing development charge exemptions offered to McMaster by the City of Hamilton. Further, other capacity enabling future projects, not yet committed to, may be cancelled due to MTCU's recent cancellation of the expansion grant commitment it made to McMaster for delivering specific increased MD and graduate enrolment.

Inflationary pressures in Ontario affect salary, wages, supplies, and deferred maintenance. MTCU has announced it will increase deferred maintenance support to those schools in the greatest need. Close to 70% of McMaster's buildings are over 40 years old. In 2019/20, the higher education sector will adopt a more accurate methodology for measuring deferred maintenance that considers functions within buildings. This is predicted to increase the true cost of deferred maintenance by as much as 30% over the five-year implementation.

McMaster will continue to focus on benchmarking data initiatives to target efficiency projects with the greatest savings potential to allow the academy to grow while holding support services constant. McMaster has adopted the UniForum annual benchmarking program, which has resulted in significant savings at other international institutions, and 2019/20 will mark the third year of data collection. In addition, administrative reviews target opportunities to minimize bureaucracy and streamline activities. Completed reviews have focused on IT services, research financial administration support, and in 2019/20 will further focus on human resources support services.

Given the above, the consolidated budget is structurally balanced, largely due to investment income and historic internal reserve strategies to set aside funding for future-oriented obligations. The consolidated surplus is ideally 10% of revenues per year. The projection for 2018/19 does not achieve this level due to a 4.5% projected investment return (future years assume a 5.9% return consistent with McMaster's historical real return). In 2019/20 and beyond, the consolidated surplus is impacted by the MTCU tuition framework and the cancellation of capital funding, tightening the spread between revenues and expenses (Figure 3). Future obligation settlement strategies already in place will be reviewed for ongoing funding adequacy.

Executive Summary

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Figure 1: Operating Fund Outlook

	2012/13 Actual	2013/14 Actual	2014/15 Actual	2015/16 Actual	2016/17 Actual	2017/18 Actual	2018/19 Projection	2019/20 Budget	2020/21 Plan	2021/22 Plan
Surplus (deficit)	$(13.1)	$0.1	$(12.2)	$4.4	$25.9	$44.2	$2.5	$(29.9)	$(23.3)	$(18.9)
Revenue	524,469,9	544,806,1	563,331,1	589,052,3	632,632,2	677,143,7	708,582,7	708,941,9	727,047,0	750,070,5
Expenses	537,607,8	544,677,1	575,561,4	584,627,0	606,770,7	632,930,6	706,124,7	738,847,9	750,326,4	769,006,5
YoY Revenue Growth		4%	3%	5%	7%	7%	5%	0%	3%	3%
YoY Expenses Growth		1%	6%	2%	4%	4%	12%	5%	2%	2%

Figure 2: Operating Fund Appropriations
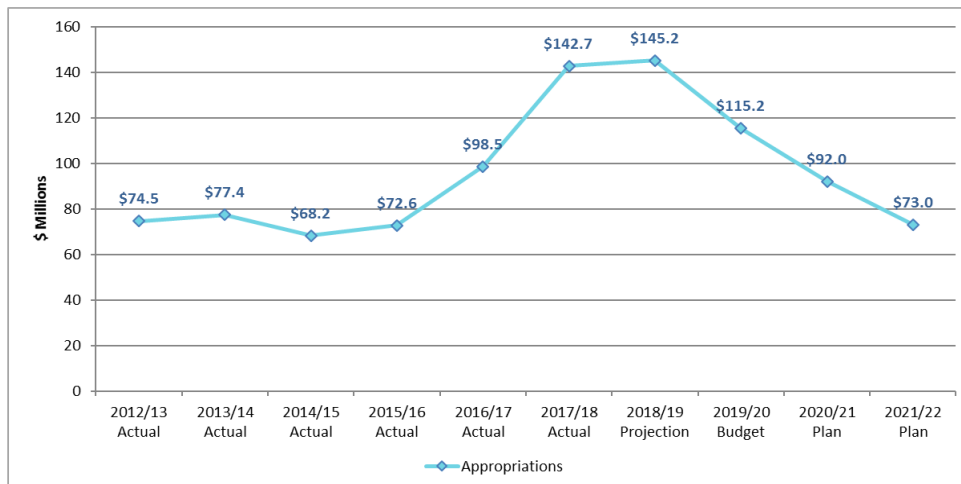
Figure 3: Consolidated Outlook

	2012/13 Actual	2013/14 Actual	2014/15 Actual	2015/16 Actual	2016/17 Actual	2017/18 Actual	2018/19 Projection	2019/20 Budget	2020/21 Plan	2021/22 Plan
Surplus (deficit)	$60.7	$86.6	$78.6	$29.1	$112.1	$123.8	$108.5	$60.4	$68.8	$59.2
Revenue	$938.8	$972.9	$990.8	$954.4	$1,076.0	$1,109.5	$1,162.2	$1,176.2	$1,225.4	$1,261.4
Expenses	$878.1	$886.3	$912.2	$925.3	$963.9	$985.7	$1,053.8	$1,115.8	$1,156.6	$1,202.2
YoY Revenue Growth		4%	2%	-4%	13%	3%	5%	1%	4%	3%
YoY Expenses Growth		1%	3%	1%	4%	2%	7%	6%	4%	4%

Revenue   Expenses

Executive Summary

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6 McMASTER'S KEY STRATEGIC PLANS

6.1 FORWARD WITH INTEGRITY AND STRATEGIC MANDATE AGREEMENT

The Ministry of Advanced Education and Skills Development[1] and McMaster University signed the Strategic Mandate Agreement (SMA) for the period May 1, 2017 to April 30, 2020. This second SMA follows an initial three-year SMA for the period of May 2014 to April 2017. The SMA captures McMaster's areas of strength, growth and direction as a University and aligns to the priorities embedded within *Forward with Integrity* (*FWI*). These priorities set forth McMaster's differentiating characteristics such as:

- Strengthening research excellence and graduate education and training, while integrating research into our academic mission

- Developing a distinctive, personalized, engaging student experience

- Enhancing connections between McMaster and the communities we serve, locally, provincially, nationally, and around the globe

The SMA process continues to evolve, formally connecting McMaster's priorities into the provincial agreement. This agreement further includes additional metrics to demonstrate the achievement of the University's priorities and includes financial metrics that can indicate the degree of the University's financial strength and sustainability. During the budget year, McMaster will begin to consider the next SMA with the MTCU covering a 5 year horizon May 1, 2020 to April 30, 2025 (SMA3) that will include a substantial increase in performance- or outcomes-based funding (from currently around 8% to approximately 60%).

The budget is the result of a University wide process that engages Faculties and departments to outline their effective and efficient use of available resources to further McMaster's *FWI* priorities, embedded in the SMA. Budgeted operating grant revenues incorporate the corridor-funding model. The corridor mid-point is based on an enrolment average over five years, phased in beginning in 2016/17[2]. Domestic tuition revenues are based on the tuition framework involving the 10% domestic tuition cut followed by a domestic tuition freeze for 2020/21. For planning purposes, the domestic tuition budget assumption for 2021/22 and beyond holds tuition flat. International tuition revenues include assumptions regarding a growing diversified international student participation.

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[1] The Ministry has since been renamed to its former name Ministry of Training, Colleges and Universities (MTCU).

[2] The corridor methodology means that McMaster's government grant is equal to the weighted grant units at the corridor midpoint, in other words at its 2016/17 funding level. Fluctuations within the corridor (±3%) will not affect the grant.

McMaster's Key Strategic Plans

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6.2   RESEARCH

The *Research for a Brighter World — Strategic Plan for Research 2018-2023* lays out a vision and plan to bolster McMaster's research mission and to take our institution's research success to an even higher level. Centered on our commitment to research excellence and informed by our core values, the plan is designed to nurture our culture of collaboration with our hospital, government, and industry partners; advance our dynamic research enterprise; and guide our development of key, strategic research initiatives of local, national, and global importance, to further advance human and societal health and well-being.

The plan builds on our individual strengths and interdisciplinary capacity, it outlines our commitment to a broad range of research approaches and methodologies, and our responsibility to place our knowledge in the hands of those who can put it to its best use, through knowledge mobilization and translation, technology transfer, and commercialization.

The plan was developed under the direction of the Vice-President (Research), and the Strategic Research Plan Committee – including representation from all Faculties, and the Associate Vice-Provosts of Faculty and International Affairs. Subsequently, and over the course of several months, University-wide feedback was solicited and consultations were held, ensuring input from all stakeholders.

6.3   CAPITAL MASTER PLAN

McMaster University's *Five Year Capital Plan (A Future Outlook) Version 3, 2017 – 2022* is a planning document to guide the University's priority setting and planning of capital projects for all buildings, both on and off the main campus. The plan supports McMaster's *FWI*, integrating and incorporating input from all stakeholders across the University community. The Capital Plan is a dynamic document that is subject to change in order to align itself with the shifting priorities of the University.

According to the Board-approved capital planning process, this plan is updated annually with input from University stakeholders to ensure infrastructure supports academic enrolment plans and research priorities. It is supported by further detailed documents, including the Campus Master Plan, the Campus Capacity Study, the Asset Management Plan, the Campus Accessibility Action Plan, and the Energy Management Plan.

The Capital Plan and other key strategic priorities are integrated into the University's Debt Strategy, which involves multi-year financial projections. The Debt Strategy determines the University's financial capacity to fund initiatives and examines whether internal and/or additional external financing is required to move critical capital priorities forward.

McMaster's Key Strategic Plans

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7 CONTEXT

7.1 REVENUE GENERATION ENVIRONMENT

7.1.1 ENROLMENT TRENDS

Provincial grants for domestic enrolment make up 33% of the Operating Fund's budgeted revenues (or 20% of the University's Consolidated Budget). Domestic tuition accounts for another 28% of the Operating Fund's budgeted revenues. Both domestic grant and domestic tuition funding growth have been limited over recent years due in part to the corridor funding model introduced in 2017/18 freezing grant funding to 2016/17 levels and remaining unchanged in the 2019/20 budget and future planning years. Further affecting results are the changes to domestic tuition framework set by MTCU that caps the magnitude of annual tuition rate increases and reduces domestic tuition by 10% in 2019/20 approximating $22.3 million in less tuition revenues for 2019/20 and holding domestic tuition frozen in 2020/21. The cut to domestic tuition revenues and ongoing loss of inflationary funding on both the operating grant and future domestic tuition revenues has called for an increased examination of McMaster's international participation across all disciplines and in connection with campus capacity. The opportunity to increase international enrolment across certain programs exists, whereas the historic University enrolment focus was toward domestic enrolment growth to assist the province in its accessibility priority. The provincial funding changes have also increased the University's focus on broadening its diversified revenue sources.

McMaster has achieved domestic enrolment caps for undergraduate and PhD enrolment. Therefore, in the budget and planning years McMaster is able to focus on a more diverse student population aimed at enhancing the student experience. International tuition represents 17% of the Operating Fund's budgeted revenues for 2019/20. McMaster is seeing unprecedented growth in applications both domestically at over 3% for 2019/20 (exceeding the demographic university-age population growth rate approximating less than 1%) and internationally at over 17% for 2019/20 compared to the previous year. This application demand suggests budgeted enrolment plans are achievable which align with approved capacity-enabling infrastructure initiatives such as, the Peter George Centre for Living and Learning, the McLean Centre for Collaborative Discovery at the DeGroote School of Business, and two additional public-private student residence projects.

7.1.2 PROVINCIAL GRANT FUNDING

The Ministry's corridor funding model caps the operating grant at 2016/17 levels. This MTCU model provides funding to the University by means of three funding components:

1. Domestic enrolment-based funding referred to as the Core Operating Grant (COG), whereby funding is for each eligible domestic student enrolled based on weighted grant units (WGU) by program. This aspect of the funding model is managed through the application of an enrolment corridor mechanism[3].

2. Differentiation funding (also referred to as performance- or outcomes-based) is the portion of grant funding linked to the University's achievement of priorities and/or metrics within the

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[3] The corridor methodology means that the government grant is fixed by the corridor midpoint. Domestic enrolment fluctuation will not affect the grant unless enrolment (based on a moving five-year average calculation) were to fall below the corridor floor, defined as 3% beneath the midpoint. The corridor midpoint is set at the 2016/17 level.

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SMA. This funding focuses on differentiation across the higher education sector, student success, and strengthening existing areas of excellence.

3. Special Purpose Grants represents funding programs based on government and/or system priorities, such as improving access for Indigenous learners, francophone students, and students with disabilities.

The University's performance based funding is currently less than 10% of overall grant revenue, however this will grow to approximately 60% over the next SMA period ending in 2025 with the offset primarily reducing enrolment-based funding by proportional reductions in the WGU values per student enrolled. This direction aligns with the Province's objective to focus funding on University, and SMA, priorities and outcomes rather than enrolment. The change will focus on ten performance metrics, nine sector-wide and one institution specific, that will form the basis of the differentiation envelope that will be distributed based on metric outcomes. Metrics will focus on skills/job outcomes and economic/community impact. As well, two additional metrics will focus on University productivity, accountability and transparency.

Another change to provincial funding includes an April 2019 announcement cancelling University MD and Graduate expansion grants. These grants are infrastructure expansion funds committed to the University for delivering additional enrolment targets. McMaster has met the enrolment targets required by the province for these grants; however, the province has cancelled its funding commitment for the capital funds. This cut eliminates $52.9 million in expected funding scheduled between 2019/20 to 2032, of which, McMaster has existing contract commitments of over $3 million that cannot be cancelled and will need to be absorbed in this budget.

Finally, the University has worked diligently on the changes the province has mandated to differentiate student fees between essential and non-essential fees. The Ministry requires the University and student organizations to allow for an opt-out process for all non-essential fees. The impact to student clubs and associations is not yet known and it is anticipated that opting out could affect the student life experience.

7.1.3   TUITION

The budget incorporates the MTCU's two year tuition framework affecting domestic enrolment, which stipulates in 2019/20 that a ten percent reduction over the prior year's tuition fees be implemented followed by a zero percent increase for 2020/21 for all funding eligible programs. For planning purposes of 2021/22 and beyond zero percent increases are assumed.

For international students, annual increases will continue and vary by program. International tuition fees do not have the benefit of provincial supplemental operating grant support; as such, these tuition fees are higher than domestic peers and are monitored relative to McMaster's key peers.[4] Overall, international student enrolment funding is reduced by a $750 per student head tax on international enrolment required by the province.

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[4] Key peers include members of the G6, a group of leading research-intensive universities in Ontario. The G6 universities are McMaster University, University of Ottawa, Queen's University, University of Toronto, University of Waterloo, and the University of Western Ontario.

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7.2   INVESTMENT RETURNS

The University investment pool consists of endowments and internal reserves established to settle future obligations and totals just over $1 billion. Annual revenues associated with endowment spending and reserves flow through McMaster's consolidated results. The size of this portfolio and the interest return budgeted versus achieved results in potential material effects to the annual results. Each year McMaster budgets investment income using the long-term rate of return expectation after inflation or 5.9%. For each plus or minus 1% difference achieved from budgeted returns the impact to McMaster's annual results is approximately $5.9 million. McMaster budgeted 5.9% in 2018/19 and the current projection is a 4.5% return, which has a negative $8 million impact on the consolidated results. The budget and planning years assume 5.9% returns along with continued annual spending of 4% and fundraising support of 1%.

The Operating Fund receives annual support of $9 million per year from endowed gifts and internally restricted assets. The Operating Fund will also receive an additional $3 million for 2019/20 based on past investment performance and completion of a five-year commitment from the Investment Reserve totaling $15 million. The Investment Reserve holds interest earnings and losses and protects the Operating Fund from volatility or annual interest revenue swings. The investment reserve protects spending during prolonged down markets recognizing the need to continue many committed funding initiatives, such as chair salaries, student scholarships and bursaries and the annual Operating Fund commitment.

In addition to the investment pool, McMaster also manages pension plan assets of over $2.0 billion. In the case of pension-related University costs, a plus or minus 1% swing in interest returns materially affects projected pension liabilities and pension payment schedules to the plan by over $200 million. In order to protect the University from adverse fluctuations associated with market volatility, McMaster uses a five-year smoothing approach to measuring the pension assets versus liabilities, and manages a benefit reserve that smoothens the Faculty and department employer pension costs over a ten-year horizon, meaning this reserve may be temporarily negative during the ten-year cycle. These approaches enable the budget process with pension cost stability at the unit level.

7.3   RESEARCH FUNDING

Federal research funding programs have helped McMaster retain, for the second year in a row, its status as Canada's most research-intensive university (Research Infosource 2018). The federal *Budget 2019* builds on last year's unprecedented investment in science and university research, which included $925 million in new funding for fundamental research. The federal *Budget 2018* proposed a new investment of $210 million over five years for the Canada Research Chairs (CRC) Program to better support early-career researchers and increase diversity among chairholders. As a result of this investment, McMaster has been awarded an additional 12 CRCs over the next three years and our early-career CRCs will receive an additional research stipend of $20,000 per year to help them establish their research programs.

The federal *Budget 2019* recognizes the importance of non-profit research organizations to Canada's research community. McMaster is a partner of the Brain Canada Foundation and the Terry Fox Research Institute, an associate member of TRIUMF (Canada's particle accelerator centre), a host institution of Let's Talk Science, and a recipient of significant funding and support from the Stem Cell Network, Ovarian Cancer Canada, and Genome Canada. The proposed new investments in these

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research organizations, together with the new Strategic Science Fund's principles-based approach to the allocation of federal funding, will help to strengthen and sustain the national organizations and facilities that enable Canadian research and innovation.

The federal *Budget 2019* includes new investments in research to address the unique health challenges of Canada's military members and veterans, including $25 million over ten years in support of the Canadian Institute for Military and Veteran Health Research (CIMVHR) and $20.1 million over five years for a proposed new Centre of Excellence on Chronic Pain Research. McMaster is a member of the CIMVHR and was recently awarded $12.5 million by the Canadian Institutes of Health Research's Strategy for Patient-Oriented Research to establish the Chronic Pain Network. Working in partnership with patients, the Network supports and coordinates world-class, innovative and high-impact research to improve chronic pain management.

To support the recruitment and retention of diverse research teams, the federal *Budget 2019* proposes to expand parental leave coverage from six to 12 months for students and postdoctoral fellows who receive funding from the federal granting councils through an investment of $37.4 million over five years and $8.6 million per year ongoing. McMaster is committed to excellence in research and training for the benefit of Canadians. Achieving a more equitable, diverse and inclusive Canadian research enterprise is essential to creating the excellent, innovative and impactful research necessary to seize opportunities and to respond to global challenges.

Provincial funding opportunities, in particular the programs of the Ministry of Economic Development, Job Creation and Trade, continue to support research excellence in Ontario. As Canada's leading university in corporate research income (Research Infosource 2018), McMaster looks forward to working with the expert panel proposed in the *2019 Ontario Budget* to maximize the commercialization potential of academic research. The *2019 Ontario Budget* also identifies investment in automotive research and commercialization as key elements of the provincial automotive plan, *Driving Prosperity: The Future of Ontario's Automotive Sector*. McMaster is a partner in Ontario's Autonomous Vehicle Innovation Network (AVIN) – located at McMaster Innovation Park – designed to build on Ontario's position as a global leader in automotive manufacturing, and home to the McMaster Automotive Resource Centre (MARC), one of the world's leading academic research centres focused on transportation electrification.

Many federal and provincial programs continue to require the provision of matching funds from institutions and other partners. The indirect costs of research incurred in the Operating Fund are partially subsidized by federal and provincial grants, in addition to overhead income from research contracts and royalties (see Figure 11). In 2018/19, these grants to McMaster are projected to total $12 million and $3 million, respectively. Although actual indirect costs exceed 40%, the federal Research Support Fund (RSF) in 2018/19 paid indirect costs to McMaster at 20.1% of all eligible Tri-Agency receipts, the same as in 2017/18. As a highly research-intensive university, these financial requirements can be challenging.

Finally, McMaster's partner support is critical to advancing the endeavours of our research community, in particular the many collaborations with Hamilton Health Sciences and St. Joseph's Healthcare Hamilton.

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7.4   FACULTY RENEWAL

The Faculty budget plans, taken together, include a 6% overall increase in faculty complement. The largest hiring increase occurs in the coming academic year to address the growth in student-to-faculty ratios. The plans for subsequent years forecast continued growth at a lower rate; these plans are preliminary and will be adjusted as actual enrolments, revenues and strategies solidify. Hiring is predominantly in tenure-track and teaching-track appointments. There is continued interest in increasing teaching track appointments to address increased teaching demands and to enable other research-focused appointments.

In addition to planned new positions, there is significant renewal forecasted within the existing complement. In 2018/19, renewal of 7% of existing faculty occurred through retirements and an additional 5% is planned for 2019/20.

7.5   INFLATION

Cost inflation is a significant issue for McMaster. With many existing revenue sources flat or deflationary, management has limited tools to address the full extent of expense inflation which is particularly high in Ontario relative to Canada. McMaster competes globally for talent so salaries must attract and secure the most qualified faculty, staff and researchers, nationally and internationally. Salary inflation adds broad expense pressure particularly as seen with the passing of Bill 148, *Fair Workplaces, Better Jobs Act, 2017*, which increased Ontario minimum wage inflation beyond historical averages by almost 23% in 2017/18. This Bill has had ripple effect across many other expense categories, including capital infrastructure, whereby third parties increase prices to address or pass on these added costs. The result of these increased wages across the Ontario system has been broad cost inflation affecting everything from food to other goods and services perhaps making the standard of living no more cost effective for the original targeted increased wage recipients than preceding the changes.

The consumer price index inflation for Ontario approximated 2.3% compared to Canada approximating 1.9% in 2018. The Bank of Canada projects inflation for Canada to fall closer to 1.8% in 2019, however Ontario is still expected to have inflation of over 2.1%. McMaster will launch a procurement project in 2019/20 aimed at delivering savings by increasing pre-negotiated contract buying. The project, MacBuy, should assist in defraying from of the inflationary pressures across the University.

Unprecedented cost inflation is also affecting books and academic journals as competition amongst publishers' declines and monopolies arise controlling the majority of the academic journals. The result is that average acquisition costs for books and journals rises by over 5%, with some individual titles increasing even more. This cost pressure further increases, as some prices are associated with the University's research intensity factor, whereby McMaster's increased research success has led to automatically increased library costs for the same products.

Utility prices also remain volatile. The biggest cost pressure is any increase in electricity rates, which is affected by the Global Adjustment for provincial infrastructure, and changes to the electricity market. McMaster's suspension of the Chasing the Peak initiative in 2017 did not result in the expected increase in costs due to changes in the energy market. As well, Ontario's Cap and Trade System started in 2017, which was to impact McMaster in the future following the use of free allowances until 2020, was cancelled in 2018. With the recent legislative changes to the Energy

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Market, we are now receiving rebates that have reduced electricity pricing. However, in addition, the City of Hamilton is planning water rate increases and potentially additional development charges, which could result in the cancellation of once-viable projects.

The 2019/20 budget includes allocations to support units for compensation inflation. However, the budget model does not allocate resources on a basis of inflationary needs rather units have an opportunity to request funding for inflationary pressures. The decision to allocate compensation related inflationary funding or other inflationary requests is made on a year-by-year basis and, as a conservatism rule, budget managers are expected to find efficiencies in order to meet higher costs.

7.6   Currency Exchange Rates

The cost of certain expenditures sourced internationally are impacted by currency. Most of McMaster's imported goods and services are in US dollars (USD). The Canadian dollar has decreased in value over the past several years compared to its American counterpart, from trading at par in January 2013 to $0.75 USD in mid-March 2019. If the US Federal Reserve raises its rates, the Canadian dollar is likely to weaken further impacting McMaster's cost of educational materials purchased in USD.

Among other economic factors, the direction of the Canadian dollar will be impacted by the level of interest rates in Canada relative to the US, and by uncertainty around the nature of US trade relations and the UK's Brexit. If the US Federal Reserve raises interest rates at a faster pace than the Bank of Canada, the Canadian dollar is likely to weaken, further impacting McMaster's exchange risk.

McMaster receives a portion of its revenues in USD and holds a USD account with funding levels set to settle annual USD expenditures. The University's approach to USD funding management acts as a partial natural hedge to US foreign exchange risk.

7.7   Pension and Post-Retirement Benefits

7.7.1   Pension Plans

McMaster University maintains defined benefit (DB) and group RRSP pension plans for full-time employees. The University has made significant progress to reduce the long-term financial impact of pension obligations through the collective bargaining process for unionized employees. All employee groups remaining in the DB plans have increased contributions over the past few years. Employee cost sharing through contribution increases help plan sustainability and are one of the key reasons that the plans have previously qualified for temporary solvency relief measures offered by the province.

The Ontario Pension Benefits Act and regulations require McMaster University to submit an actuarial valuation for the Contributory Pension Plan for Salaried Employees of McMaster University Including Divinity College (Plan 2000) and the Contributory Pension Plan for Salaried Employees of McMaster University Including Divinity College (Original Plan) (together known as "the Salaried Pension Plans") no later than every three years. The legislative filing requirements were met by filing the Salaried Pension Plans actuarial valuations as at July 1, 2017 in March 2018. However, in April 2018 the Ontario Pension Benefits Act Regulation 250/18 was enacted for all plans filed on or after January 1, 2018. The Act formalized into law a number of anticipated changes to the defined pension plan funding framework, including:

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- Strengthening going concern funding by applying a best estimate discount rate (no margin), creating a new funded provision for adverse deviation (PfAD)[5], and applying a ten-year amortization of going concern special payments and re-amortization at each valuation point

- Elimination of solvency funding requirements where funded solvency status is 85% or greater.

- New funding rules for benefit improvements and restriction on contribution holidays

As a result, of the funding rule changes, the University elected early adoption for the Salaried Pension Plans, completing new valuations as at July 1, 2018 filed in March 2019, based on the following benefits:

- Improvement in the funded status of the Salaried Pension Plans since the last valuation, which is captured in pension contribution certainty to 2021.

- Reduction in fees payable to the Pension Benefits Guarantee Fund ("PBGF"), which is the provincial benefit plan insurance fund. Savings to McMaster approximate over $4 million for 2019 and 2020.

- Elimination of solvency payments because the Salaried Pension Plans meet the new solvency funding threshold of 85%. These reductions are partially offset by new payments into the PfAD, however the overall cash flow is significantly improved.

- Filing under the new rules make explanations about the current status of the plan more transparent applying the current regulations rather than referring to a measurement until 2020 under the old regime.

The consolidated budget incorporates the updated salaried valuations and former regime rules for the smaller closed hourly plan (next scheduled valuation is July 1, 2019).

Funding requirements associated with pension plans remain challenging as employee contributions never fully reached 50% of the current service costs despite increased contributions levels given other changes such as improved mortality. The table below shows both the salaried (Plan 2000) and hourly plans on a going-concern basis[6] and a solvency basis[7]. The status of the plans based on the most recent full valuations have improved largely due to strong asset returns over the last several years and an improved interest rate environment.

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[5] The amount required to fund the provision for adverse deviation is a function of a pension's going-concern liabilities and its related assets and how those funds are invested across debt and equity holdings. Further, the amount required is 3-5% higher for plans defined as closed, or not open to new entrants or original employee categories (McMaster's hourly and original salaried plans). Since McMaster's Plan 2000 is not open to all original employee categories the new legislation defines the plan as a closed plan.

[6] Going-concern basis refers to the pension plan asset and liability gap measured assuming the University will continue to operate over the long term, thereby using a long-term interest return rate for assets and discount rate for liabilities, and that the University will continue to collect employee contributions over future working periods until retirement.

[7] Solvency basis refers to the pension plan asset and liability gap measurement methodology whereby the key assumption is that the University will cease to continue operating and must immediately settle pension obligations.

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Table 1: Pension Plan Status

$ millions	Plan 2000 Valuation date July 1, 2018*		Hourly Plan Valuation date July 1, 2016	
Going concern surplus (deficit)	$	(143.4)	$	1.6
Solvency surplus (deficit)	$	(197.2)	$	(16.0)
Solvency ratio		91%		72%

*Including PfAD

The Plan 2000 going concern surplus before the PfAD is $90.9 million (versus a $30.8 million deficit at July 1, 2017), however the new PfAD to be funded is $234.3 million. The solvency deficit of $197.2 million reflects a significant improvement compared to the July 1, 2017 solvency deficit of $342.1 million. The estimated minimum total annual funding requirements (current service cost and special payments) for Plan 2000 are $6.8 million lower over 2018/19 and 2019/20 under the new filing in addition to a reduction in required payments to the pension benefit guarantee fund. Funding originally planned to be directed to solvency payments will be redirected to the PfAD.

In 2019/20 the province will undertake a review of its legislation affecting employees working and drawing a pension concurrently. The impacts to salary and pension costs related to this initiative are not known or factored into the budget.

7.7.1   NON-PENSION EMPLOYEE FUTURE BENEFITS

McMaster offers non-pension retirement benefits including extended health, dental and life insurance for many of its full-time employees. Plan design changes intended to reduce the size of the liability[8] have been made over the past few years. In 2011/12, the University worked with its actuaries to quantify the impact of plan changes on the unfunded liability and while the liability remains largely unfunded, the changes employee groups agreed to mitigate its growth significantly. In addition a post-retirement benefit (PRB) reserve has been established, which is unitized in the investment pool. This internally restricted reserve accumulates interest and is funded by a 0.25% surcharge included in employer benefit costs. The reserve initially had only 1% of the required cash to fund the present value of the obligation, but today the reserve holds just under 9% of the required cash obligation. The PRB reserve is reviewed every three years involving an updated actuarial valuation. Strategies to ensure this obligation is settled may include any combination of the items noted below:

- Further plan design changes and co-payment strategies;

- Continuation of a charge to operating and research units and/or addition to the support unit budget allocation to increase the funding reserve; and/or

- Contribution of any additional surpluses from the Operating Fund, University benefits reserve or Investment Reserve.

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[8] As of April 30, 2018, the liability for non-pension employee future benefits is estimated at $248 million, with reserves of $83 million.

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7.8   FACILITIES

7.8.1   CAPACITY

Since 1960, McMaster has added a total of 37 buildings on campus (38 on completion of the Peter George Centre for Living and Learning in 2019) to its existing infrastructure through new construction. Renovations and additions have often been completed in order to update technological, electrical, and utility infrastructure as well as add usable space. These construction projects have been supplemented with infrastructure growth off campus, particularly in the last decade, through the procurement and/or lease of buildings and property.

Physical capacity on McMaster's main campus has been largely determined by its geographic limitations and physical structure, which contains a well-established hierarchy of streets and natural features. As identified in the Campus Master Plan, the current capacity available for new development is estimated to be 3,000,000 gross square feet of ground area on the main campus.

Enrolment growth is an additional stress on the capacity of physical space. The amount of classroom space on campus is close to 85% of what is needed as defined by Council of Ontario Universities (COU) standards. Residence bed spaces fall short in accommodating all first-year students. In McMaster's most recent Campus Capacity Study further critical needs include graduate student offices, assembly facilities, administrative offices and related space, and service space. In addition, accessibility compliance needs are high with the *Accessibility for Ontarians with Disabilities Act*, including new installations of barrier-free ramps, washrooms, and fire alarm strobe lights.

Multiple projects are underway to address capacity issues, including the Peter George Centre for Living and Learning due for completion August 2019, which will add a 36% increase in classroom space, as well as an expansion of the McLean Centre for Collaborative Discovery and new residence buildings for undergraduate and graduate students. Further specific funding for classroom renewal and accessibility retrofit projects has been included in the budget. Some projects underway are funded from the MTCU MD Expansion or Grad Expansion grants, which are annual capacity expansion grants based on delivered additional enrolments. The grant programs extend annual capital commitments to 2031 and some contractual capital commitments exist relying on these future annual funds. However, the MTCU recently announced cancellation of the expansion grant program, regardless that the additional expanded enrolments being delivered. The cancellation means a loss of $52.9 million in expected capital funds. This recent announcement will require additional changes to capital plans in the annual 2019/20 update.

7.8.2   DEFERRED MAINTENANCE

A total of 69.8% (44 of 63) of McMaster buildings are over 40 years old, of which 63.5% have a fair to poor facilities condition, see figure below. The current deferred maintenance backlog in academic buildings and infrastructure excluding residences and McMaster University Medical Centre (MUMC) is estimated at $259.6 million. Maintenance needs are prioritized based on critical and non-critical building systems. With deferred maintenance funding of approximately $13 million annually from multiple sources including the Operating Fund and the MTCU, the backlog of critical priorities is forecasted to slightly decrease from the 2019 position of $194 million to approximately $180 million in 2029. However, additional requirements may be identified as a result of future rotational infrastructure audits.

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Further in 2018/19 the higher education sector agreed to revise the former building condition assessment approach. The change will result in more accurate building replacement costs as well as deferred maintenance costs than under the former model. The former model included building assessments using a cost model applying a square footage approach, McMaster used this model for re-assessments of the University infrastructure each year. The new measurement approach will use a system model that considers the functions within the building to assess requirement costs. The requirement costs were also not reflective of the actual project costs and the new assessments add a factor of 1.3 to the requirement cost to offset this. This change will result in future higher reported deferred maintenance costs. Further McMaster will adopt the same measurement cycle as peers, measuring 20% of the University's infrastructure each year. Prior to 2019/20, McMaster had measured 25% of its deferred maintenance costs each year.

Facility Condition Index (FCI)
An industry standard parametric tool used to compare relative building conditions.

$$FCI = \frac{\text{total cost of existing deficiencies}}{\text{current replacement value}}$$

Excellent   Good   Fair - Poor

0%   5%   10%   50%   100%

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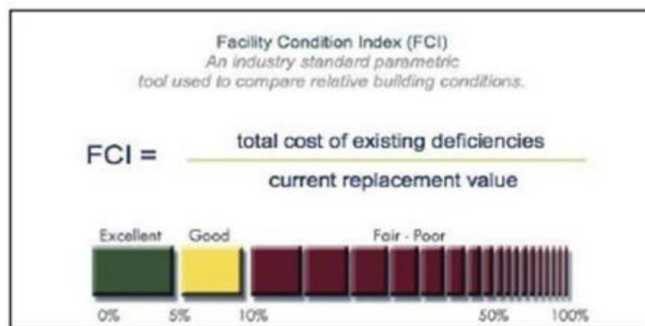
8   BUDGET CREATION

8.1   ACCOUNTABILITY

The effective management of the budget is a responsibility of the President assigned by the Board of Governors. The University's budgets are prepared on a modified cash basis and pursuant to the concepts of fund accounting. Fund accounting enhances accountability and budgetary control by assuring that restricted grants and contributions are spent for the purposes intended.

The President delegates budget accountability to the Budget Committee, a sub-committee of the University Planning Committee, to oversee the development of budgets for both the Operating and Ancillary Funds, which account for two thirds of the University's annual expenditures, and to recommend the annual budget to the President. In addition, specifically externally funded programs, such as those funded by the Ministry of Health and Long-Term Care, are included in each envelope's submission to the Budget Committee. The funds not overseen by the Budget Committee have restricted uses and other governance and/or committee oversight.

8.2   BUDGETING PRINCIPLES

In his September 2011 letter *Forward with Integrity*, President Deane stressed that McMaster's future success will depend on the cultivation and celebration of integrity in all its forms. He outlined the following principles that will guide the University community as we strive to achieve our goals.

- We are an institution devoted to the cultivation of human potential, which we believe cannot be realized by individuals in isolation from one another, from their history or their imagined future, from the society which surrounds them, or from the physical universe which sustains them. Our programs and activities will reflect this comprehensive view.

- It follows that in defining our strengths and seeking to build on them, we will adopt a multidisciplinary perspective, recognizing that even the most specialized problem requires an appropriately broad-based approach.

- Our future shall be continuous and consistent with our past, expanding upon and fulfilling the historic character of McMaster as an institution. We will foster the distinct identity of this University, while at the same time continuing to recognize the importance of collaboration and dialogue with sister institutions in Ontario, Canada, and abroad.

- Notwithstanding that commitment to continuity with the past and to coordination with practices elsewhere, we will place the highest value on original thought and on innovation.

- To that end, we will not only reaffirm the importance of radical questioning at the heart of the academic enterprise, but we will ensure the integrity of our work by bringing a critical view to all of our practices – those which bear directly upon education and research as well as those less directly related to it.

- Wherever possible, we will reduce or eliminate obstacles to cooperation.

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- We will acknowledge, and seek to integrate in all our work and in ways appropriate to our specific fields, an obligation to serve the greater good of our community – locally, nationally, and globally.

The 2019/20 budget and following two-year plans are developed using principles and priorities aligned to *Forward with Integrity* and embedded in the Strategic Mandate Agreement:

- The academic and research mission of the University is foremost in the development of budget guidelines for envelope managers. This includes student experience and support.

- Revenue must be strategically allocated in support of the University mission.

- Ongoing and one-time costs need to be identified in order to develop a clear picture of McMaster's overall financial position.

- Envelopes must be structurally balanced within each Vice-President's area of responsibility, with ongoing expenditures less than or equal to ongoing revenues.

- Allocations of funding to priorities must be decided using a rigorous process in a way that is strategic, fair and equitable across the University, and avoids a piecemeal approach.

8.3   BUDGET DESIGN

Separate funds are set up for activities, with each fund comprised of its own revenue and expenses. The following funds are used:

1. **Operating Fund**: Unrestricted general revenues and expenses that are directly related to the mission of the University, education and activities supporting research (i.e. not restricted by an agreement or contract). The Board of Governors has approved a policy of permitting envelopes to carry forward unexpended budgets into the subsequent fiscal year.

2. **Research Funds**: Research-related funds externally restricted by an agreement or contract for specific research purposes. The use of these funds is restricted by the donor or granting agency.

3. **Capital Fund**: Funding and expenditures for capital projects.

4. **External Endowments**: Donations or bequests received by the University that have a non-expendable requirement as well as other legal requirements for use as agreed upon by the donor and the University.

5. **Internal Endowments**: Unrestricted donations and bequests, and other monies which have been endowed by action of the Board of Governors.

6. **Ancillary Fund**: Sales of goods and services by departments that are defined as being supplementary to the University's primary operating activities of education and research. Such sales may be made to the University community and/or to external clients. Ancillary operations are self-sustaining.

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7. **Specifically Funded**: Funding provided by an external entity, restricted by an agreement outlining expenditure of the funds and a requirement to return unspent funds at the end of the term.

8.4   BUDGET MODEL

To allocate Operating Fund resources, McMaster uses a hybrid between a full activity-based model and an incremental model. Implemented in 2014/15, the model aims to strike a balance between providing transparent activity-based funding to the Faculties while maintaining financial flexibility to address strategic goals. Funding to support units is fixed year-over-year where incremental allocations are annual decisions based on funding availability and unit-level requests considered a priority. Support unit funding does not increase with changes to enrolment or research.

Figure 4: Operating Fund Budget Model Revenue Streams

In the simplest terms, all central revenue streams are allocated to Faculties based on activities (such as student enrolment and teaching) as earned. The model mostly matched how the MTCU flowed funding to universities. However, the model allows for two strategic funding pools to be created as a percentage of Operating Fund revenue: i) the Research Discretionary Fund to be used by the Vice-President (Research) for strategic research initiatives, and ii) the University Fund to be allocated by the Provost for pan-university strategic purposes.

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Recognizing that the indirect costs of research are not fully covered by overhead revenue, the Research Infrastructure Fund and Research Excellence Fund redistribute a portion of revenue to the most research-intensive Faculties. Further research support exists in the way occupancy costs are charged out to a host Faculty at an overall campus average rate per square meter without distinction to the higher cost of research labs.

After all revenue allocations are made to the Faculties and strategic funds, allocations of central support unit costs are charged to Faculties based on a relevant proxy-based cost drivers, for example Human Resources costs are charged out based on employee full-time equivalents.

All Faculties or activity unit allocations are adjusted based on actual revenues and cost driver results after year-end.

Figure 5: Operating Fund 2019/20 Budget Framework Allocations by Area
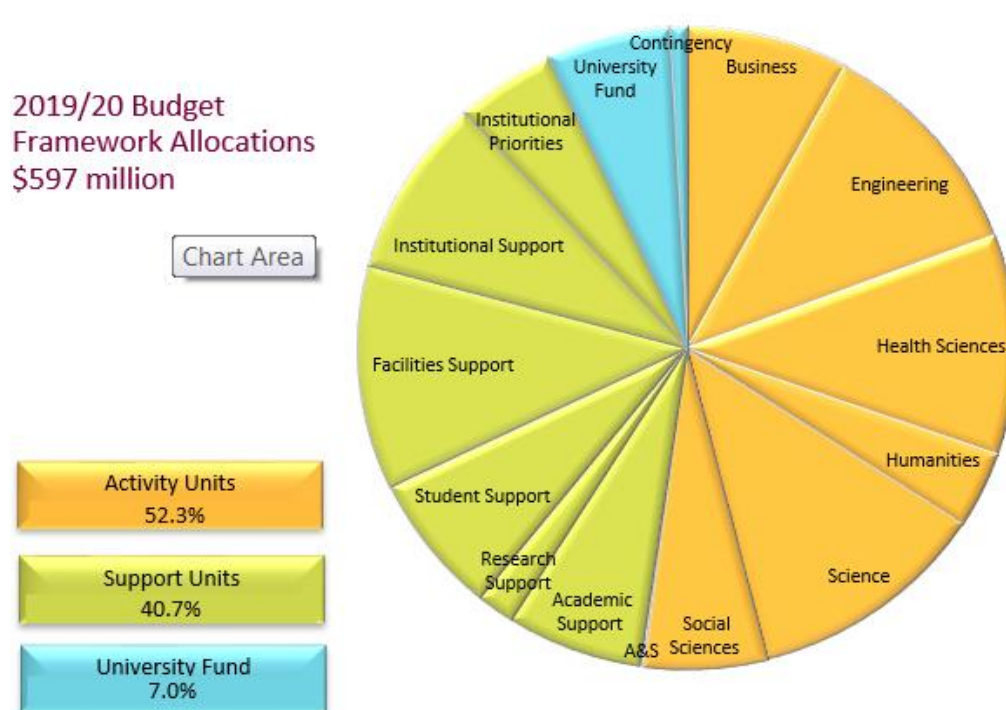
The budget approach has been continually assessed and evaluated both internally and externally, the latter involving the sharing of best practices with other Canadian and U.S. universities, as well as participating in research undertaken by the Education Advisory Board. Review feedback and ongoing input and analysis has resulted in some changes to the budget to either address concerns or enhance incentives aligned to strategic priorities. The budget adjustments mostly alter values of the parameters and not the underlying principles. The most recent review of the budget model involving external and internal budget leaders was released in September 2017, and did not recommend any substantive changes be made. Additional information on the budget model is available at http://budgetmodel.mcmaster.ca/.

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Changes to the MTCU funding allocation approach are expected in the next SMA shifting funding from primarily enrolment based toward roughly 60% performance- or outcomes-based by 2025. The shift in funding focus by the MTCU will be examined for its possible implications on the University's budget model approach.

8.5   BUDGET CYCLE

Figure 6: Budget Cycle

June: The budget cycle for the Operating Fund and Specifically Funded Programs begins as the Budget Committee reviews and approves the assumptions and guidelines that will apply to all units across the University. Submissions include a projection for the current year, budget for next year, and plans for the following two years. The Budget Committee requests the submissions on a standard template, identifying:

- Strategic objectives and their relationship to *Forward with Integrity* and the Strategic Mandate Agreement

- Key metrics and benchmarks, including enrolment trends, ratio of students to faculty, staffing levels, and space requirements

- New initiatives and cost pressures, the actions taken to achieve a balanced budget, effects on the University community, and the related risks

- All one-time costs and the related funding sources

- Capital and/or renovation plans, including funding sources or internal financing capacity

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Benefit rates are set to cover statutory deductions as well as pension, post-retirement benefits, and other benefit costs associated with employer plans offered to employee groups. Assumptions for salary and wage increases by employee group are reviewed, incorporating information from collective agreements. Support units have a fixed budget year-over-year unless otherwise unit-level approved allocations and/or approved strategic investments are made. Incremental allocations to support units to defray compensation increases are discussed, and if feasible are allocated for the upcoming budget year only.

July to October: Budget allocations to activity units follow both the total level of funding and the allocations made to support units. The budget cycle is divided into two stages, with support units preparing their budgets first from July through October, so that any funding for any recommended priorities may be incorporated into the activity unit allocations.

November: Support units present budgets during a three-day Budget Committee conference, attended by additional guests including the Vice-Presidents, Faculty Deans and Directors of Faculty Administration. This allows the Faculty or activity unit leaders to consider and comment on the budget priorities and expenditures of all support units before the Budget Committee votes to receive each budget.

While receiving budget submissions, the Budget Committee identifies unfunded priorities and potentially unacceptable cost-cutting actions. The Committee explicitly prioritizes these items for review by the President, recommending some for funding. In consultation with the Vice-Presidents, as many of these important items as possible are funded.

November to March: Activity units begin budget preparation. Reasonable estimates of future enrolment and revenues based on provincial regulations, strategic objectives, historical demand, and other commitments are prepared. The activity unit allocations are updated in the budget model using the revenue estimates and the final support unit allocations, and the Operating Fund Guidelines are released with the updated allocations.

Ancillaries are self-funded and not dependent on support unit allocations, but may use enrolment assumptions in their revenue estimates. Ancillary Fund Guidelines are issued using the same salary and benefit cost assumptions as the Operating Fund, and including rent charges and amounts to be contributed to the Operating Fund.

April: Activity units and ancillaries present their budgets during a two-day Budget Committee conference, attended by additional guests including the Vice-Presidents, Faculty Deans and Directors of Faculty Administration. The Budget Committee votes to receive each budget, and reviews the final total.

Budgeted consolidated financial statements are prepared incorporating plans for the remaining funds. In order to finalize the budget, senior management reviews the financial position over the three-year planning horizon and makes adjustments, where necessary, to ensure reasonableness of the consolidated position and continued financial sustainability while promoting the academic mission.

May to June: The budget is presented to the University Planning Committee and the Senate for information and comment before presentation to the Planning and Resources Committee and Board of Governors for approval.

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8.6   REVENUE ASSUMPTIONS

8.6.1   ENROLMENT

Overall enrolment is projected to increase in accordance with the Strategic Mandate Agreement and the enrolment management targets, enabled by the completion of Wilson Hall in 2016/17, the Peter George Centre for Living and Learning opening in August 2019, and the McLean Centre for Collaborative Discovery. McMaster demand remains greater than the number of spaces available. Many applicants whose academic record suggests that they could be successful at McMaster must be turned away. Enrolment increases are expected to be maintained and managed through a combination of admitting eligible domestic applicants up to the corridor midpoint and allowing increased international participation rates due to MTCU limitations on domestic new entrants.

The undergraduate enrolment projection model uses the Enrolment Management Team's level 1 targets to forecast each Faculty's annual intake. For movement between levels 2 and above, within each Faculty and between Faculties, the model applies a flow-through methodology that incorporates each Faculty's three-year average transition rate.

To project graduate enrolment, since no level 1 intake targets are set at the graduate level, the graduate enrolment projection model is a flow-through model based on the following two elements:

- Each Faculty's historical level 1 intake: The 2018/19 level 1 intake (i.e. as of November 1, 2018) is applied as the anticipated level 1 intake from 2019/20 to 2023/24, unless a specific target was provided by a program.

- The transition probabilities of students from levels 2 and above: Similar to the undergraduate projection, for movement between levels 2 and above, within each Faculty and between Faculties, the graduate model applies a flow-through methodology that incorporates each Faculty's three-year average transition rate, adjusted for mid-year graduation rates.

For both undergraduate and graduate enrolment projection models, actual enrolment data at the student level are used to simulate the projections. The projection data includes FFTEs, headcount and WGU counts by Faculty, level, registration status, immigration status, and fee category.

Table 2: Enrolment Assumptions

		2018/19 Budget	2018/19 Projection	2019/20 Budget	2020/21 Plan	2021/22 Plan
Undergraduate FFTEs	Domestic	23,419 +0.6%	23,645 +1.6%	23,446 -0.8%	23,424 -0.09%	23,446 +0.09%
	International	3,062 +30.8%	2,800 +19.5%	3,138 +12.1%	3,438 +9.6%	3,669 +6.7%
	Total	26,481 +3.4%	26,445 +3.3%	26,584 +0.5%	26,862 +1.0%	27,115 +0.9%
Graduate FTEs	Domestic	3,056 +2.8%	3,081 +3.6%	3,125 +1.4%	3,163 +1.2%	3,171 +0.2%
	International	1,140 +7.2%	1,238 +16.5%	1,258 +1.6%	1,284 +2.1%	1,298 +1.1%
	Total	4,196 +4.0%	4,319 +7.0%	4,383 +1.5%	4,447 +1.5%	4,469 +0.4%

8.6.2   TUITION RATES

The domestic tuition rate increase is expected to match that allowed by the MTCU tuition fee framework (see Table 3), for 2019/20 and 2020/21. In the absence of the Ministry tuition fee framework policy for 2021/22 and beyond, tuition increases have been held to zero percent, in other words frozen.

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Incremental international tuition revenues are included in the budget and planning years, due to McMaster's corridor-capped domestic intake, allowing greater international participation. For 2019/20 and 2020/21, international undergraduate and graduate rates are assumed to increase by 10% per year for level 1 and 6% for level 2 and above, with exceptions to specific programs. However, due to the 4% maximum increase guarantee granted to international students enrolled prior to 2019/20, the 6% increase will be applied only to new cohorts. Note that international PhD tuition will mirror that of the domestic PhD in accordance with McMaster's decision last year to harmonize the international and domestic PhD tuition.

Table 3: Tuition Rate Assumptions

				2018/19 Budget		2018/19 Projection		2019/20 Budget		2020/21 Plan		2021/22 Plan	
				Level 1	Level 2 +	Level 1	Level 2 +	Level 1	Level 2 +	Level 1	Level 2 +	Level 1	Level 2 +
Tuition rate	Domestic	Undergraduate	Arts & Science or other	3%	2.25%	3%	2.25%	-10%	-10%	0%	0%	0%	0%
			Professional	5%	5%	5%	5%	-10%	-10%	0%	0%	0%	0%
		Graduate	Research (with thesis component)	0%	0%	0%	0%	-10%	-10%	0%	0%	0%	0%
			Professional (course work only)	5%	5%	5%	5%	-10%	-10%	0%	0%	0%	0%
	International	Undergraduate	Arts & Science or other	8%	4%	8%	4%	10%	6%	10%	6%	10%	6%
			Professional	8%	4%	8%	4%	10%	6%	10%	6%	10%	6%
		Graduate	Research (with thesis component)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
			Professional (course work only)	8%	4%	8%	4%	10%	6%	10%	6%	10%	6%

8.6.3 OPERATING GRANTS

In accordance with the provincial funding formula, grants are held flat at essentially the 2016/17 level as domestic enrolment remains within the corridor at the enrolment cap. However, a net decline in the operating grant is expected associated with the incremental $750 per international student tax charged by the province to universities.

Table 4: Operating Grant Assumptions

			2018/19 Budget	2018/19 Projection	2019/20 Budget	2020/21 Plan	2021/22 Plan
Operating grants	Core Operating Grant (COG)		$2,903/WGU based on WGU midpoint 2016/17	Flat	Flat	Flat	Flat
	Differentiation Grant		$261.7/WGU based on WGU midpoint 2016/17	Flat	Flat	Flat	Flat
	Graduate Expansion Grant rate	COG	± $2,903/WGU based on WGU 2016/17 as base	Flat	Flat	Flat	Flat
		Differentiation	± $261.7/WGU based on WGU 2016/17 as base	Flat	Flat	Flat	Flat
	International student reduction		$750 per international student	Flat	Flat	Flat	Flat

8.7 ACTIONS TAKEN TO ACHIEVE THE STRATEGIC PLAN

All areas across the University are involved in initiatives that support the strategic plan. Activity units and ancillaries fund activities from current revenue and appropriations[9] carried forward. Under the budget model, allocations to support units are held flat, therefore new initiatives are either funded from appropriations or a request is made to the Budget Committee to fund priority items.

The budget process provides a transparent means of prioritizing incremental funding for strategic investments or unavoidable costs in support units. For the 2019/20 budget, additional allocations have been made for:

- A full-time Indigenous Curator position in the McMaster Museum of Art

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[9] Appropriations are the accumulated surpluses or deficits from prior years, also known as reserves. In accordance with the Operating and Ancillary Budgets Policy, these balances are carried forward to future years. Surplus appropriations may be used to provide funds to offset one-time spending and investments in deficit-reducing strategies. Envelope managers must present plans to eliminate deficit appropriations with their budget submissions.

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- Further investment in the libraries' operations to eliminate potential structural deficits and provide collection and learning support

- The Forge entrepreneurship program

- Entrance scholarships for the higher enrolment expected

- For deferred maintenance as part of Phase 2 of the Campus Accessibility Action Plan

- Maintenance, custodial and utilities costs of the Peter George Centre for Living and Learning due for completion in 2019

- Various IT initiatives resulting from the IT Review and some license fee increases

- Wireless network expansion

- Further enhanced life cycle replacement cost funding for technology renewal assets

In addition to the above, a number of smaller base or one-time investments have been made in the 2019/20 budget and/or planning years. Not yet included in the budget are incremental resourcing needs in 2019/20 or beyond associated with a multi-year research initiative that began in 2018/19. Further to the actions that directly support the strategic plan, a series of administrative support reviews and benchmarking activities have been conducted to ensure that non-academic services are operating at maximum efficiency while continuing to reflect McMaster's values.

Initiated in 2017/18, UniForum is an annual benchmarking and feedback program that allows McMaster to collect information and data about the distribution of non-academic services and activities that support teaching and research. Participation in the UniForum program enables McMaster to understand how non-academic support services are being delivered, where they are being delivered, and at what cost. This information is being used to help the University fully understand how it is supporting the academic and research mission and how it benchmarks against other participating institutions. There are 46 participating post-secondary institutions worldwide—23 universities in Australia and New Zealand, 18 in the United Kingdom and now 4 others in Canada.

The Research-Finance Review brought together a team of internal and external researchers and administrators to evaluate delivery of strategic research financial and reporting services, and to determine the most efficient and effective basis on which to deliver those services. The resulting recommendations, including review and coordination of roles and procedures, are in various stages of implementation. Projects such as MacBill (an accounts receivable module), MacBuy (a procurement tool), and the new research report are examples of initiatives prioritized from the review.

The IT Services Review completed in 2016, resulted in the launch of a new IT governance framework in 2017. An IT Executive Committee now oversees enterprise-wide systems needs supporting teaching and learning, research, administration, and infrastructure and security. In 2018/19 a new IT Strategic Plan was developed which will help guide future IT investments. A number of IT projects have been prioritized, developed, and approved in the budget or planning years applying the new framework and plan.

An HR review was launched in the Fall of 2018, with a report expected in mid-2019.

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Specific activities contributing to achieving the University's *FWI* strategic plan are put forward in each Faculty and department budget submissions. A summary of these activities follows.

8.7.1   STUDENT EXPERIENCE

Key initiatives affecting the student experience that McMaster will either continue or launch in the budget year are:

- Collaborate with international institutions to offer increased opportunities for student research and exchange experiences. Further, create a global rotational program with local employers that have offices abroad (i.e.: ArcelorMittal Dofasco). This initiative will provide students an opportunity to experience a job in different parts of the world but working for the same organization.

- Initiate a Graduate Admissions project aimed at easing the application process for potential students and reducing the workload for program administrators.

- Increase support for international students through expanded programs to enhance English skills.

- Explore revision of the French program's language curriculum to align with the Common European Framework of Reference for Languages (CEFRL) in order to better prepare McMaster students for internationally-recognized diplomas awarded by the French Ministry of Education.

- Launch a new Global Experience Award for students on exchange. As well, launch a National Academy of Engineering (NAE) Grand Challenges Scholars Program (GCSP).

- Continue mentoring and experiential learning programs. As well, engage alumni, living abroad, to mentor students who are going abroad to decrease anxiety surrounding mobility.

- Enhance Student Support Services partnerships with Faculties of Social Sciences and Humanities to offer programming that addresses the needs of students at risk. Developing pre-university programming that will better prepare 1st year incoming students for the university's learning environment.

- Provide training in mental health & wellness, responsible drinking & sexual violence and harm reduction education (Opioids and Cannabis). As well, add an additional mental wellness week hosting a workshop series inviting speakers on the various dimensions of wellness.

- Conduct a review of existing and potential library services targeted to improving the 1st year student experience with a focus on mental health, academic success and retention.

- Continue to bring together students and campus/community partners in living-learning communities for a focused experience that enhances and extends student learning outside of the classroom.

- Deliver enhanced student spaces by opening the new Peter George Centre for Living and Learning. Initiate the development of the McLean Centre for Collaborative Discovery, and

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continue the expansion of the Athletics and Recreation facility to provide additional athletic and student wellness space.

8.7.2   INNOVATION IN TEACHING AND LEARNING EXCELLENCE

- Design and build "collision space" within the Health Sciences Library that, once completed, will provide programming in support of student & faculty innovation and entrepreneurship. Further, partner academic curriculum with the Health Sciences Library to deliver the design studio courses (iBiomed curriculum) to define and support emerging health innovation opportunities for students.

- Embark on a transformational shift in Engineering to encourage design thinking, creativity, reflection and integrated learning through what we are calling The Pivot. The Pivot will be the first program of its kind to intensely focus on our engineering students and their learning, not the specific projects they will tackle.

- Launch Digital Citizenship curricula to help learners develop the skills necessary to become ethical users and producers of health information. Participate in national ehealth initiative to improve health informatics training across all Canadian medical schools with a view to improving health-care outcomes and reducing costs. Develop and deliver undergraduate course on the "politics" of health information.

- Embed digital learning excellence in new Business programs.

- Pilot a new model of providing an integrated blend of pedagogical and technical support in McMaster's active learning classrooms (ALCs). Continue to deliver the intensive 24-hour Instructional Skills Workshops (ISW) within and across Faculties at McMaster.

- Re-envisioning of thesis writing boot camps, and develop thesis-writing module based on boot camp presentations.

- Implementation of Databee Exams Manager, a new system to manage examinations, improving the overall exams process.

- Partner with the Faculties, libraries, and the Campus Store to proactivly plan for greater evolution and transformation of course content and supply in an effort to optimize the availability of lower or no cost educational materials.

- Actively developing a micro-learning strategy in Continuing Education given the market trend for just in time knowledge and skills training.

- Continue to publicly recognize outstanding contributions to education through innovation, continued excellence in teaching, and enhanced student learning by funding the President's Award for Outstanding Contributions to Teaching and Learning, and supporting the annual President's Retreat for past and present award winners to share best practices, share educational innovations and reflect on the overall student experience.

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8.7.3   ACCESS AND EQUITY

- Increase the Library's collecting of books by First Nations authors. Actively build collections of rare books and primary sources relating to indigenous peoples. Contribute to national efforts to revise and adopt appropriate subject descriptors.

- Improve Indigenous governance and policy development to maximize the student experience and success of Indigenous students through Indigenous Student Services (ISS). Further, continue with Longboat and Ontario Graduate Scholarship (OGS) Indigenous awards adjudicated and directed by McMaster Indigenous Research Institute (MIRI), Indigenous faculty and staff on campus.

- Development and launch of the McMaster Access Strategy to encourage under-represented groups to participate in post-secondary and provide a path for students who otherwise might not be able to attend McMaster. As well, develop a mentoring program for high school students by McMaster students who participated in the Career Access Program (CAPs) program to build efficacy, confidence, and motivation (breaking down barriers).

- Launch a new Exchange Bursary program to provide under-represented groups with access to exchange opportunities.

- Work with educational programs affiliated with the Association of Faculties of Medicine of Canada (AFMC) Network of Libraries to coordinate Health Sciences Library initiatives to support curriculum changes resulting from the *Truth and Reconciliation Commission of Canada's* (*TRC's*) *Recommendations for Training Health Care Providers*.

- Revamp fees structure for Graduate programs, especially Masters; a unified change motivated by considerations for growing student mobility and accommodations.

- Continue the implementation of the Campus Accessibility Action Plan to improve access to campus facilities. Further, continue to prioritize accessibility and health related maintenance requests as the most urgent projects.

- Progress action plans across Hospitality Services related to a volunteer Accessibility for Ontarians with Disabilities Act audit aimed at delivering greater accessibility across all food operations. As well, complete an action plan for the Campus Store's volunteer Accessibility for Ontarians with Disabilities Act (AODA) audit to address findings.

- Identify and implement employment equity principles and best practices (e.g., objectives related to data collection, training and support of search committees). As well, progress the hiring practices actions underway with the office of employment equity, diversity and inclusion that includes selection committee training with a focus on unconscious bias, and the provision of census information at a unit and local demographic level.

8.7.4   RESEARCH EXCELLENCE AND IMPACT

- Launch the Brighter World Research Initiative.

- Complete plans underway to increase the McMaster Nuclear Reactor's capacity in order to support research programs and requests to use our facility both internally and externally.

- Support research commercialization of McMaster researchers by developing spaces for research spin-off companies at the McMaster Innovation Park enabling the relocation of new

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companies from campus to the innovation hub. In exchange, McMaster negotiates arrangements with newly formed companies that provide new companies access to space at an affordable start-up rate with access to shared services to reduce initial operating costs in exchange for equity, convertible debt, or equivalent consideration.

- Partner in the advanced manufacturing consortium, along with Western and Waterloo. The province has invested funding in this consortium to develop expertise in the area of advanced manufacturing.

- Expand graduate student seminar series with sessions focused on information management, open access publishing, predatory publishing, and strategies for improved publication success.

- Develop additional support programming to enhance McMaster's ability to recruit, retain and develop diverse high caliber faculty and staff.

- Expand research space available to the Institute on Ethics for Policy and Innovation (IEPI) through a major renovation investment.

- Implement the new web-based system called McMaster Research Ethics Manager, to streamline the submission process of projects to the McMaster Research Ethics Board and enhance review and monitoring of research ethics applications.

8.7.5   INNOVATION, ECONOMIC DEVELOPMENT AND COMMUNITY ENGAGEMENT

- In addition to the research commercialization strategy that is building a research business hub at the McMaster Innovation Park keeping research spin-off companies in Hamilton; McMaster will also invest in four large projects beginning in 2019/20. First, the McLean Centre for Collaborative Discovery a seven to nine storey expansion on top of Innis Library for multi-disciplinary problem-based learning; an undergraduate residence[10] along Main Street West expanding McMaster's main campus; and finally, a graduate residence in downtown Hamilton adjacent to the David Braley Health Sciences Centre that will also house a parking garage.

- Launch initiative in Engineering to anchor proof of credentials by using the Bitcoin encrypted blockchain platform, which decouples verification from the issuer, and allows anyone to instantly validate the authenticity of a certificate forever after.

- Continue to provide leadership opportunities for graduate students to develop/deliver innovative and creative programs for graduate students, postdocs and the broader community through the Student Proposals for Intellectual Community and Engages Scholarship (SPICES) program.

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[10] The undergraduate and graduate residence projects are public-private partnerships whereby a developer will build and finance the project and McMaster will manage, maintain, and operate the student life programming of the buildings just as it would any other residence. These projects are subject to affordability metrics and will be cancelled if the City amends its development charge exemption for McMaster projects as the projects would no longer be economically viable.

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- Train student facilitators through the McMaster Children and Youth University in the City program and piloting academic credit for student participation, which is a platform for McMaster students from all disciplines of study to acquire valuable experiential learning while empowering youth and their families to engage in interactive education.

- Continue to work with the City and community on needs matching strategic importance to the university. As well, further develop and grow relationships with existing partners within the Hamilton community and continue collaborative efforts to grow and enhance existing programs.

- Establish and strengthen relationships with a diversity of racialized communities/groups in the City, to enhance support/service.

- Partner with Hamilton Public Library, City of Hamilton and Office of Community Engagement on a program to enhance digital skills across the city.

- Continue the Socrates Project, which acts as a point of convergence for artists, scholars, and diverse communities as they engage in crucial conversations regarding pressing issues.

- Utilize social marketing and media tools to engage students, faculty and the wider community in campus energy conservation. Infuse sustainability initiatives into everyday operations and in doing so provide students with responsible leadership and guidance to help enhance their own environmental stewardship.

- Launch a new Human Resources (HR) website with improved HR communications and outreach. Further, improve processes emerging from an HR Digitization project.

- Develop a cyber security roadmap which will provide a plan for year over year activities related to improved practices and policies to help mitigate IT security related challenges

- Launch of University short stay suites designed to make year-round executive style accommodation available to the campus and conferences hosted by McMaster.

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9   ENVELOPE HIGHLIGHTS

9.1   ACTIVITY UNITS (FACULTIES)

Figure 7: Operating Fund 2019/20 Budget Activity Unit Allocations
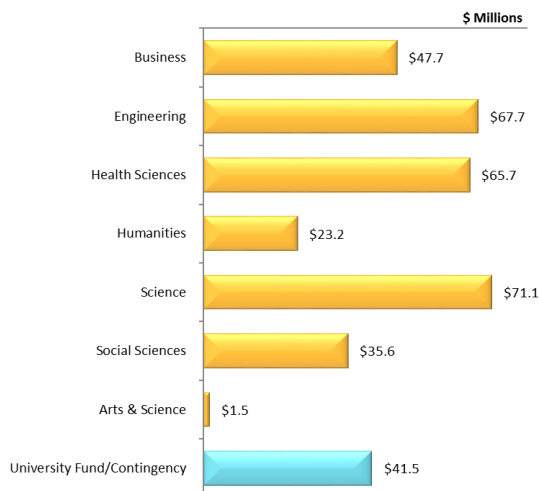
9.1.1   FACULTY OF HUMANITIES

The Faculty of Humanities has been active in building six new concurrent certificates that highlight targeted competencies, along with recognizing experiential learning and community engagement. Although the research plan will be revised to ensure alignment with the Brighter World Research Initiative, a strong focus will continue to be on the ethics of innovation, the potential of digital technologies, the power of storytelling, and the integration of language, the arts and science.

The Faculty of Humanities faces budget pressures given the reduction in tuition. The Faculty is playing a critical role in supporting the international student recruitment efforts across the university by providing the highly successful McMaster English Language Development program and is benefitting from doing so. Diversifying the recruitment into the program remains a high priority.

The Faculty is committed to meeting objectives in a financially sustainable manner, which includes teaching courses of broad appeal for students from all disciplines as well as, carefully managing human and physical resources.

9.1.2   FACULTY OF BUSINESS

The DeGroote School of Business (DSB) has made significant progress over the current year in enhancing the student experience, within and outside of, the classroom. This year saw the launch of the new Blended Learning, Part-Time Master of Business Administration (MBA) which attracted over double the expected students, the continued growth of the joint Integrated Business & Humanities Commerce program and the exciting achievement of securing a lead donor for the recently approved McLean Centre for Collaborative Discovery. This space will facilitate exciting curriculum changes to the Commerce program, that include interdisciplinary, problem-based learning.

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The domestic tuition cut for 2019 and the subsequent tuition freeze for 2020 has required deferral of several upgrades to space and new, long-term faculty additions pending better certainty around long-term revenue projections.

Despite revenue uncertainty, DSB remains confident in its ability to meet its financial commitments to the MacLean Centre and has increased its intake targets for specific graduate programs to mitigate some of the lost revenue. The coming twelve months will include focused fundraising efforts to attract maximum support for the McLean Centre and its programming. The Faculty will continue to monitor the business school landscape in search of new, cost recovery graduate program opportunities that align with its strategic position and goals.

9.1.3   FACULTY OF HEALTH SCIENCES

Although facing funding cutbacks, the Faculty of Health Sciences is looking to maintain and grow excellence in research, education and clinical service by exploring opportunities for expansion of its very popular BHSc program among potential U.S. students, sustaining its core research facilities and piloting a tighter administrative restructuring model. At the same time, the Faculty will work to strengthen the student experience, be innovative in teaching, increase access and equity, sustain and grow research excellence and continually drive economic development and community engagement.

Potential threats to financial stability of the Faculty of Health Sciences are of great concern. These include rising costs, Royal College mandated changes in postgraduate medical education, tightened university operating funds, tuition cuts, and cancellation of the MD expansion grants. There are also considerable financial pressures on academic hospital partners and uncertainty of funds from the Ministry of Health and Long-Term Care for program support and physician compensation. The threatened withdrawal of Gulf State resident revenues is particularly impactful on the Faculty's operations.

The Faculty of Health Sciences will be looking to offer its BHSc program to the U.S. market, diversifying international resident revenue, and piloting an administrative hub model to streamline its processes and reduce the number of employees involved in high volume routine transactions.

9.1.4   FACULTY OF ENGINEERING

Key strategic initiatives for the Faculty of Engineering include increasing the number of female and international students in Engineering, and embarking on a transformation of the undergraduate curriculum to ensure a higher quality learning experience for students. Engineering is continuing to increase the impact of research, including a planned expansion in the area of advanced manufacturing to contribute to this goal.

Engineering's budget challenges result mainly from the Province's mandated tuition reduction. Engineering is showing a structural deficit for 2019/20 and beyond. Appropriations will address the issue in the short term, and exploring potential cost reductions and revenue generating activities in the longer term.

Delaying some of the planned faculty recruitment, and infrastructure renewal investments may occur until financial stability is assured. The Faculty is strongly engaged in the overall University strategy to increase a diverse international student enrolment.

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9.1.5   FACULTY OF SOCIAL SCIENCES

The Faculty of Social Science is heavily engaged in improving the student experience, with initiatives that support first year students in a successful transition from high school, and in teaching innovation with new interdisciplinary courses that encompass community engaged research, and minors in social innovation. Access and equity continues to be a priority and this year will see the launch of a new four institution collaboration offering an Indigenous Pathways transfer program. Research Excellence also remains at the forefront which improved grant application success and quality.

After a period of decline, the attractiveness of Social Science programs has stabilized and seems to be on the rise. However, challenges related to tuition cuts and uncertainty regarding future funding, somewhat inhibit the ability to make necessary investments in critical new areas of activity (e.g., communications, recruitment, IT support) at a time of limited fiscal resources.

The Faculty is taking action on both revenues and expenditures, by continuing to invest in expanding and diversifying international enrolment, while at the same time streamlining processes to better use available resources in advancing the core educational and research mission.

9.1.6   FACULTY OF SCIENCE

The Faculty of Science has continued with strategic investments in faculty, staff and infrastructure that will have a positive impact on the student experience, teaching and learning, research excellence, innovation, economic development and community engagement, with a lens to increase diversity in student, staff and faculty complements.

This budget submission is the next phase in renewal and reinvigoration in the Faculty of Science, which began in the prior year. It is a balance of conservatism, due to the constraints of, and uncertainty in, the provincial funding models, with the need to advance major personnel and infrastructure initiatives.

The Faculty is ensuring streamlined processes and using data analytics to address top priorities that directly link to the SMA, to develop a new Faculty of Science strategic plan for the academic, research and community engagement missions which will guide future strategic investment.

9.1.7   ARTS & SCIENCE PROGRAM

The Arts and Science program continues to focus on achieving a robust, stable, and sustainable faculty complement. The Program does this through collaboration with other units, which supports enhanced experiential learning and student research opportunities and initiatives such as the McMaster Discovery Program. The Program is targeting a goal of 25% out-of-province and international admissions, with an aim to enhance the Arts & Science Program's community, national, and international profile. The addition of a Communications and Outreach Coordinator is intended to enhance the Program's profile and visibility, alumni engagement, and out-of-province and international student recruitment.

9.1.8   UNIVERSITY FUND

The University Fund has the goal of supporting excellence, innovation and renewal in all areas of the university. By design, the projects supported in this way have been short-term and allocated for specific purposes with the intention that successful innovations will be funded permanently by

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different means, thus freeing the University Fund for new initiatives of innovation and excellence. These funds enable greater flexibility in achieving the academic mission of the University and support discovery and learning opportunities.

The Office of the Provost is responsible for developing appropriate mechanisms to control and use the University Fund as a strategic tool for the University. This fund is used to support unforeseen or unfunded priorities and to seed new strategic initiatives. A significant portion of the Fund is now being used to support ongoing commitments and capital infrastructure, thus limiting the Fund's capacity for supporting worthwhile new initiatives.

The Provost is actively supportive of *Forward with Integrity (FWI)*, and the *Brighter World Research Initiatives (BWRI)* and is providing funding from the University Fund to enable innovative projects that support the University's mission. In future, the focus of the Fund will hopefully shift to greater support for research and emerging initiatives.

9.2   SUPPORT UNITS

Figure 8: Operating Fund 2019/20 Budget Support Unit Allocations
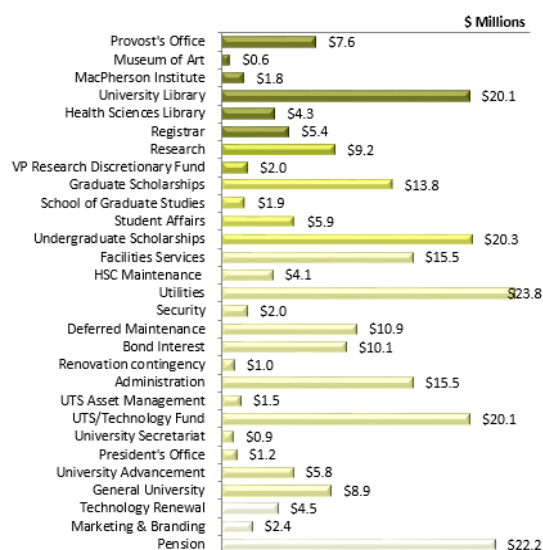
9.2.1   STUDENT AFFAIRS

Student Affairs has moved from shoring up its financial foundation, to focusing on initiatives that will drive internationalization, and toward innovations that will support inclusivity and well-being. These priorities are interrelated. Well-being is the foundation of student success and is even more critical for students who are here from abroad. Institutions that welcome and include students from diverse backgrounds, and that encourage domestic students to gain experience abroad, will enable innovation and nurture global citizens.

These priorities are funded on soft money and could be seen by some as peripheral to the core mandate of the institution. Rather than view these priorities through that lens, an alternative is to take

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a holistic view that is core to student development and learning - one that values supporting well-being, creating global citizens, and nurturing an innovative mindset.

In the short term our entrepreneurship program, the Forge, requires funding to sustain operations. Government and donor strategies will continue to be pursued to develop a more sustainable model. An increase to student fees will be pursued to help mitigate some of the costs related to mental health support and career support (currently funded through MTCU Career Ready Fund (CRF)).

9.2.1   LIBRARIES

The University Library will move aggressively on a variety of fronts including enhancements to McMaster Experts (for showcasing faculty research), digitization of unique content, research data management, and classroom technology renewal. The organization will explore new models for better supporting student's first year experience, as well as, delivering on the University's community engagement mandate.

The University Libraries continue to face the ongoing problem of journal cost inflation. Our researchers need access to elite journals; the vast majority of our serial subscriptions are made consortially as part of binding, multi-year contracts in US dollars. Cost for journal subscriptions are linked to McMaster's research intensity and thus McMaster pays higher prices than some of our counterparts. The Health Science Library (HSL) allocation only covers a portion of planned spending.

The Libraries have implemented several cost-savings measures including complement review, trimming of low impact, low use journal subscriptions, and implementation of centrally mitigating exchange rate impacts.

9.2.2   OFFICE OF THE REGISTRAR (RO)

The Registrar's Office supports students and the teaching mission of the university. The office is committed to providing timely, relevant, and efficient service to students, and to support Faculties and other administrative functions at the university to ensure that it is aligned with, and contributing to the objectives of the Strategic Mandate Agreement. Projects of note in the coming year include the Campus Solutions 9.2 upgrade, and the service centre transformation, which includes implementing new online chat software and the Databee exam administration system. The office will continue supporting international student recruitment goals and will build on the Pathways ONTransfer initiative which will foster collaboration with colleges.

The most significant budget pressure facing the Office of the Registrar continues to be sufficient resources to support, maintain, enhance and upgrade Mosaic, and increased demands to support expansion in the student population.

The RO continues to review how to provide the best service in the most effective way and to look for cost-saving measures. Managers also work collaboratively to support each other during peak activity periods. The RO is working toward building a talented, flexible and efficient work group that responds quickly and effectively in serving the University mission.

9.2.3   SCHOOL OF GRADUATE STUDIES

The School of Graduate Studies works in concert with the Faculties to achieve their strategic priorities through assisting in the development of new graduate programs, ensuring that such proposals are

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prepared according to the latest Council and Ministry guidelines which address key Ministry requirements and also clearly articulate the alignment between the proposal and the University's priorities.

The University priority for graduate enrolment growth and new program development will put significant demands on the graduate scholarship budget. Support for graduate scholarships is fixed, requiring the University to find new revenue sources to support graduate scholarship.

The primary focus of the next academic year will be communication, documentation and training on all graduate-facing system sustainment activities, in addition to ensuring the optimal distribution of graduate scholarship funds. In addition, the Graduate Student Life & Research Training area will be reviewed with an overall objective to enhance service levels to the stakeholders.

9.2.4   PAUL R. MACPHERSON INSTITUTE FOR LEADERSHIP, INNOVATION AND EXCELLENCE IN TEACHING

The initiatives undertaken by MacPherson Institute are directly tied to the directions of the Strategic Mandate Agreement. Specifically, recent initiatives like the piloting of an equity-stream in the Student Partners Program and the refinement of international teaching assistant supports, are tied to the Access and Equity priority. The commitment to the Institutional Quality Assurance Process, particularly in curriculum mapping, self-study preparation and articulation of program learning outcomes, aligns with directions in Student Experience and Innovation in Teaching and Learning as does the growing work in digital pedagogy. Finally, robust support of research in teaching and learning, and the publication of the International Journal for Students as Partners, contributes to the Research Excellence and Impact area of the SMA.

Current budget challenges reflect uncertainty with respect to the vendor costs (including license fees) for two centrally-supported educational technologies. Moreover, growing demand for some services, and the need to respond to recommendations from the recently conducted Teaching and Learning Review, will require prioritization of services, while also considering new funding sources, where applicable, to meet these needs.

As the external review of Teaching and Learning at McMaster concludes, opportunities to refine the mandate and clarify scope of services exist. The coming year will see a prioritization process for existing services and supports, as well as a comprehensive response to the needs of the campus community with respect to teaching and learning.

9.2.5   RESEARCH ENVELOPE

The Vice-President Research will continue to review the organization and needs of Research Institutes and Centres, the Nuclear Reactor, research operations, and support for research from the Office of the Vice-President Research (VPR) Discretionary Fund. Critical to each of these areas are the priorities outlined in McMaster's new Strategic Research Plan (SRP), which challenges us to continue to make a difference—in the competitiveness of our researchers, in the quality of our teaching, and in the impact we have on the world around us. The SRP outlines a number of enabling strategies, highlighting next steps to move our research excellence forward, particularly as they relate to the SMA priorities of "Research Excellence and Impact" and "Innovation, Economic Development and Community Engagement". Given the breadth of its impact, research excellence also enhances the Student Experience, supports Innovation in Teaching and Learning Excellence and both supports and

furthers the institutional priority of Access and Equity, particularly as they relate to opportunities to engage and lead in research. We look forward to participating in the opportunities provided to the research community through the Brighter World Research Initiative which will further the goals outlined in the SRP. In addition, key to success of the SRP is McMaster's Nuclear Reactor. As Canada's sole major neutron source, McMaster Nuclear Reactor makes McMaster the only university in Canada capable of hosting several types of research; its capabilities have been enhanced by the completion of new facilities enabled by the commitment of McMaster researchers and by provision of support to obtain and operationalize research funds.

The VPR recently led the development of "*Research for a Brighter World - Strategic Research Plan* (SRP) 2018-2023". Ongoing consultation involving the Faculty Deans, Associate Deans Research, other members of the research community and members of the Brighter World Research Initiative team will define how initiatives in the SRP can best be implemented. Expenses to support these new initiatives have not been included in the budget at this time.

In building new initiatives we must also turn our attention to existing support for research. Support provided through the university allocation is supplemented with income earned from royalties.

9.2.6 UNIVERSITY TECHNOLOGY SERVICES (UTS)

The Chief Technology Officer will be focusing on the implementation of the new McMaster IT Strategic Plan beginning in 2019 and the budget reflects on a number of the proposed and anticipated initiatives that will result from the Plan. Changes related to service, systems, and delivery are included. The focus is on creating a stable and secure environment while also implementing desired technologies and capabilities that can enhance the teaching, learning and research activities of the institution and improve the student experience.

There are always finite dollars balanced against infinite IT needs and enhancements. The lack of investment in IT over a number of years is now resulting in a large backlog of desired solutions and necessary spending related to infrastructure such as wireless networks.

University Technology Services will continue to enhance its focus on people, processes and technology across all current services and in line with strategic future services. Enhancing employee engagement and competency levels, reducing deferred maintenance risks, enhancing IT Security capabilities, developing strong partnership and collaboration opportunities with partners across campus, evaluating and 'rationalizing' IT services, and the ongoing support of projects and priorities highlighted as part of the McMaster IT Strategic Plan within the IT Governance framework are all key areas of focus.

9.2.7 ADMINISTRATION AND FACILITY SERVICES

The Administration Division budget itself has been constrained for the better part of a decade as resourcing is concentrated within the Academy. The Division is no longer able to fully self-fund investments and has made several requests of Budget Committee for the budget and planning years.

On a broader note, benchmarking data, "UniForum", suggests that when one considers end-to-end administrative processes that the university has significant efficiency and effectiveness opportunities. This data suggests that the University needs to urgently review how administrative work is undertaken across campus in order to help fund desired investments, and this review work has begun throughout the University.

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9.2.8   UNIVERSITY ADVANCEMENT

University Advancement (UA) plays an important role in supporting the SMA priorities by delivering creative and leading advancement programs. University Advancement's 2015-2020 business plan was built on the priorities outlined within McMaster's Strategic Mandate Agreement and Forward with Integrity, and was updated in 2018 to reflect changes in the landscape and respond to opportunities. The UA business plan is designed to support these objectives with a strong emphasis on internationalization, Indigenous programs and research, supporting a distinctive student experience and the needs of the research enterprise. The University priorities all require resources, strong relationships with key stakeholders, including government, funders, friends and alumni, and a robust university reputation. By working collaboratively, each area within the University Advancement team delivers on these commitments so McMaster is well-positioned to maximize its strengths and priorities

University Advancement is using strategic savings to seed staff positions for the Brighter World Research Initiative, however will be partnering with the Vice-President Research Office for a funding ask in support of this important university priority with a goal of significantly growing revenue.

We continue to focus on our key success factors for building McMaster's relationships, reputation and resource. Our work in support of the University enables other areas to be successful in achieving their respective objectives that directly correlate with the tenets of the SMA. UA will continue to play a lead role in the University's marketing and branding exercise as McMaster recognizes that the strength of its brand is integral to the achievements of its institutional objectives in the increasingly competitive post-secondary environment. Public Affairs (formerly Government Relations) continues to be a priority at both the provincial and federal levels as we work to influence policy and secure investment. UA is playing a lead role, in partnership with the Vice-President Research Office, in the planning and implementation of the Brighter World Research Initiative to bring more revenue into the University's research enterprise.

9.2.9   UNIVERSITY BRAND

The marketing initiative has taken great strides over the past year as McMaster has embraced a new purpose statement: "advancing human and societal health and well-being" and has begun the rollout of its new Brighter World brand. Differentiating McMaster in an increasingly competitive national and international environment underpins the marketing strategy.

The full scope of work that will be required over time to support the University's goals requires a base of budget support that is currently not secured beyond the scope of the current plan. While the current focus is on priority projects in the plan, it is clear that areas across the University will benefit from increased assistance in developing modern and comprehensive marketing approaches so they can compete for students, faculty and help influence government and attract other funding sources

The marketing initiative will continue to support the priorities established by the Steering Committee to achieve both short and long-term objectives in delivering an efficient, effective and innovative marketing program for McMaster. Time will be spent with the Steering Committee over the next year to create alignment with the goals it wants to achieve on an ongoing basis and the funding required to deliver the strategy to the University.

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10.1   OPERATING FUND

Table 5: Operating Fund Summary

($ thousands)

	2018/19 Budget	2018/19 Projection	2018/19 Variance		2019/20 Budget	2020/21 Plan	2021/22 Plan
Revenues							
Provincial grants	235,368	235,016	(352)	-0.1%	235,868	235,544	235,360
Tuition	334,153	327,272	(6,881)	-2.1%	326,962	351,173	376,611
Research overhead income	25,904	28,933	3,029	11.7%	27,470	27,182	27,181
Investment income	12,901	12,901	(0)	0.0%	12,634	9,467	9,467
Other income	93,990	104,461	10,471	11.1%	106,008	103,681	101,452
Total revenues	**702,316**	**708,583**	**6,267**	**0.9%**	**708,942**	**727,047**	**750,071**
Expenses							
Salaries, wages and benefits	476,153	473,605	2,547	0.5%	496,875	511,905	525,618
Utilities and maintenance	38,749	35,469	3,280	8.5%	38,638	41,770	42,524
Equipment and renovations	50,392	58,286	(7,893)	-15.7%	52,030	50,048	53,459
Scholarships, bursaries and work study	37,252	39,303	(2,051)	-5.5%	38,739	37,671	37,770
Library acquisitions	12,829	12,650	179	1.4%	13,249	13,714	14,240
Debt and financing charges	18,423	22,623	(4,200)	-22.8%	18,220	21,405	21,405
All other expenses	64,773	64,189	584	0.9%	81,096	73,813	73,991
Total expenses	**698,571**	**706,125**	**(7,553)**	**-1.1%**	**738,848**	**750,326**	**769,007**
Excess of revenues over expenses	**3,745**	**2,458**	**(1,287)**	**-34.4%**	**(29,906)**	**(23,279)**	**(18,936)**
Fund balance, beginning of year	110,679	142,698	32,019	28.9%	145,156	115,250	91,970
Fund balance, end of year	**114,423**	**145,156**	**30,732**	**26.9%**	**115,250**	**91,970**	**73,034**

The Operating Fund is projected to result in annual deficits beginning in 2019/20 on an aggregate one-time (non-structural) basis as a reflection of both the domestic tuition rate cut and freeze, cancellation of the expansion grants, and use of appropriations to support strategic initiatives. Details of the variances between the 2018/19 budget and projection are available in Appendix 1. The revenue trend table that follows in the next section is not inflation adjusted, meaning where revenues remain flat or fixed over time the actual purchasing power of those funds is decreasing by approximately 2% per year (average of Ontario consumer price index inflation).

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10.1.1   REVENUE

Figure 9: Operating Fund Revenue Trend
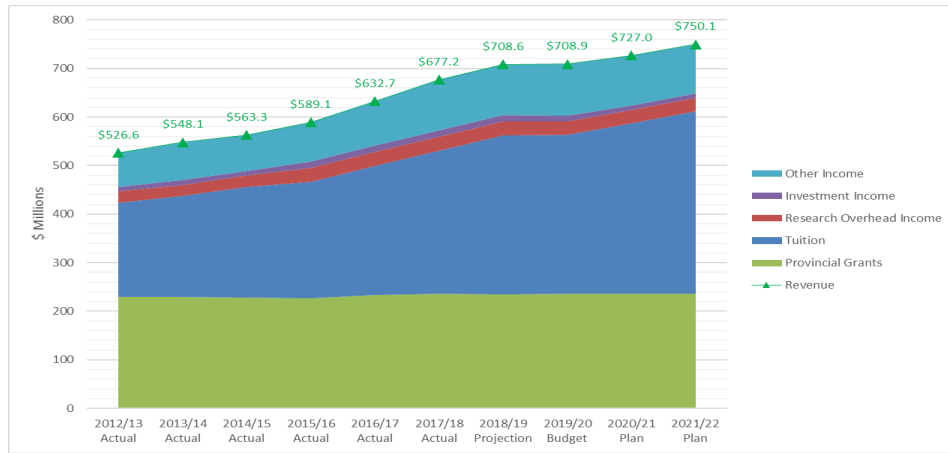
Figure 10:   Operating Fund 2019/20 Budget Revenue by Type
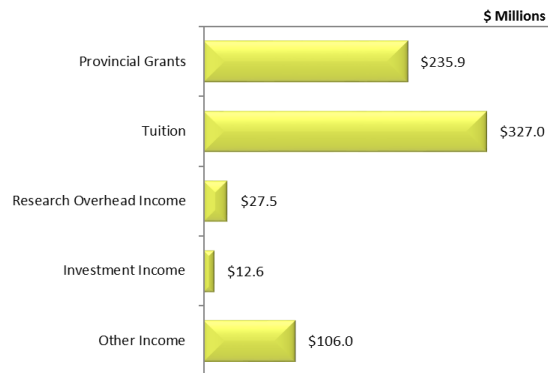
Figure 11:   **Operating Fund Budget Revenue Trend by Type**

	2012/13 Actual	2013/14 Actual	2014/15 Actual	2015/16 Actual	2016/17 Actual	2017/18 Actual	2018/19 Projection	2019/20 Budget	2020/21 Plan	2021/22 Plan
Provincial Grants	$229.5	$229.6	$228.4	$226.9	$233.8	$235.9	$235.0	$235.9	$235.5	$235.4
Growth		0%	-1%	-1%	3%	1%	0%	0%	0%	0%
Tuition	$194.0	$208.2	$227.6	$239.6	$265.6	$294.3	$327.3	$327.0	$351.2	$376.6
Growth		7%	9%	5%	11%	11%	11%	0%	7%	7%
Research Overhead Income	$22.7	$22.8	$23.0	$29.1	$28.6	$29.7	$28.9	$27.5	$27.2	$27.2
Growth		0%	1%	26%	-2%	4%	-3%	-5%	-1%	0%
Investment Income	$9.5	$9.5	$9.4	$12.9	$13.4	$13.2	$12.9	$12.6	$9.5	$9.5
Growth		0%	0%	37%	4%	-1%	-2%	-2%	-25%	0%
Other Income	$71.0	$78.1	$74.8	$80.6	$91.3	$104.0	$104.5	$106.0	$103.7	$101.5
Growth		10%	-4%	8%	13%	14%	0%	1%	-2%	-2%

10.1.1.1   PROVINCIAL GRANTS

With enrolment of domestic students projected to stay within the provincial corridor, both the Core Operating Grant and Performance/Student Success Grant are expected to remain flat over the planning horizon. Graduate enrolment growth will result in an increase in the Graduate Expansion Grant, partially offset by the International Student Reduction ($750 tax per international student enrolled) as international enrolment increases. The next phase of the Strategic Mandate Agreement is in 2020/21 is expected to increase outcomes-based funding from under 10% up to 60% by 2024/25. The increase to at-risk funding will result in a corresponding decline in the Core Operating Grant by adjusting weighted grant units downward.

10.1.1.2   TUITION

Based on the enrolment targets outlined previously and the revised tuition framework, 2019/20 tuition income is projected to decrease by $3.3 million (-1%) from the 2018/19 projection. This decrease is a combination of the domestic tuition rate cut of 10% partially offset by the estimated international enrolment growth and associated international tuition fees. The Ministry has stipulated a zero percent increase for 2020/21 but has not outlined a tuition framework (rate increase caps) for 2021/22 or beyond. For planning purposes a continuation of the zero percent framework has been assumed.

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10.1.1.3   RESEARCH OVERHEAD INCOME

Figure 12:   **Operating Fund Research Overhead Income Trend**
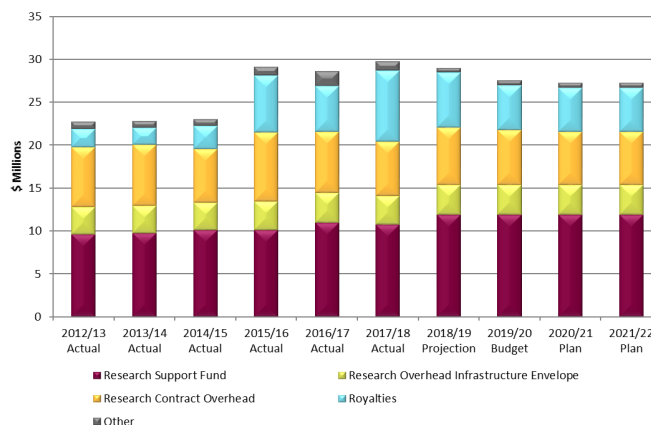
Research overhead income has been conservatively budgeted. All research overhead income is intended to fund a portion of central and departmental administrative and infrastructure costs related to conducting research.

The federal Research Support Fund and provincial Research Overhead Infrastructure Envelope grants are calculated based on the amount of Tri-Council research funding the University receives. As a result of the incremental investment in Tri-Council research in the federal *Budget 2018,* additional funding to McMaster known as the Incremental Projects Grant (IPG) within the Research Support Fund has been built into projections based on the 2018/19 amount received. These grants are distributed to activity units through the budget model.

Overhead is levied on research grants and contracts from the private sector and other agencies where allowed. It is normally calculated as a percentage of direct research costs, with the objective of recovering the full amount of indirect costs. Revenue fluctuates with the funding received, and has been budgeted at the average historical amount. The income is credited directly to activity units, where it may be further distributed to departments or reinvested in research.

Royalty income is payment for commercial use of intellectual property owned by McMaster as a result of research discoveries.   Similar to research contract overhead, it will fluctuate depending on usage and has been budgeted at the average amount normally received. This income is also credited directly to activity units, with a share going to inventors.

Other research overhead income may be earned on funding from Centres of Excellence, Canada Research Chairs, and Early Researcher Awards.

10.1.1.4   INVESTMENT INCOME

The Operating Fund receives a share of the investment pool interest revenue derived from two primary sources. First, the H. Lyman Hooker Endowment Fund, which is a gift directed to "provide a steady annual flow of funds to support programs that will enrich the academic achievements of the University and to provide a suitable memorial to Dr. Hooker". Second, the employer portion of the

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pension payout in 2003. Annual interest from these two funds at the smoothed expected long-term return rate approximates $9 million per year.

The annual Operating Fund investment income allocation is fixed at $9 million regardless of actual positive or negative annual investment returns. This approach ensures a stable level of funds to support ongoing operating expenditures. During the period 2015/16 to 2019/20, the investment reserve provides an additional $3 million per year. The additional income has helped defray the additional cost of external debt taken out in 2015 for the Peter George Centre for Living and Learning project. The additional interest income allocation to the Operating Fund ends in 2019/20 when the building project becomes available for use.

10.1.1.5   OTHER INCOME

Other income is primarily earned directly by budget envelopes, including:

- Ministry of Health and Long-Term Care grants
- Post-graduate medical training
- Tuition from non-Ministry funded programs
- Nuclear Reactor sales
- Ancillary sales contributions to the Operating Fund (reflecting 4.5% on sales)
- Contributions to the Athletics and Recreation facility expansion
- Registration and service fees
- Recovery of utility costs from partners

10.1.2   EXPENSE

Figure 13:   Operating Fund Expense Trend

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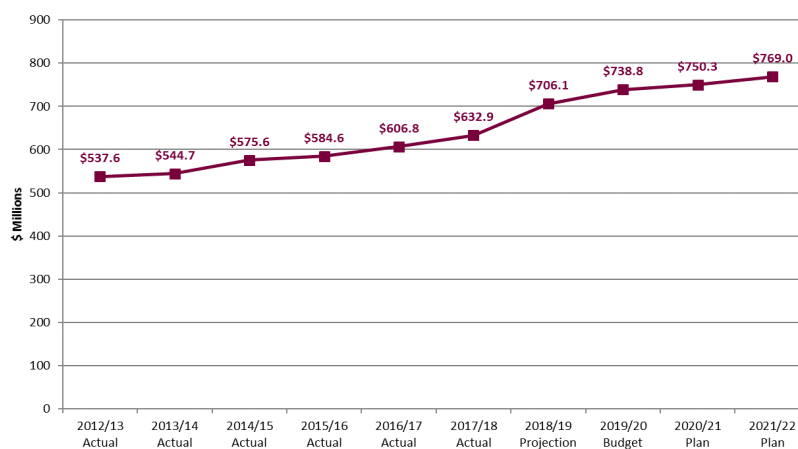
Figure 14:   **Operating Fund 2019/20 Budget Expense by Type**

$ Millions

Type	Value
Academic Salaries	$183.4, 24.8%
Teaching Assistants	$21.9, 3.0%
Non-academic Salaries	$166.4, 22.5%
Benefits	$125.2, 17.0%
Total salaries, wages and benefits	$496.9, 67.2%
Non-salary expenses	$242.0, 32.8%
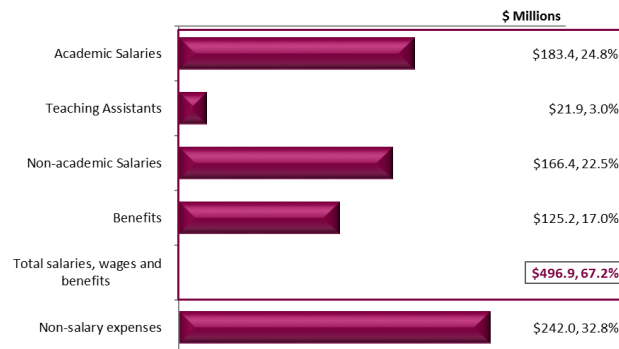
Figure 15:   **Operating Fund 2019/20 Budget Non-salary Expenses by Type**

$ Millions

Type	Value
Utilities and maintenance	$38.6, 5.2%
Equipment and renovations	$52.0, 7.0%
Scholarships, bursaries and work study	$38.7, 5.2%
Library acquisitions	$13.2, 1.8%
Debt and financing charges	$18.2, 2.5%
All other expenses	$81.1, 11.0%
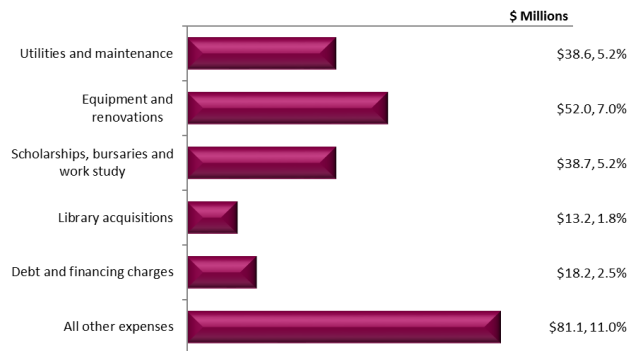
10.1.2.1   SALARIES, WAGES AND BENEFITS

At close to 70% of all expenditures, salaries, wages and benefits are the largest component of the operating budget. As a research-intensive, student-centered university, the quality of the faculty driving the education and research mission is a key success factor. Highly skilled administrative and support staff are required to facilitate academic work and sustain an exceptional student experience.

In order to maintain the quality of education, accommodate new programs and additional enrolment, and prepare for upcoming retirements, there is an increasing emphasis on faculty renewal. Teaching by tenured, tenure-track or teaching-track faculty will be maintained while addressing the growth in student-to-faculty ratios. In addition, there is a focus on staff processes underway, drawing on benchmarking information, examining further opportunities to streamline business processes in order to maintain a reasonable complement of support staff.

Through labour negotiations, McMaster has pursued strategies targeted at optimizing the rate of compensation increases to control costs while being mindful of the need to be competitive in the market to ensure effective retention and recruitment. The *Fair Workplaces, Better Jobs Act, 2017* has had a significant impact on wage inflation. The budget reflects increases to minimum wage, as

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well as the requirement for equal pay for all employees doing substantially the same work regardless of differences in employment status.

The benefit rates used for budgeting purposes collect smoothed funding into a benefit reserve to settle the variable cash outflow schedules produced by the plan actuaries. The payment schedules are updated routinely and compared to benefit rate collections. McMaster recently completed an early filing election for the Salaried Plans adopting the new *Pension Act* provisions put in place in 2018. The updated filing provides payment certainty under the rules until 2021 and eliminates the funding requirement for solvency while introducing a new funding requirement for the provision for adverse deviation. Due to these changes the budget has been adjusted to reflect a new lower smoothed benefit rate for employer contributions.

The salary pension plan charge-out rate approved by the Budget Committee at the beginning of the budget process were as follows:

- The employer contribution rate built into the benefit charges for salaried faculty and staff remain at 175% of employee contributions for all funds including ancillary

- 2020/21 and 2021/22 high-level planning assumes 175% for the departmental rate, and 175% for the ancillary rate.

However, due to the new valuation results the revised rate approved by Budget Committee is:

- The employer contribution rate built into the benefit charges for salaried faculty and staff is 150% of employee contributions for all funds including ancillary for 2019/20, 2020/21, and 2021/22.

Taking these factors into account, the increase in total compensation costs approximates just under 5% over the planning horizon.

10.1.2.2   UTILITIES AND MAINTENANCE

Utilities and maintenance represent 5.2% of the operating budget, including annual contributions of $10.9 million to deferred maintenance. Total costs will increase slightly in 2020/21 as the Peter George Centre for Living and Learning opens in the fall.

Costs for utilities can be volatile, subject to market rates, weather fluctuation, unplanned maintenance failures, and campus behavior. The requirement for McMaster to act as backup for the hospital can potentially lead to increased costs due to utility requirements at high-cost time periods. In addition, critical components of the physical campus infrastructure, such as the central electrical station, are beyond end of life. Replacement costs are part of the deferred maintenance plan.

The largest component of utility costs is electricity. Rates have been conservatively budgeted at about $0.10 per kilowatt hour for all three years, but have the potential to be lower depending on achievement of strategic utility plans. A large favourable variance experienced in 2017/18 was due to lower electricity pricing, lower consumption, and rebates received, however there is no guarantee that this occurrence will be repeated.

McMaster tracks the Ontario Association of Physical Plant Administrators (OAPPA) numbers for benchmarking purposes. The most recent OAPPA benchmark was $3.85 per square foot, which was

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9.6% higher than McMaster's cost of $3.21 per square foot. Due to the energy-intensive nature of health research, the costs for the McMaster University Medical Centre and the Michael DeGroote Centre for Learning and Discovery have a significantly higher cost index. Excluding these two facilities, the energy cost index for the McMaster campus was $2.62 per square foot.

10.1.2.3   EQUIPMENT AND RENOVATIONS

Physical and technical infrastructure resources are essential to achieving the strategic plan and delivering an optimal student experience. Space is increasingly a challenge as enrolment increases and additional capacity for research is required. In addition, equipment and software renewal is essential for leading-edge education and research. Infrastructure physical and technical is a key priority to facilitate student registration, control administrative costs, and minimize risk of infrastructure failure or security issues.

The budget includes transfers to capital at approximately $27 million per year for new and upgraded physical facilities, including new community spaces. A key focus includes classroom renewal whereby investments are directed based on areas of greatest need as identified by the University community. Other major items include:

- Upgrades to lab equipment and classroom audio-visual equipment

- Systems to improve the student experience, including Visual Schedule Builder, document management, and customer relationship management

- Expansion of the wireless network

- Annual investment towards the deferred maintenance

- Improved security through maintenance and enhancement of campus emergency assistance phones

10.1.2.4   SCHOLARSHIPS, BURSARIES AND WORK STUDY

Scholarships support the University's recruitment and admission goals, recognize student achievement, and aid in retention. Favourable positioning of McMaster's admission and scholarship offers is imperative in recruiting the best students. Depending on need, additional support may be provided to students in high-cost programs through the provincially mandated Student Access Guarantee (SAG).

In support of the provincial government, McMaster issues a net bill to students, which details the costs of education less Ontario Student Access Program (OSAP) and other student aid reductions. The net bill builds off the net estimate initiative, which provided new students a net cost estimate before accepting an offer of admission. Together these initiatives aim to increase transparency and help students make decisions that are more informed. Although McMaster's entrance awards on their own are not competitive when compared to other Ontario universities, this initiative will allow the total aid and award package from multiple sources of funding to be managed and remain attractive students.

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Enrolment growth has increased the demand for need-based aid over recent years. The number of student requests for work program opportunities and bursary assistance continues to rise across the University. To ensure that sufficient funding is available to meet SAG obligations, the funding provided through the budget model varies with actual amounts required. The budget incorporates estimated expenses given the enrolment assumptions and has provided additional incremental funding for 2019/20.

10.1.2.5   LIBRARY ACQUISITIONS

As the number of publishers of academic journals decreases, their ability to raise prices increases. The cost of purchasing the collection of core titles climbs by approximately $0.5 million annually.

In order to achieve the University's mission, access to the journals with the highest profile and impact must be maintained. Most serial subscriptions are purchased through the Canadian Research Knowledge Network (CRKN) consortium as part of a binding, multi-year contract for large publisher journal packages. While reducing flexibility, purchasing through a consortium helps to mitigate the impact of journal inflation. Controlling costs by purchasing subscriptions individually is not an option.

McMaster's high research intensity works to increase journal costs since the CRKN subscription fees are linked to a University's research intensity factor. McMaster has higher pricing than some peers, unrelated to student numbers or usage, but because the University pulls in more research dollars.

Several actions have been taken to try to contain costs. An analysis of cost per use data will be done to suggest packages for possible cancellation. A comparison of holdings against those of partners will determine if there is any overlap. Results from CRKN initiatives will be monitored to ensure alternatives are explored.

The budget reflects the combined impacts of inflation and expected exchange rates. In order to reduce pressure on the library envelopes, the US exchange rate has been internally fixed at the long-term rate, with any gain or loss covered centrally.

10.1.2.6   DEBT AND FINANCING CHARGES

In 2002 McMaster issued $120 million in debentures. Expense of $7.4 million represents the interest-only payment on the bond with a coupon rate of 6.15%. The principal will be repaid in 50 years as a bullet payment. An internal reserve or sinking fund of $6.1 million was established in 2002. The sinking fund is invested in the investment pool and monitored annually is expected to be sufficient to repay the principal in 2052. The annual balance in this internally restricted reserve is disclosed in the notes to the audited financial statements.

In 2015 McMaster issued an additional $120 million in 50-year private placement (public style) debentures. The coupon rate of 4.105% ($4.9 million) is offset by short-term investments with an estimated yield of 1.6%, which will be available on a declining basis until the funding is fully utilized for capital projects. Payments on internal loans for additional capital projects are included in the budgeted expense (see Section 12 Overall Borrowing and Debt Position). The principal will be repaid using a separate internal reserve or sinking fund approach similar to the one described above.

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10.1.2.7   ALL OTHER EXPENSES

This line represents 11% of operating costs and includes a broad range of supplies and other expenses not categorized elsewhere. The expense is net of recoveries including transfers from trust funds, contributions of ancillaries to occupancy costs, and internal services. It includes a provision for expected strategic initiatives facilitated by the University Fund.

10.1.3   OPERATING FUND APPROPRIATIONS

With the budgeted deficit of $29.9 million, Operating Fund appropriations are expected to reduce to $115.3 million, or 16.3% of operating revenue, by the end of 2019/20. According to the budget policy, envelope managers may carry forward unspent balances to future years (see Appendix 3 Operating Fund Unit Level Tables). These balances assume an increasing importance as costs increase faster than allocations. Although each envelope is required to present a balanced budget, an appropriation balance may be utilized to fund strategic initiatives including academic, research and capital; as well as initiatives that are one-time projects or cause temporary structural deficits until greater efficiencies are achieved. The appropriation balance is expected to fall to of 9.7% of operating revenues during the planning horizon.

10.1.4   ONE-TIME EXPENDITURES

Table 6: Operating Fund Ongoing and One-time Summary

($ thousands)

	2018/19 Budget	2018/19 Projection	2018/19 Variance		2019/20 Budget	2020/21 Plan	2021/22 Plan
Ongoing:							
Allocated income	599,516	593,385	(6,131)	-1.0%	594,050	617,984	643,593
Other income	99,120	109,997	10,877	11.0%	110,707	108,641	106,055
Total revenues	698,636	703,382	4,746	0.7%	704,757	726,625	749,648
Expenses	665,764	663,012	2,753	0.4%	694,264	708,853	723,769
Excess of revenues over expenses	32,872	40,370	7,498	22.8%	10,493	17,772	25,879
% of revenue	4.7%	5.7%			1.5%	2.4%	3.5%
One-time:							
Allocated income	3,434	3,434	(0)	0.0%	3,167	-	-
Other income	246	1,767	1,521	618.3%	1,018	422	422
Total revenues	3,680	5,201	1,521	41.3%	4,185	422	422
Expenses	32,807	43,113	(10,306)	-31.4%	44,584	41,473	45,237
Excess of revenues over expenses	(29,127)	(37,912)	(8,785)	30.2%	(40,399)	(41,051)	(44,815)
Excess of revenues over expenses	**3,745**	**2,458**	**(1,287)**	**-34.4%**	**(29,906)**	**(23,279)**	**(18,936)**
Fund balance, beginning of year	110,679	142,698	32,019	28.9%	145,156	115,250	91,970
Fund balance, end of year	**114,423**	**145,156**	**30,732**	**26.9%**	**115,250**	**91,970**	**73,034**

The budget shows a structural surplus across the planning horizon. Increases in ongoing expenses are mainly either strategic investments like faculty renewal or unavoidable costs. One-time costs include:

- $18.4 million renovation and expansion of facilities

- $15.5 million for undetermined strategic investments from the University Fund likely to include:

  o   Implementation of Internationalization strategy

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- o   IT Commitments

- o   Investment in rejuvenating core Research Platforms and commercialization

- o   Incentives and impact minimization of internal and external policy changes

- o   New opportunities for capital renewal and expansion

- $2.2 million investment in research

- $2.2 million wireless network expansion and $1.1 million software

- $1 million for entrance awards

10.1.5   OPERATING FUND BUDGET CONCLUSIONS

The 2019/20 Operating Fund is structurally balanced, with a deficit of $29.9 million after net one-time expenditures of $40.4 million, driven by the revised tuition framework of a 10% cut to domestic tuition fees, reduced Ministry support in recent years, increased international enrolment and increased competition for limited research dollars. The Operating Fund may need to support some of the shortfall related to existing contractual commitments for capital projects underway, which were meant to be funded by the MD or Graduate Expansion Grant recently cancelled by MTCU.

Despite $22.3 million less domestic tuition revenue and cancellation of $52.9 million in capital funds, the Operating Fund remains structurally balanced due mainly to increased international participation and slow but targeted faculty renewal. Significant funding pressures continue associated with wage inflation, elimination of mandatory retirement, technology/capital infrastructure and sustainability, and increasing needs for student services and support all limit the level of investments toward priorities. Faculties and support units will draw upon departmental appropriations or reserves to ensure key priorities can occur in the budget and planning years ahead. Further, many areas across the University are undertaking reviews or drawing on benchmarking information to focus on further process changes supporting transactional or non-strategic work attempting to maximize funds available to progress strategic initiatives.

Amidst ongoing pressures this budget does include plans for seed funding new academic initiatives and projects from the University Fund and research portfolio, and other Faculty investments in research excellence including creating new research centres and appointing new research chairs. Further, investments toward developing new collaborative spaces all contribute greatly needed capacity toward active learning principles and other technologically-enabled pedagogical approaches to further enrich McMaster's experiential learning opportunities. In addition, an emphasis on career pathways associated with programs will be made to better connect students' educational choices with career objectives, including new program launches and redesigned curricula. Marketing initiatives will be implemented to ensure these and other offerings at McMaster are effectively communicated.

Budget pressures continue into the planning years. Investments toward operational and efficiency reviews and retirement incentives to enable some faculty renewal are planned. Finally, budget plans continue to include broadening existing community initiatives and partnerships including a continued focus on healthy communities and living initiatives with the City of Hamilton and beyond.

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10.2   RESEARCH FUND

Table 7: Research Fund Summary

($ thousands)

	2018/19 Budget	2018/19 Projection	2018/19 Variance	2019/20 Budget	2020/21 Plan	2021/22 Plan
Revenues						
Research grants and contracts	209,000	195,000	(14,000)	197,000	199,000	201,000
Total revenues	**209,000**	**195,000**	**(14,000)**	**197,000**	**199,000**	**201,000**
Expenses						
Salaries, wages and benefits	117,000	110,000	7,000	111,000	112,000	113,000
All other expenses*	83,000	75,000	8,000	75,000	75,000	75,000
Transfers to (from) other funds	(13,638)	(16,434)	2,796	(14,346)	(14,026)	(12,907)
Total expenses	**186,362**	**168,566**	**17,796**	**171,654**	**172,974**	**175,093**
Excess of revenues over expenses	**22,638**	**26,434**	**3,796**	**25,346**	**26,026**	**25,907**
Fund balance, beginning of year	222,125	198,518	(23,607)	224,952	250,298	276,324
Fund balance, end of year	**244,763**	**224,952**	**(19,811)**	**250,298**	**276,324**	**302,232**

*Including transfers to capital

The 2018/19 Research Fund revenue projection is $195 million, which is based on research revenue receipted, including revenue received for future periods, net of hospital research. The projection is $14 million lower than the original budget due to variances in recoveries from funding organizations.

The budget for 2019/20 of $197 million reflects modest growth in the research fund. The plan years of 2020/21 and 2021/22 also include modest growth in research receipts.

10.3   CAPITAL FUND

Table 8: Capital Fund Summary

($ thousands)

	2018/19 Budget	2018/19 Projection	2018/19 Variance	2019/20 Budget	2020/21 Plan	2021/22 Plan
Revenues						
Operating grants	3,750	3,562	(188)	3,520	3,520	3,520
Other revenues	35,100	21,372	(13,728)	9,650	14,150	54,750
Total revenues	**38,850**	**24,934**	**(13,916)**	**13,170**	**17,670**	**58,270**
Expenses						
All other expenses, including capital	155,016	137,538	17,478	192,126	137,635	107,601
Transfers to (from) other funds	(31,770)	(34,907)	3,136	(35,012)	(31,684)	(30,718)
Debt and financing charges	(12,298)	(9,819)	(2,479)	(12,096)	(15,006)	(16,456)
Total expenses	**110,948**	**92,812**	**18,135**	**145,018**	**90,945**	**60,427**
Excess of revenues over expenses	**(72,098)**	**(67,878)**	**4,219**	**(131,848)**	**(73,275)**	**(2,157)**
Fund balance, beginning of year	112,789	88,446	(24,343)	20,568	(111,280)	(184,555)
			-			
Fund balance, end of year	**40,691**	**20,568**	**(20,123)**	**(111,280)**	**(184,555)**	**(186,712)**

Spending in the Capital Fund includes major building and renovation projects, transfers from the Operating Fund, and repayments of internal capital loans. The information in the consolidated budget table above reflects capital projects included in the University's Capital Master Plan (see also Section 6.3), as well as the prior year's budget updated with current spending.[11]

Table 9 below summarizes the total expected capital funding and spending by project for fiscal 2018/19 to 2021/22. The updated capital projection ($137.5 million) is lower than the original budget ($155.0 million) due to slower than expected spending on some key projects. For 2019/20, spending on capital projects will increase to $192.1 million, reflecting investment in three residence projects, significant construction in connection with the Athletics and Recreation expansion, and several ongoing projects (such as the DSB Expansion, Research Commercialization Space and deferred maintenance).

Table 9: Capital Spending by Project

($ thousands)

	2018/19 Projection	2019/20 Plan	2020/21 Plan	2021/22 Plan
Approved projects				
ABB Deep Retrofit - SIF Program	22,419	-	-	-
Adjacent Graduate Residence Parking Structure	-	9,900	-	-
Advanced Manufacturing Centre	2,500	6,560	-	-
Athletic and Recreation - Pulse and Student Space Expansion	2,800	29,500	30,110	-
Biomedical Engineering and Advanced Manufacturing (BEAM)	2,986	-	-	-
Campus Accessibility Action Plan	605	605	605	605
CFI 2014 / 2015	1,094	-	-	-
CFI 2017	6,012	-	-	-
Classroom Reconfiguration Plan	3,000	3,000	2,480	2,000
Deferred Maintenance Projects & Infratructure Renewal	13,250	13,020	13,020	13,020
DSB Expansion	-	14,086	30,970	31,398
Energy Management Projects and Sustainability	8,653	-	-	-
Forge Expansion at MIP	1,800	-	-	-
Innovation Hub - The Clinic	-	2,250	-	-
McMaster Main Street Residence	1,645	-	(2,729)	-
Peter George Centre for Living and Learning	41,864	36,550	8,104	-
Research Capital Commercialization & Spin-Off Space	10,000	30,000	9,980	-
Residence Renewal Program	3,025	2,000	2,000	2,000
SANS for Nanostructured Materials	4,793	-	-	-
Temporary Lecture Hall	1,657	-	-	-
Other	6,736	400	400	400
Total approved projects	**134,838**	**147,871**	**94,940**	**49,423**
Estimate of planned projects - not yet approved	2,700	44,255	42,696	58,179
Total capital spending	**137,538**	**192,126**	**137,635**	**107,601**

[11] Capital expenditures used in operations and to support ancillary departments are budgeted through the Operating and Ancillary Funds within the same envelope system, and using the same priority-setting, monitoring and control process as operating expenses. Capital expenditures budgeted within the Operating and Ancillary Funds include equipment, renovations, faculty start-up costs, and deferred maintenance. Internally led projects that require financing borrow from McMaster's central bank approach at the weighted average cost of capital plus a stabilization factor, which is currently 5.75%.

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The table above includes capital projects that are approved, as well as an estimate of projects currently in the planning phase. The unapproved projects are currently being reviewed by senior management. The provincial government's withdrawal of graduate and MD expansion capital funding of over $5 million annually may impact the timing of planned projects as alternative sources of funding are identified. If these planned projects are pursued, a business case will be created including stress testing for varying income adjustments beyond the tuition and capital funding cuts. Approval will be subject to the appropriate governance process.

While not all external funding for projects has been received at the time of construction, all funding sources for a project are identified prior to the project's approval. Interim and long-term financing is provided by a University central bank. Additional external borrowing needs are examined annually, as outlined in Section 12 Overall Borrowing and Debt Position.

10.4   EXTERNAL ENDOWMENT

Table 10: External Endowment Summary

($ thousands)	2018/19 Projection	2019/20 Budget	2020/21 Plan	2021/22 Plan
Revenues				
Other revenues	6,214	2,721	2,669	2,495
Investment income (loss)	21,750	28,838	29,322	29,795
Total revenues	**27,964**	**31,559**	**31,991**	**32,290**
Expenses				
All other expenses	2,640	3,745	5,717	6,511
Transfers to (from) other funds	19,876	19,619	18,245	18,386
Total expenses	**22,516**	**23,364**	**23,962**	**24,897**
Excess of revenues over expenses	**5,448**	**8,195**	**8,029**	**7,393**
Fund balance, beginning of year	483,335	488,783	496,978	505,007
Fund balance, end of year	**488,783**	**496,978**	**505,007**	**512,400**

The external endowment consists of accounts that hold donations or bequests received by the University that have conditions or legal requirements for use agreed upon by the donor and the University. Endowed donations are held in perpetuity and invested in the University's long-term investment pool.

The 2018/19 rate of return on endowed trust funds is projected to be 4.5% net of investment management fees. For planning years 2019/20 through 2021/22, a rate of 5.9% has been assumed. In 2018/19, endowed trust fund donations are projected at $6.2 million compared to $2.7 million in the 2019/20 budget.

In order to protect the capital value of external endowments and ensure that spending allocations can increase over time for inflation, an endowment capital protection policy limits the amount of investment income allocated for spending and administration. The current limit is 5%[12] (4% for spending and 1% administration). The policy requires the reinvestment of excess income earned

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[12] Calculated based on the monthly average market value of the capital balance of the trust fund for the last five years.

(interest, dividends, realized and unrealized gains, net of expenses) to protect the capital value of the endowment from inflation. In years where investment returns are less than 5.0% the policy allows temporary encroachment of this reinvested income. This situation is expected to occur for 2018/19.

At April 30, 2018, the University's external endowment was $483.3 million, including a protection of capital amount of $92.9 million. The following chart illustrates the anticipated change in the protection of capital balance and the total endowment over the next four years based on the above assumptions for endowed donations, rate of return, and spending.

Figure 16:   External Endowment Fund Balance Trend
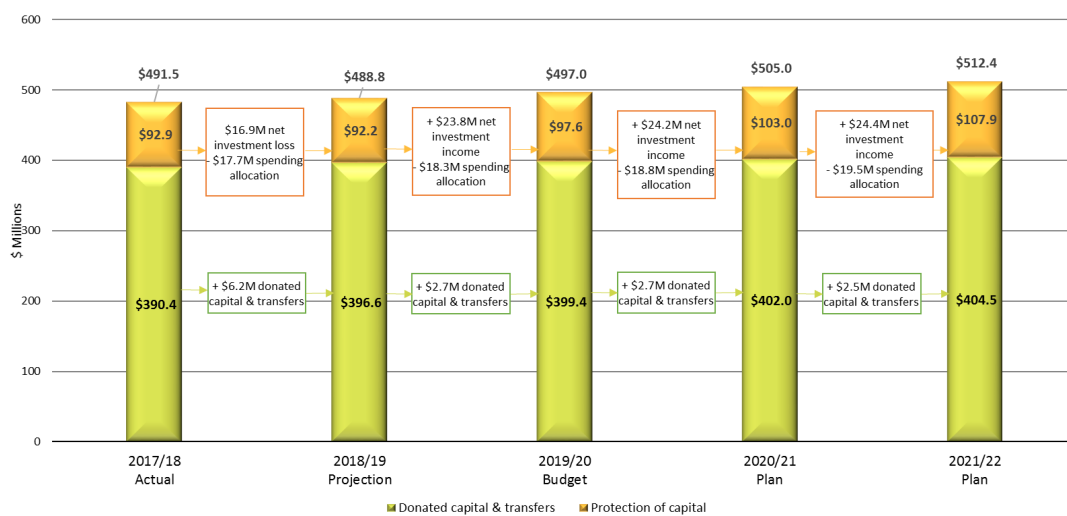
10.5   INTERNAL ENDOWMENT

Table 11: Internal Endowment Summary

($ thousands)	2018/19 Projection	2019/20 Budget	2020/21 Plan	2021/22 Plan
Revenues				
Other revenues	99	100	100	100
Investment income (loss)	6,560	8,696	8,852	9,010
Investment income transfer	(4,521)	(5,556)	(5,608)	(5,750)
Total revenues	**2,138**	**3,240**	**3,344**	**3,360**
Expenses				
All other expenses	-	53	108	165
Transfers to (from) other funds	534	540	550	560
Total expenses	**534**	**593**	**658**	**725**
Excess of revenues over expenses	1,604	2,647	2,686	2,635
Fund balance, beginning of year	145,777	147,381	150,028	152,714
Fund balance, end of year	**147,381**	**150,028**	**152,714**	**155,349**

The internal endowment includes unrestricted donations, bequests and other allocations that are set aside for future obligations and restricted by the Board of Governors. The funds are invested in the University's long-term investment pool. The largest endowment is the Dr. H. L. Hooker Endowment (approximately $70 million), which is a bequest restricted for use to advance the University's mission. An annual allocation from the internal endowment is made to the Operating Fund and distributed to Faculties through the budget model. In 2019/20 the allocation amounts to $5.6 million.

10.6   INTERNAL RESERVES

There are other critical internal reserves created to settle future obligations associated with current faculty, staff or other activities. Internal reserves include two categories of funding first Operating Fund reserves from Faculties and departments projected to be $145.2 million in 2018//19 falling to $115.2 million in 2019/20 and to $73 million by 2021/22 as Faculties and departments draw on reserves to fund strategic initiatives despite the domestic tuition revenue losses. Faculties and departments are required to develop structurally balance budgets each year and additionally are expected to save reserves for new capital investments or renovations or other large strategic initiatives.

The second component of internal reserves relates to future obligation settlement needs projected as $88.4 million in 2018/19 and planned to be $150.7 million by 2021/22. The settlement related internal reserves appear as internal reserves on the University's statement of financial position and could be misinterpreted as funding available for other uses, however to do so would be detrimental to future University generations passing on unfunded obligations related to current operations. Some examples of these internal reserves include two debt retirement sinking funds, the Canadian Nuclear Safety Commission's required Nuclear Reactor decommissioning fund, and the special post-retirement benefit fund. Each of the aforementioned internal reserves are monitored annually for sufficiency of the reserve compared to the future liability or third party projected obligation. Balances of these settlement reserves compared to targeted funding are presented separately throughout the year to the Planning and Resources Committee of the Board of Governors. For example, the special post-retirement fund has less than 10% of the funding required to settle future payments related to existing faculty and staff in the plan.

Overall, internal reserves are a critical component of the University's financial health strategy to ensure funding is appropriately set aside today for future obligations arising from current faculty, staff and activities.

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10.7   ANCILLARY FUND

Table 12: Ancillary Fund Summary

($ thousands)

	2018/19 Budget	2018/19 Projection	2018/19 Variance	2019/20 Budget	2020/21 Plan	2021/22 Plan
Revenues						
Ancillary sales and services	82,678	81,565	(1,114)	89,378	91,039	91,039
Total revenues	**82,678**	**81,565**	**(1,114)**	**89,378**	**91,039**	**91,039**
Expenses						
Salaries, wages and benefits	29,603	29,981	(379)	32,442	32,243	32,243
All other expenses	32,656	31,778	878	32,815	33,029	33,029
Transfers to (from) other funds*	16,977	16,339	638	17,218	17,377	17,377
Debt and financing charges	4,613	5,079	(466)	7,661	8,003	8,003
Total expenses	**83,849**	**83,178**	**671**	**90,135**	**90,652**	**90,652**
Excess of revenues over expenses	**(1,171)**	**(1,613)**	**(443)**	**(757)**	**387**	**387**
Fund balance, beginning of year	8,679	10,971	2,291	9,358	8,601	8,601
Fund balance, end of year	**7,509**	**9,358**	**1,849**	**8,601**	**8,987**	**8,987**

*Including transfers to capital

Ancillary operations provide essential academic and student support services across the University. Ancillary units enhance the student experience and contribute funding to both direct student support and the operating budget to support the core University mission. Ancillaries must be self-sustaining, maintaining a surplus or break-even position after paying all direct costs including space, as well as contributing approximately 4.5% of sales to the Operating Fund. Projections by individual ancillary unit are available in Appendix 4. Each ancillary operation must save funding or finance (through the form of an internal loan) for its own capital additions and infrastructure renewals, thus a reserve or appropriations balance for the fund of up to 15% of revenues is possible in advance of key capital project decisions. Funding for capital projects, once approved or committed to, is transferred into the project reserve and approved once sufficient funding for the project is collected or reasonably assured.

10.7.1   CAMPUS STORE

Learning in the classroom continues to evolve as new tools for teaching and assessment are introduced to the educational marketplace. The materials selected to facilitate this learning come in a variety of formats and each format supports a different learning style. The Campus Store works closely with faculty, providing students with a variety of course material options that support their educational experience. The Campus Store has the ability to deliver dynamic digital content as well as traditional physical textbooks. Materials include both paid and free content that is published by faculty members or sourced from major publishers and open educational resources providers.

With the rise in online learning and the introduction of dynamic content and ebooks, the unit sales of print materials continue to decline. The sale of course materials still generates enough revenue to offset expenses but the general book department within the Campus Store operates at a loss. The store continues to sell general reference materials, alumni and faculty publications, and general reading materials by offsetting the operating loss through the sale of crested merchandise and other

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operations. The importance of having traditional book sections in a University store is high and the store has found a way to offset the cost of doing so through other sales activities.

In the budget and planning years ahead the Campus Store will be focused on the transformation of educational materials, outreach and community engagement, working with community partners to move current objectives forward, and exploring expansion of online sales strategies and other new business opportunities.

10.7.2   CENTER FOR CONTINUING EDUCATION (CCE)

Key strategic initiatives tied to the SMA include CCE's ongoing practice of innovative models of teaching and learning supported by the use of technology and its many programs that prepare graduates for a fast-paced changing work setting. CCE advances educational access through its many open enrolment programs and a second MyOWN Mac pathway that enables adult learners to progress from study within CCE to degree studies in sociology. It is also dedicated to enhancing the adult learner's experience through a Student Advisory Group and, as possible, implementing supports tied to student learning and career advancement. CCE is active in the research and scholarship sector as it involves adult, continuing, and online education. It has also made contributions in the community engagement sector. Engagement is likewise reflected in its present work with the Faculty of Social Sciences on the MyOWN Mac pathway in Sociology and the Peter Boris Centre for Addictions Research and Peter G. DeGroote Centre for Medicinal Cannabis Research on The Science of Cannabis program.

Salaries and benefits continue to be the most significant cost pressure for CCE, particularly given the number of highly skilled staff required to support online development and delivery. Also, CCE has increased the fees it pays its instructors which is an annual increased cost. This adjustment was necessary to attract and retain instructors and to be competitive with other continuing education units. When CCE partners with Faculties and institutes and uses faculty members as content developers and/or instructors, it pays these persons higher fees. Further, the changing nature of the marketplace, increased competition from diverse providers, and unknown variables such as CCE experienced this past year are all challenges.

CCE will roll out additional revenue strategies in the upcoming year. The first is a micro-learning strategy given the market trend for just in time knowledge and skills training. The strategy will enable the Centre to explore uptake before investing significant resources into the development that an academic certificate requires. Short courses and talks will encourage participants to learn more by enrolling in an existing certificate and generate new topics for exploration. Second, in addition to its reputation for the quality of its certificate and diploma programs, Continuing Education has a reputation for excellence in professional development. Taking this expertise and its experience in online education to adult learners across the country and to new English-speaking markets across the globe will enhance enrolments and revenues. Further, the management team is exploring how to bring international learners to Continuing Education for professional development in areas such as project management, data analytics, and other high demand areas.

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10.7.3   HOSPITALITY SERVICES

Each Hospitality Services location plays a critical support role in McMaster's on-going pursuit of excellence and enhancing the student experience. Ensuring a focus on efficiency, flexibility and adaptability allows Hospitality Services to contribute to McMaster's Strategic Mandate and the core Operating Budget. The Hospitality Services five-year strategic plan was developed within the framework of the key business objectives of the department that align with *FWI* and the administration division supporting strategic plan. Hospitality Services has developed a strong direction for achieving financial stability, operational growth and improving on the student experience to ensure long-term relevance in supporting McMaster's overall strategy and vision. Technology, nutrition and internationalization of our menus will guide the department as we provide a more in depth food service aligned to the principles found in the Okanagan Charter.

McMaster University continues to operate a highly respected Hospitality Services department – a reputation built on quality and value. Providing quality and value while having low meal plan pricing relative to peers is a testament to the resourcefulness and the innovation of the department over time. However, it will be necessary for the department to continually assess both meal plan and retail pricing to maintain a balanced budget. Planned increases, considering student value first and foremost, will be critical to absorb the financial impacts in the areas of unionized labour contracts and market inflation, while continuing the current level of quality and reputation.

While the pressures of cost and pricing create budget challenges, Hospitality will diligently work to assess and validate its approaches to keep Hospitality Services at the forefront of their sector within the Canadian university marketplace and contribute positively to McMaster's overall mission and reputation. Actions for new value driven revenue streams to overcome financial challenges will include review of meal plan and retail pricing; increased Internationalized menu offerings that support our diverse student cultural needs; continued review/implementation of trending and innovative concepts; social media marketing; and, collaboration with internal partners to develop an integrated technology strategy. Operational efficiencies will be driven through a streamlined, compliant purchasing approach and a cost mitigation strategy that includes the review of Hospitality units that operate at a loss.

10.7.4   HOUSING AND CONFERENCE SERVICES (H&CS)

H&CS directly supports the University's goal of advancing human and societal wellbeing and the overriding vision of educating for capability. Specifically, H&CS provides a distinctive living and learning experience for 4,100 students focused on key educational priorities including community development, personal growth and wellness, academic excellence, and inclusion. The residence experience we offer students is a critical factor to assisting with our SMA metric of retaining students between Year 1 and Year 2.

H&CS concurrently drives a positive McMaster experience for guests, alumni, staff, faculty and student by providing accommodation and event coordination which meet the highest standards of service excellence. H&CS is proud to be a leading ancillary contributor to the financial health of the University and the core academic and research mission of McMaster.

The key financial pressures facing H&CS are capital renewal/capacity expansion and debt servicing. H&CS is advancing a 'One Stop Shop' ancillary service delivery model, improved access to campus

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space to intensify the summer utilization of campus assets, and diversifying revenue streams by introducing year-round executive-style accommodations to serve the local and campus community.

10.7.5   MEDIA PRODUCTION SERVICES (MPS)

MPS's strategic initiatives are focused on revenue generation with a view to retiring historical MPS debt. As a result, MPS will continue to seek support to adopt a centralized print management strategy. A firm policy for centralized management will maximize savings and quality benefits to Faculty and departments. Print and digital formats are proving to be complementary and mutually supportive. MPS sees its future as a central hub where print and digital services interact. MPS will continue pursuing its web strategy: developing scalable, fully hosted, brand consistent but design flexible websites that are AODA compliant and incorporate responsive, user-friendly content management systems.

The MPS reorganization has equipped the business unit with the adaptability it needs to effectively navigate an industry that is rapidly changing. However, the lower demand for printing and increased competition continues to challenge MPS. The current optical mark recognition equipment is over 15 years old, at the end of its useful life and in need of replacement. Despite these challenges, MPS is on track to deliver a surplus for the sixth consecutive year.

The Digital Imaging Manager will play a key leadership role within MPS, acting as a catalyst for achieving critical initiatives for our department. This position will proactively seek out new revenue sources, support planning and review of new technologies, and continue to innovate and market new products and services. This will happen in the context of fostering alignment with the University's priorities and continuing to ensure operational and service excellence. Systems and procedures are being streamlined and new revenue streams as identified in our strategic plan are actively being sought and evaluated.

10.7.6   PARKING AND TRANSIT SERVICES

The department continues to work towards increasing capacity for monthly student parking hence improving the student experience. The wayfinding initiative along with improved parking technology will enhance the experience for the University community.

The increasing accumulated debt for underground parking facilities and the accompanying loss of space in prime parking lots as a result of construction projects continues to negatively impact the parking budget. New offsite development has increased the request for service presenting operational challenges due to limited staffing levels. New initiatives added to the managing portfolio for the department such as campus wayfinding also present added cost pressures to the budget.

Parking Services will continue to explore revenue generating and cost cutting opportunities in order to maintain a balanced budget. Opportunities to expand parking capacity where possible will also be explored. The department may reduce service for non-priority activities and defer investment in parking infrastructure should sufficient funding not be available.

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10.8   SPECIFICALLY EXTERNALLY FUNDED

Table 13: Specifically Externally Funded Summary

($ thousands)

	2018/19 Budget	2018/19 Projection	2018/19 Variance	2019/20 Budget	2020/21 Plan	2021/22 Plan
Revenues						
Other revenues	32,694	34,595	1,901	32,987	32,477	32,477
Total revenues	**32,694**	**34,595**	**1,901**	**32,987**	**32,477**	**32,477**
Expenses						
Salaries, wages and benefits	23,884	24,489	(605)	23,715	23,135	23,135
All other expenses	10,342	12,256	- 1,914	10,352	9,599	9,599
Transfers to (from) other funds	(216)	(99)	(117)	(176)	-	-
Total expenses	**34,009**	**36,646**	**(2,637)**	**33,891**	**32,734**	**32,734**
Excess of revenues over expenses	**(1,315)**	**(2,051)**	**(736)**	**(904)**	**(257)**	**(257)**
Fund balance, beginning of year	6,244	8,762	2,518	6,711	5,807	5,807
Fund balance, end of year	**4,929**	**6,711**	**1,782**	**5,807**	**5,550**	**5,550**

Externally restricted funds other than research, trust or capital are tracked in a separate fund. Programs managed in this fund involve external sponsors such as the Ministry of Health and Long-Term Care and the Ontario Online Initiative, and meet the following criteria:

- The funding is provided by an external entity
- There is an agreement with the sponsor to spend the funding for a specified purpose on specified items
- Unspent funding must be returned to the sponsor

Departments are responsible for administering this funding, ensuring that it is used for the intended purpose and not overdrawn. Specifically externally funded programs are included within budget submissions to Budget Committee.

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11   CONSOLIDATED RESULTS

Figure 17:   **Consolidated 2019/20 Budget Revenue by Fund**
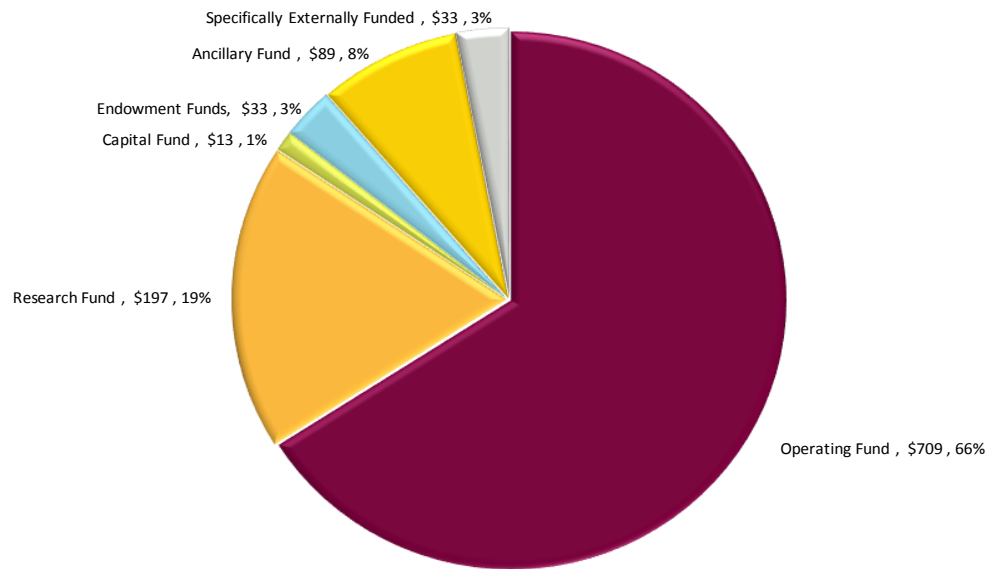
As outlined in Section 8.3 Budget Design, the budget process results in a revenue and expense budget for each fund. The Annual Financial Report includes the audited financial statements that are prepared on a full accrual basis using the deferral method of accounting for revenue (see Appendix 6 Significant Accounting Policies for more details). Under this method, all funds are consolidated into a single column for the Statement of Operations, Statement of Financial Position and the Statement of Cash Flows. In order to complete the Consolidated Budget document on the same basis as the Annual Financial Report accounting adjustments are made to each fund.

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Table 14: Reconciliation of Operating Fund Budget to Accrual-Based Budget

($ thousands)

	2018/19 Projection	2019/20 Budget	2020/21 Plan	2021/22 Plan
Excess/(deficiency) of Operating Fund revenues over expenses	2,458	(29,906)	(23,279)	(18,936)
+ Capital expenditures net of amortization	73,398	91,155	47,152	23,061
+ Investment income on internal endowments	1,604	2,647	2,686	2,636
+ Pension & non-pension adjustments	(7,600)	(8,106)	(8,617)	(9,138)
+ Change in other (non-internal endowment) investment returns, changes in other reserves net of Operating Fund income	45,382	2,226	48,994	59,838
+ Prior period adjustment/pension special payment	(6,777)	2,433	1,898	1,784
Total accrual adjustment	106,007	90,356	92,112	78,180
Excess of revenues over expenses	**108,465**	**60,450**	**68,833**	**59,244**

Table 14 shows the summary adjustments required to reconcile the Operating Fund's net income from the fund and cash accounting basis to the full accrual basis for all funds, the adjustments include:

- Capital expenditures treated as immediate cash basis expenses are added back and only the net amortization expense is deducted reflecting the useful life of the capital asset over time.

- Investment income earned or (lost) on internal endowments, net of funds not already transferred to the Operating Fund, are added back or (subtracted).

- Actuarial adjustments (excluding re-measurements) for pension and non-pension costs are recorded.

- Reclassifications to offset internal transactions between departments affecting revenues and expenditures are recorded.

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11.1   STATEMENT OF OPERATIONS

Table 15: Consolidated Statement of Operations (Accrual Basis)

($ thousands)

	2018/19 Projection	2019/20 Budget	2020/21 Plan	2021/22 Plan
Revenues				
Operating grants	272,482	273,528	273,199	273,008
Research grants and contracts	173,459	176,061	178,702	181,382
Tuition fees	341,272	338,962	363,173	388,611
Ancillary sales and services	78,654	80,227	82,032	83,878
Other revenues	186,029	189,749	201,134	205,157
Investment income (net)	55,420	62,452	64,479	66,435
Amortization of deferred capital contributions	45,812	45,743	44,594	43,737
Revenues from new capital projects	-	-	-	300
Additional revenue from internal loan repayment	9,092	9,525	18,111	18,913
Total revenues	**1,162,220**	**1,176,247**	**1,225,424**	**1,261,422**
Expenses				
Salaries and wages	530,731	562,575	585,078	608,481
Employee benefits	121,414	123,842	126,319	128,845
Supplies and services	287,537	294,007	299,887	305,885
Interest on long-term debt	13,239	14,739	16,237	16,194
Amortization of capital assets	82,349	88,181	96,000	101,588
Expenses from new capital projects	3,485	17,454	18,071	21,186
Contingent expenses	15,000	15,000	15,000	20,000
Total expenses	**1,053,755**	**1,115,798**	**1,156,591**	**1,202,178**
Excess of revenues over expenses	**108,465**	**60,450**	**68,833**	**59,244**

The consolidated statement of operations targets a 10% excess of revenues over expenses in order to fund the internal reserves for future obligations sufficiently. The excess is currently less that 10% of consolidated revenues in all years. In 2018/19 the lower results are a function of weakened interest rate returns. In 2019/20 and beyond the results are lower due to the tuition fee cut and the Faculties continuing to invest in strategic priorities drawing upon unit level reserves. In the budget and planning years, if the return on investment is 5.9% or greater then the internal reserves will be reasonably funded despite unit level spending in the Operating Fund.

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11.2   STATEMENT OF FINANCIAL POSITION

Table 16: Consolidated Statement of Financial Position

($ thousands)

	2018/19 Projection	2019/20 Budget	2020/21 Plan	2021/22 Plan
Assets				
Cash	29,271	30,994	32,128	33,394
Short-term investments	146,355	154,972	160,638	166,969
Medium-term investments	364,423	295,458	255,469	272,639
Long-term investments	997,981	1,045,736	1,079,958	1,114,886
Capital assets	1,186,948	1,333,324	1,404,960	1,450,674
Other assets	155,568	158,680	161,853	165,090
Total assets	**2,880,547**	**3,019,165**	**3,095,005**	**3,203,652**
Liabilities and deferred contributions				
Current portion of long-term debt	630	654	678	703
Deferred contributions for future expenses	360,370	361,573	362,800	364,051
Deferred capital contributions	503,176	490,535	481,111	514,344
Long-term debt	253,133	327,479	326,801	326,099
Decommissioning obligation	14,132	15,221	16,393	17,655
Employee future benefits and pension	242,979	247,839	252,796	257,852
Other liabilities	176,371	179,898	183,496	187,166
Total liabilities and deferred contributions	**1,550,792**	**1,623,198**	**1,624,074**	**1,667,868**
Net assets				
Unrestricted	9,781	9,781	9,781	9,781
Internally restricted reserves	253,801	224,523	207,059	248,725
Internally restricted endowments	147,381	150,028	152,714	155,349
Externally restricted endowments	488,783	496,978	505,007	512,400
Net investment in plant, adjusted	430,008	514,657	596,370	609,529
Total net assets	**1,329,755**	**1,395,966**	**1,470,931**	**1,535,784**
Total liabilities and net assets	**2,880,547**	**3,019,165**	**3,095,005**	**3,203,652**

The statement of financial position is the University's consolidated balance sheet. The cash and short term investments reflect funds needed for current spending. Medium term investments are funds invested in longer durations approximating 36 to 48 months. The long term investments reflect funds placed in the unitized Investment Pool, which targets an annual 5.9% return. Long term investments hold both external and internal endowment funds, as well as a component of funds not needed in the short or medium term. Capital assets reflect infrastructure additions that meet the capitalization accounting policy (described further in Appendix 6). Other assets include grants and other accounts receivable, prepaid expenses, inventories and investments in McMaster Innovation Park, Adiga Life Sciences and the Halton McMaster Family Health Centre.

Deferred contributions for future expenses and capital reflect funding received for specific purposes that has not yet been expended or met the test to expense. This funding is reduced when the related expense occurs resulting in offsetting revenue or net neutral impact to the statement of operations. The long term debt obligation relates primarily to bonds raised in 2002 and 2015 for capital investments, both obligations have an internally restricted sinking fund reserve to settle the future

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$240 million in balloon payments, $120 million due in 2052 and the other $120 million due in 2065. The decommissioning liability is a figure determined by the Canadian Nuclear Safety Commission and an offsetting internally restricted reserve has been created to fund this obligation when it becomes due. The employee future benefits and pension liability is determined by the University's third party actuary for each future benefit and pension plan the University has with its faculty and staff. For costs associated with the variable pension expences and future special post retirement benefit internally restricted reserves are used. Finally, other liabilities generally include accounts payable and accrued liabilities, as well as deferred revenue that will be recognized in a future period.

Finally, net assets comprise of almost $10 million in unrestricted reserves and $253.8 million in internally restricted reserves explained previously in section 10.6. The external and internal reserves are also explained in greater detail in sections 10.4 and 10.5 respectively. Finally, net investments in plant reflects accrual basis adjustments for investments made by the University in capital that is added to as new investments are made and reduced by each University invested assets annual useful life amortization expense.

11.3   STATEMENT OF CASH FLOWS

Table 17: Consolidated Statement of Cash Flows

($ thousands)

	2018/19 Projection	2019/20 Budget	2020/21 Plan	2021/22 Plan
Excess of revenues over expenses	108,465	60,450	68,833	59,244
Add/(deduct) non-cash items				
Change in deferred pension asset	-	-	-	-
Amortization of capital assets	82,349	88,181	96,000	101,588
Amortization of deferred capital contributions	(45,812)	(45,743)	(44,594)	(43,737)
Amortization of deferred contributions for future expenses	1,179	1,203	1,227	1,251
Change in decommissioning obligation	1,010	1,088	1,172	1,262
Miscellaneous non-cash changes in assets and liabilities	21,803	5,276	5,381	5,489
Add/(deduct) cash from operations, finance and investing				
Change in deferred capital contributions	45,056	33,102	35,170	76,970
Contributions to externally restricted endowments	5,448	8,195	8,029	7,392
Repayment of long-term debt (existing and proforma debt)	(608)	(630)	(654)	(678)
Other	5,836	(2,433)	(1,898)	(1,784)
New debt issuance	-	75,000	-	-
Acquisition of capital assets	(174,972)	(234,558)	(167,635)	(147,301)
Change in cash	(10,635)	(1,723)	(1,133)	(1,266)
Change in short-term investments	43,251	(8,617)	(5,666)	(6,332)
Change in long-term investments	80,827	(47,755)	(34,222)	(34,928)
Increase/(decrease) in medium-term investments	**163,196**	**(68,965)**	**(39,990)**	**17,170**
Medium-term investments, beginning of year	201,227	364,423	295,458	255,469
Medium-term investments	**364,423**	**295,458**	**255,469**	**272,639**

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11.4   METRICS

11.4.1   HIGHLIGHTS

Table 18: Budget Financial Highlights

($ millions)

	2018/19 Projection	2019/20 Budget	2020/21 Plan	2021/22 Plan
Total net assets	1,329.8	1,396.0	1,470.9	1,535.8
Available expendable resources	587.3	568.7	562.6	616.0
Capital spending	169.0	229.4	158.9	137.4
Total revenues	1,162.2	1,176.2	1,225.4	1,261.4
Total expenses	1,053.8	1,115.8	1,156.6	1,202.2
Excess of revenues over expenses - consolidated	108.5	60.4	68.8	59.2
Excess/(deficiency) of revenues over expenses - Operating Fund	2.5	(29.9)	(23.3)	(18.9)

11.4.2   FINANCIAL HEALTH METRICS

Table 19: Financial Health Metrics

Metric	Ratio	2018/19 Projection	2019/20 Budget	2020/21 Plan	2021/22 Plan
Performance	Net income/loss ratio	9.3%	5.1%	5.6%	4.7%
Performance	Net operating revenues ratio[1]	14.5%	9.4%	10.4%	9.9%
Liquidity	Primary reserve ratio (days)[2]	204	186	179	186
Leverage	Interest burden ratio	1.4%	1.4%	1.5%	1.5%
Leverage	Viability ratio[3]	2.2	1.7	1.6	1.8

[1]Measures cash flow from operating activities as a proportion of revenues

[2]Measures the number of days University reserves can cover operating expenses

[3]Measures the proportion of long-term debt that could be settled using unrestricted assets

The ratios above are required by MTCU to be reported each year, and in the annual SMA report. No targets have been set by MTCU, however McMaster is satisfied that the resulting ratios are consistent with the University's own credit management ratios. These ratios are shown in the section below and include acceptable ranges as defined in the University's Debt Management Policy. These ratios are consistent with those monitored by the University's credit rating agencies.

11.4.3   DEBT MANAGEMENT RATIOS

Table 20: Debt Management Ratios

	2018/19 Projection	2019/20 Budget	2020/21 Plan	2021/22 Plan
Available expendable resources to debt (≥ 0.6 to > 1.0)	2.1	1.6	1.6	1.8
Interest coverage (> 2.75 to > 3.25)	12.0	8.0	8.4	8.2
Available expendable resources as a percentage of revenues (> 15%)	50.5%	48.4%	45.9%	48.8%
Liquidity ratio (> 1%)	2.0%	2.0%	2.0%	2.0%

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11.5   RISKS TO THE 2019/20 BUDGET

The key risks to the budget relate to achieving diversified international enrolment targets. Diversity of international enrolment will be important to minimize geopolitical risk related to potential adverse foreign government policies. Enrolment growth will eventually be limited by capacity, forcing a greater focus on the delivery of new revenues and operational process efficiencies.

Implementation of provincial performance- or outcomes-based funding introduces the risk associated with up to 60% of McMaster's funding linked to the achievement of 10 SMA targets, 9 set by MTCU and 1 University selected. The budget has absorbed the 10% domestic tuition cut in 2019/20 and the rate freeze in 2020/21, however there is no indication of changes to the tuition framework in 2021/22 and beyond and if held frozen the University will not have any source of inflationary funding related to domestic higher education delivery.

Risk of market volatility and capital losses could impact annual commitments to operations, including funding for Chairs, scholarships and bursaries. This risk is managed by diversification and experienced oversight, as well as maintenance of an internally restricted investment reserve established more formally following the financial crisis to cover annual spending commitments that might otherwise be hindered in a prolonged market loss situation. In addition to potential market losses, a decline in interest rates would affect pension plan liabilities and increase the amount of required payments. Projections and scenario modeling are used to monitor this risk and develop funding strategies using internally restricted benefit reserves to potentially supplement payment schedules resulting in a process of smoothed benefit rate budgeting for Faculties and departments enabling greater stability.

Additional systemic or uncontrollable risks include ensuring sufficiency of funding for investments in infrastructure and strategic priorities such as the research commercialization project involving the relocation of research spin-off entities to the McMaster Innovation Park by building a research hub in the City of Hamilton. Further still, the University has partnered with the private sector in an effort to minimize debt directly held by the University while still delivering on key capital projects of strategic importance to the University's mission. Risk of bankruptcy of public-private partners involves mitigation strategies including extensive due diligence initiatives, strategic negotiations allowing remedy within a defined period and the University's right to buy out the partnership or replace the partner failing reasonable remedy.

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12   OVERALL BORROWING AND DEBT POSITION

Strategic initiatives and capital projects (both infrastructure and technology related) require a combination of financing solutions, including internal loans from the central bank, commitments against future revenue streams, gifts, and/or external or off-book financing.

External financing is used to fund the central bank and is considered a perpetual component of the University's capital structure. The University examines optimal debt positions for strategic and capital needs against established debt management guidelines and financial health metrics annually, results of which are outlined in a debt strategy report along with multi-year financial projections. McMaster uses debt retirement funds (or sinking funds) for the bonds outstanding.

Additional borrowing is identified in the 2019 Debt Strategy report suggesting $75 million over 30-years, this debt projection is included in budget for conservatism. However, the University has taken a strategic approach to delay the recommendation for approval to proceed with this new debt until early 2020 when more may be known regarding the extent of MTCU funding cuts and other changes. The new debt is tied to providing additional central bank resources over the period whereby the Peter George Centre for Living and Learning and other projects are complete and new projects such as the McLean Centre for Learning and Discovery will be initated. Internal loans associated with completed projects average a 30-year repayment schedule. A 30-year debt maturity creates staggering maturities for external debt and allows current strategic initiatives to proceed despite reduced provincial capital funding, while maintaining strong financial health metrics and our AA credit rating with DBRS and S&P.

13   CONCLUSIONS ON THE 2019/20 BUDGET

The 2019/20 Operating Fund is structurally balanced in all planning years, with department reserves, also referred to as appropriations, being drawn down to advance one-time strategic initiatives aligning to *FWI* and SMA milestones and metrics, such as investments in academic, research, community and infrastructure support. On a consolidated basis, a surplus of $60.5 million is budgeted after required generally accepted accounting principle (GAAP) accrual adjustments. These include adding back capital expenditures during the year and only recognizing one year of the capital projects' useful life as amortization expense. The consolidated results are sensitive to market volatility associated with investment returns. A plus or minus 1% variance results in a plus or minus $5.9 million impact to the consolidated results. Returns are budgeted using the long term rate of return average of 5.9% for 2019/20 and beyond.

Budget submissions across all areas reflect a core focus toward research initiatives, advancing meaningful student experiences, and strengthening our connections to the community locally and beyond. McMaster is taking steps to continue these initiatives as planned despite the provincially mandated 10% cut to domestic tuition rates in 2019/20 and tuition freeze for 2020/21. The budget includes maximum funded domestic enrolment (up to a corridor funding midpoint) along with international student enrolment that combined translate into modest overall targeted growth. Included in the budget to support enrolment, the Faculties' budget plans, taken together, include a 6% overall increase in faculty complement. This is expected to allow the University to build on our research strength and maintain our position at the very top of international rankings of high-impact universities.

The overall budget is positive primarily based on planned international enrolment strategies considered achievable. Over the longer term, enrolment strategies will become constrained by campus capacity. As such, new revenue strategies are being considered along with other operational efficiency projects. New revenue strategies include a review of professional programs, an examination of the use of campus in the summer, exploration and implementation of a block-chain certification platform and micro-credentialing or just in time certifications promoting life-long learning through online mechanisms that do not tax the University's physical infrastructure.

Budget pressures and some uncertainty in connection with provincial funding, future pension costs along with related inflationary pressures, and continued potential market volatility suggest our continued financial health depends on concerted pan-university efforts. These pan-university efforts include an increased focus on efficiency projects involving process reviews and automation efforts associated with high volume routine transactional work. The University will place a greater and growing emphasis on benchmarking data to target areas in need of the greatest review and process change.

Upcoming changes to MTCU's funding approach, whereby up to 60% of the University's funding will become at-risk connected to the achievement of ten SMA metrics, nine selected by MTCU and one University-selected, will not change the University's approach to budget allocations within the Operating Fund. McMaster's budget model is predominantly based on where students register and where students are taught flowing funds on these bases and allocating costs based on "use" drivers. The budget approach remains core to ensuring Faculties' understanding their revenues and cost drivers and it increases accountability and transparency around how funds are allocated and expended across the University to support the mission. The budget process also enables full alignment of budgets and planning with priorities and the SMA, and as such no changes to the budget model will be undertaken during MTCU's funding approach transition.

APPENDIX 1– OPERATING FUND PROJECTION VS. BUDGET

Table 21: Operating Fund 2018/19 Projection vs. Budget

($ thousands)	Operating Fund		2018/19 Variance	
	2018/19 Budget	**2018/19 Projection**	**Favourable/ (Unfavourable**	
Sources of Funding:				
Provincial Grants	235,368	235,016	(352)	-0.1%
Tuition	334,153	327,272	(6,881)	-2.1%
Research Overhead Income	25,904	28,933	3,029	11.7%
Investment Income	12,901	12,901	(0)	0.0%
Other income	93,990	104,461	10,471	11.1%
Total sources of funding	**702,316**	**708,583**	**6,267**	**0.9%**
Expenditure:				
Salaries, wages and benefits	476,153	473,605	2,547	0.5%
Utilities and maintenance	38,749	35,469	3,280	8.5%
Equipment and renovations	50,392	58,286	(7,893)	-15.7%
Scholarships, bursaries and work study	37,252	39,303	(2,051)	-5.5%
Library acquisitions	12,829	12,650	179	1.4%
Debt and financing charges	18,423	22,623	(4,200)	-22.8%
All other expenses	64,773	64,189	584	0.9%
Total expenditures	**698,571**	**706,125**	**(7,553)**	**-1.1%**
Total surplus (deficit)	**3,745**	**2,458**	**(1,287)**	**-34.4%**
Fund balances, beginning of year	110,679	142,698	32,019	28.9%
Fund balances, end of year	**114,423**	**145,156**	**30,732**	**26.9%**

The Operating Fund is projected to end 2018/19 in a more favourable position than the original budget due to more favourable fund balances at the end of 2017/18 carrying over.

Provincial grants are unfavourable by $0.4 million (-0.1%) due to removal of Midwifery grant funding from central provincial grant funding, for the Budget it was expected that Midwifery funding would come through the central provincial grants. This is partially offset by conversion of international PhD students to domestic, resulting in higher than budget Graduate Expansion grant.

Tuition is unfavourable by $6.9 million (-2.1%) primarily due to lower international enrolment compared to planned target whereby the enrolment difference accounts for student redirected to McMaster's english language program for one year and whereby those students will be redirected into regular first year enrolment next year.

Research overhead income is favourable by $3.0 million (11.7%) due to greater royalties and the new Incremental Projects Grant (IPG) component of the Research Support Fund, partially offset by lower research contract overhead.

Other income is favourable by $10.4 million due to revenue sources not anticipated at the time of the original budget. In particular, additional revenues in Humanities' supplementary English language program mentioned above, as a result of the targeted increase in international enrolment. As well, other income is favourable due to the inclusion of the Midwifery funding mentioned above, as a direct Faculty revenue, as well as increased revenue from other supplementary programs and fees.

Salaries, wages and benefits are favourable by $2.5 million (0.5%) due to unfilled positions and delayed hiring as temporary expense saving strategies.

Appendix 1– Operating Fund Projection *vs.* Budget

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Utilities and maintenance are favourable by $3.3 million (8.5%) due to a $2.89 million Ontario rebate for electricity consumers and because the University is now classified as a Residential Energy Consumer. Further still, utility rates were more favourable than budgeted.

Equipment and renovations are unfavourable by $7.9 million (-15.9%) whereby savings from Utilities were reinvested in energy management plan projects and deferred maintenance priorities. Further driving the unfavourable variance are capital transfers for the McLean Centre project, Science core research platforms, the Nuclear Magnetic Resonance Facility and Microscopy.

Scholarships, bursaries and work-study expenditures are unfavourable by $2.1 million (-5.5%) due to higher student enrolment.

Library acquisitions are favourable by $0.2 million (1.4%) due to conservative assumptions on journal inflation made in the original budget.

All other expenses are favourable by $0.6 million (0.9%) primarily due to lower than expected contingency spending on priorities.

The resulting $1.3 million unfavourable in-year deficit variance plus the $32 million favourable opening appropriations variance result in a projected closing balance in the Operating Fund of $30.7 million (26.9%) greater than the original budget. These appropriations will be carried forward for expenditure in 2019/20 and future years and will help to mitigate the impact of the 2019/20 tuition cut and investments in capital.

Appendix 1– Operating Fund Projection *vs.* Budget

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APPENDIX 2 – BUDGET MODEL CALCULATIONS

McMaster University - New Budget Model - Faculties														
Projected Budget Allocation			University Fund			8.00%	8.00%		VP Research Discretionary Fund		10.00%			
2018-19			Research Infrastructure Fund			3.00%	1.00%							
	prior to double stepdown allocation	Net double stepdown allocation	Business	Engineering	Health Sciences	Humanities	Science	Med Rad - Mohawk	Social Sciences	Arts & Science	Other (reconciling items)	University Fund	Research Infrastructure Fund	Total (after double stepdown to support unit allocations)
Revenue														
Undergraduate Tuition			49,438	91,402	34,367	15,980	58,888	2,272	33,667	1,832	-			287,846
UG Tuition Adjustment for tuition fee framework			(143)	(311)	61	67	207		109	10				-
Total UG SAG Obligation			(1,920)	(7,129)	(105)	(13)	(54)	-	(11)	(1)	9,233	-	-
Graduate Tuition			16,113	12,593	11,720	2,843	5,206	-	2,097	-	-			50,573
Operating Grant			19,220	43,500	81,420	14,661	51,421	2,264	21,198	1,679	-	5	-	235,368
Other Income			717	2,364	5,005	403	1,936	-	725	116	-	7,485	-	18,752
Gross Revenue			83,426	142,420	132,468	33,940	117,604	4,536	57,785	3,636	9,233	7,490		592,539
Undergraduate Cross Faculty Teaching Adjustment			(7,030)	(15,202)	(43)	7,994	9,242	-	5,678	(639)				0
Revenue for Contributions			76,395	127,218	132,425	41,934	126,846	4,536	63,463	2,997	9,233	7,490	-	592,539
University Fund Contribution			(6,112)	(10,177)	(10,594)	(3,355)	(10,148)	-	(5,077)	(240)		45,702		-
Research Infrastructure Fund Contribution			(2,292)	(3,817)	(1,324)	(419)	(1,268)	-	(635)	(90)		-	9,845	-
Indirect Cost of Research (excluding Royalties & CRC)			204	4,956	11,111	417	4,279	-	728	-	25	-		21,720
VP Research Discretionary (10% of ICR above)			(20)	(496)	(1,111)	(42)	(428)	-	(73)	-		2,170		-
Adjustments for ICR received by Journal (Contract & ERA)			(17)	(1,583)	(4,853)	(202)	(651)	-	(13)	-	-			(7,318)
Adjustments for Current Practices			(1,274)	(1,943)	(4,294)	(396)	(764)	(213)	(382)	-	5,000	-		(4,266)
Research Infrastructure Fund Distribution			93	2,249	5,042	189	1,942	-	330	-	-		(9,845)	-
Research Excellence Fund (from UF)			40	484	1,085	81	418	-	142	-	-	(2,250)		-
Revenue Prior to Shared Support Unit Allocations			67,017	116,892	127,488	38,207	120,226	4,324	58,484	2,667	16,427	50,943	-	602,675
Shared Support Unit Allocations - via double stepdown														
Occupancy Cost	42,072	(13,107)	(832)	(6,662)	(8,857)	(2,273)	(8,561)	-	(1,733)	(47)	-	-	-	(28,965)
Deferred Maintenance	9,893	(3,529)	(183)	(1,464)	(1,946)	(499)	(1,881)	-	(381)	(10)	-	-	-	(6,364)
Insurance	1,159	(475)	(20)	(161)	(199)	(55)	(207)	-	(42)	(1)	-	-	-	(684)
MIP Occupancy 1	2,677	(244)	-	(1,623)	(587)	(35)	-	-	(188)	-	-	-	-	(2,433)
MIP Occupancy 2	157	-	-	(157)	-	-	-	-	-	-	-	-	-	(157)
HR	6,728	(995)	(311)	(858)	(3,125)	(338)	(726)	-	(368)	(7)	-	-	-	(5,734)
HR Employee Programs	2,055	(534)	(107)	(234)	(524)	(164)	(337)	-	(155)	(1)	-	-	-	(1,521)
Financial Affairs/Admin/ Inst Support	7,301	(2,514)	(524)	(853)	(1,631)	(440)	(839)	-	(482)	(16)	-	-	-	(4,787)
Supplementary Pension	4,738	(239)	(391)	(727)	(1,740)	(394)	(795)	-	(450)	(3)	-	-	-	(4,499)
Pension Special	17,437	(4,533)	(905)	(1,982)	(4,447)	(1,389)	(2,855)	-	(1,316)	(9)	-	-	-	(12,904)
Presidential/Univ Sec	1,962	(762)	(131)	(214)	(409)	(110)	(210)	-	(121)	(4)	-	-	-	(1,200)
General University Expense	6,705	(2,825)	(425)	(692)	(1,322)	(357)	(680)	-	(391)	(13)	-	-	-	(3,880)
Bond Interest	7,380	(2,565)	(138)	(1,108)	(1,472)	(378)	(1,423)	-	(288)	(8)	-	-	-	(4,815)
UTS/ Technology Fund	15,072	2,519	(2,212)	(3,426)	(3,793)	(1,366)	(4,293)	-	(2,349)	(151)	-	-	-	(17,591)
UTS- ERP	4,517	(176)	(546)	(845)	(936)	(337)	(1,059)	-	(580)	(37)	-	-	-	(4,341)
UA	6,072	1,498	(941)	(1,704)	(1,878)	(552)	(1,636)	-	(820)	(40)	-	-	-	(7,570)
Office of the Provost	7,410	(2,833)	(501)	(816)	(1,560)	(421)	(803)	-	(461)	(15)	-	-	-	(4,577)
Research Support	9,377	5,137	(207)	(2,363)	(9,069)	(184)	(2,115)	-	(576)	-	-	-	-	(14,514)
Student Affairs	4,888	5,763	(1,468)	(2,183)	(1,657)	(872)	(2,819)	-	(1,549)	(104)	-	-	-	(10,651)
MIIETL	1,663	672	(315)	(468)	(407)	(187)	(604)	-	(332)	(22)	-	-	-	(2,335)
Libraries	18,861	8,130	(3,466)	(5,212)	(5,580)	(2,132)	(6,667)	-	(3,694)	(240)	-	-	-	(26,991)
HS Library	3,083	1,779	(624)	(939)	(1,005)	(384)	(1,201)	-	(665)	(43)	-	-	-	(4,862)
Registrar	5,341	7,600	(1,673)	(2,494)	(1,991)	(1,066)	(3,590)	-	(1,983)	(144)	-	-	-	(12,941)
SGS	1,828	410	(374)	(550)	(658)	(149)	(334)	-	(173)	-	-	-	-	(2,238)
Museum of Art	505	491	(121)	(188)	(240)	(75)	(235)	-	(129)	(8)	-	-	-	(996)
UG Scholarship	5,512	633	(838)	(1,347)	(497)	(533)	(1,864)	-	(993)	(72)	-	-	-	(6,145)
UG Bursaries	3,500	(0)	(465)	(748)	(366)	(296)	(1,035)	-	(551)	(40)	-	-	-	(3,500)
Grad Scholarship	13,796	687	(2,418)	(3,557)	(4,261)	(961)	(2,163)	-	(1,122)	-	-	-	-	(14,483)
Branding and Marketing	1,000	13	(126)	(228)	(251)	(74)	(219)	-	(110)	(5)	-	-	-	(1,013)
Adjustments for Current Practices - Support Units			-	-	-	-	-	-	-	-	(4,387)	-	-	-
Total Shared Support Unit Allocations	212,690	0	(20,262)	(43,803)	(56,021)	(16,021)	(49,152)	-	(22,004)	(1,040)	(4,387)	-	-	(212,690)
Net Revenue			46,755	73,089	71,467	22,186	71,075	4,324	36,480	1,627	12,041	50,943	-	389,985
2013-14 Projected Hold Harmless Level (Adjusted)			26,873	50,633	69,330	23,913	51,433	4,603	27,929	1,091				
Variance			19,882	22,456	2,137	(1,727)	19,642	(279)	8,550	536				
UF Supplement			-	-	5,849	5,281	937	-	-	-	-	(12,067)	-	-
UF Supplement 2 - Grants top up				667								(667)		-
Base Net Projected Budget 2018-19			46,755	73,089	77,982	27,467	72,012	4,324	36,480	1,627	12,041	38,209	-	389,985

McMaster University - New Budget Model - Faculties					Prof. Faculties	Other Faculties						
Projected Budget Allocation			University Fund		8.00%	8.00%		VP Research Discretionary Fund		10.00%		
2019-20			Research Infrastructure Fund		3.00%	1.00%						

	Budgets prior to double stepdown allocation	Net double stepdown allocation	Business	Engineering	Health Sciences	Humanities	Science	Med Rad - Mohawk	Social Sciences	Arts & Science	Other (reconciling items)	University Fund	Research Infrastructure Fund	Total (after double stepdown to support unit allocations)
Revenue														
Undergraduate Tuition			49,235	88,004	30,733	15,287	58,460	1,955	33,587	1,699	-			278,961
UG Tuition Adjustment for tuition fee framework			(257)	(954)	237	185	497		275	17				-
Total UG SAG Obligation			(2,017)	(7,844)	(151)	(31)	(183)	-	(65)	(2)	10,293			-
Graduate Tuition			17,769	10,783	11,334	2,590	11,334		2,006					48,987
Operating Grant			18,576	44,416	81,808	14,120	51,331	2,137	21,618	1,679	-	182	-	235,867
Other Income			888	2,223	5,036	515	1,934	-	766	105	-	7,407	-	18,874
Gross Revenue			84,195	136,627	128,997	32,666	116,544	4,092	58,188	3,498	10,293	7,589	-	582,689
Undergraduate Cross Faculty Teaching Adjustment			(6,490)	(13,292)	209	7,147	7,797	-	5,150	(520)	-			(0)
Revenue for Contributions			77,705	123,335	129,206	39,813	124,342	4,092	63,338	2,978	10,293	7,589	-	582,689
Internal International Tax			(201)	(279)	(3)	(31)	(167)	-	(98)	-		780		-
University Fund Contribution			(6,216)	(9,867)	(10,336)	(3,185)	(9,947)	-	(5,067)	(238)		44,857	-	-
Research Infrastructure Fund Contribution			(2,331)	(3,700)	(1,292)	(398)	(1,243)	-	(633)	(89)			9,687	-
Indirect Cost of Research (excluding Royalties & CRC)			223	4,654	10,174	419	4,262	-	763	-	29	-		20,524
VP Research Discretionary (10 % of ICR above)			(22)	(465)	(1,017)	(42)	(426)	-	(76)	-	2,049			-
Adjustments for ICR received by Journal (Contract & ERA)			(18)	(1,151)	(4,381)	(195)	(664)	-	(92)	-	-	-		(6,481)
Adjustments for Current Practices			-	-	(3,985)	(218)	184	(184)	218	-	-	-		(3,985)
Research Infrastructure Fund Distribution			105	2,200	4,809	198	2,015	-	361	-	-	-	(9,687)	-
Research Excellence Fund (from UF)			46	478	1,045	86	438	-	157	-	-	(2,250)		-
Revenue Prior to Shared Support Unit Allocations			69,289	115,225	124,218	36,446	118,793	3,908	58,869	2,650	12,372	50,976	-	592,746
Shared Support Unit Allocations - via double stepdown														
Occupancy Cost	43,703	(13,699)	(940)	(7,423)	(8,957)	(2,261)	(8,720)	-	(1,655)	(48)	-	-	-	(30,004)
Deferred Maintenance	10,593	(3,802)	(213)	(1,680)	(2,027)	(512)	(1,974)	-	(375)	(11)	-	-	-	(6,791)
Insurance	1,230	(508)	(23)	(182)	(205)	(56)	(214)	-	(41)	(1)	-	-	-	(722)
MIP Occupancy 1	2,673	(310)	-	(1,311)	(769)	(44)	-	-	(239)	-	-	-	-	(2,363)
MIP Occupancy 2	161	-	-	(161)	-	-	-	-	-	-	-	-	-	(161)
HR	6,926	(1,024)	(338)	(902)	(3,183)	(361)	(737)	-	(374)	(6)	-	-	-	(5,902)
HR Employee Programs	2,055	(534)	(107)	(234)	(524)	(164)	(337)	-	(155)	(1)	-	-	-	(1,521)
Financial Affairs/Admin/ Inst Support	7,557	(2,525)	(565)	(926)	(1,735)	(454)	(852)	-	(483)	(18)	-	-	-	(5,032)
Supplementary Pension	4,738	(279)	(408)	(734)	(1,710)	(387)	(789)	-	(430)	(3)	-	-	-	(4,459)
Pension Special	17,437	(4,533)	(905)	(1,982)	(4,447)	(1,389)	(2,856)	-	(1,316)	(9)	-	-	-	(12,904)
Presidential/Univ Sec	2,081	(800)	(144)	(236)	(442)	(116)	(217)	-	(123)	(4)	-	-	-	(1,281)
General University Expense	7,634	(3,144)	(504)	(826)	(1,548)	(405)	(761)	-	(431)	(16)	-	-	-	(4,490)
Bond Interest	9,922	(3,534)	(200)	(1,580)	(1,907)	(481)	(1,857)	-	(352)	(10)	-	-	-	(6,388)
UTS/ Technology Fund	17,741	2,273	(2,499)	(3,953)	(4,323)	(1,530)	(4,843)	-	(2,692)	(174)	-	-	-	(20,014)
UTS- ERP	4,517	(179)	(542)	(857)	(937)	(331)	(1,050)	-	(583)	(38)	-	-	-	(4,338)
UA	6,336	1,542	(1,027)	(1,790)	(1,899)	(553)	(1,713)	-	(855)	(40)	-	-	-	(7,878)
Office of the Provost	7,725	(2,867)	(545)	(894)	(1,675)	(438)	(823)	-	(466)	(17)	-	-	-	(4,858)
Research Support	9,992	5,834	(230)	(2,739)	(9,731)	(347)	(2,139)	-	(640)	-	-	-	-	(15,826)
Student Affairs	5,361	6,197	(1,577)	(2,400)	(1,811)	(925)	(3,035)	-	(1,696)	(114)	-	-	-	(11,558)
MIIETL	1,779	714	(333)	(507)	(435)	(195)	(641)	-	(358)	(24)	-	-	-	(2,493)
Libraries	19,917	8,718	(3,646)	(5,603)	(5,925)	(2,222)	(7,027)	-	(3,955)	(257)	-	-	-	(28,635)
HS Library	3,921	1,878	(738)	(1,135)	(1,200)	(450)	(1,423)	-	(801)	(52)	-	-	-	(5,799)
Registrar	5,607	8,206	(1,770)	(2,694)	(2,084)	(1,119)	(3,835)	-	(2,154)	(157)	-	-	-	(13,813)
SGS	1,885	418	(378)	(575)	(711)	(146)	(323)	-	(170)	-	-	-	-	(2,303)
Museum of Art	623	518	(138)	(218)	(275)	(84)	(267)	-	(149)	(10)	-	-	-	(1,141)
UG Scholarship	5,512	702	(839)	(1,382)	(487)	(530)	(1,881)	-	(1,021)	(74)	-	-	-	(6,214)
UG Bursaries	3,500	(0)	(460)	(758)	(357)	(291)	(1,032)	-	(560)	(41)	-	-	-	(3,500)
Grad Scholarship	13,818	686	(2,393)	(3,627)	(4,439)	(925)	(2,045)	-	(1,075)	-	-	-	-	(14,504)
Branding and Marketing	1,006	55	(138)	(241)	(256)	(75)	(231)	-	(115)	(5)	-	-	-	(1,061)
Adjustments for Current Practices - Support Units			-	-	4,559	-	-	-	-	-	(4,559)	-	-	0
Total Shared Support Unit Allocations	225,949	(0)	(21,598)	(47,551)	(59,439)	(16,789)	(51,620)	-	(23,264)	(1,129)	(4,559)	-	-	(225,949)
Net Revenue			47,691	67,673	64,779	19,657	67,174	3,908	35,605	1,521	7,813	50,976	-	366,797
UF Supplement			-	-	-	3,500	-	-	-	-	-	(3,500)		-
UF Supplement 2 - Grants top up					892							(892)		-
Base Net Projected Budget 2019-20			47,691	67,673	65,671	23,157	67,174	3,908	35,605	1,521	7,813	46,584	-	366,797

McMaster University - New Budget Model - Faculties														
Projected Budget Allocation			University Fund		Prof. Faculties 8.00%	Other Faculties 8.00%		VP Research Discretionary Fund			10.00%			
2020-21			Research Infrastructure Fund		3.00%	1.00%								

	Budgets prior to double stepdown allocation	Net double stepdown allocation	Business	Engineering	Health Sciences	Humanities	Science	Med Rad - Mohawk	Social Sciences	Arts & Science	Other (reconciling Items)	University Fund	Research Infrastructure Fund	Total (after double stepdown to support unit allocations)
Revenue														
Undergraduate Tuition			54,505	93,935	30,757	16,292	63,658	1,934	36,674	1,702	-			299,457
UG Tuition Adjustment for tuition fee framework			(257)	(954)	237	185	497		275	17				-
Total UG SAG Obligation			(2,000)	(7,895)	(153)	(31)	(181)	-	(64)	(2)	10,326			-
Graduate Tuition			18,553	11,098	11,051	2,523	4,400		2,017	-				49,643
Operating Grant			18,431	44,474	81,909	14,047	51,213	2,119	21,490	1,679	-	182	-	235,544
Other Income			888	2,223	5,036	515	1,934	-	766	105	-	4,454		15,921
Gross Revenue			90,121	142,880	128,837	33,531	121,521	4,053	61,159	3,501	10,326	4,636	-	600,565
Undergraduate Cross Faculty Teaching Adjustment			(6,564)	(13,781)	384	7,216	8,061	-	5,203	(519)	-			0
Revenue for Contributions			83,557	129,099	129,220	40,747	129,582	4,053	66,362	2,982	10,326	4,636	-	600,565
Internal International Tax			(751)	(993)	(7)	(121)	(646)	-	(381)	-		2,900		-
University Fund Contribution			(6,685)	(10,328)	(10,338)	(3,260)	(10,367)	-	(5,309)	(239)		46,524		-
Research Infrastructure Fund Contribution			(2,507)	(3,873)	(1,292)	(407)	(1,296)	-	(664)	(89)		-	10,128	-
Indirect Cost of Research (excluding Royalties & CRC)			223	4,654	10,174	419	4,262	-	763	-	29	-		20,524
VP Research Discretionary (10 % of ICR above)			(22)	(465)	(1,017)	(42)	(426)	-	(76)	-	2,049	-		-
Adjustments for ICR received by Journal (Contract & ERA)			(18)	(1,131)	(4,381)	(195)	(664)	-	(92)	-	-			(6,481)
Adjustments for Current Practices			-	-	(3,927)	(218)	179	(179)	218	-	-	-		(3,927)
Research Infrastructure Fund Distribution			110	2,300	5,028	207	2,106	-	377	-	-	-	(10,128)	-
Research Excellence Fund (from UF)			46	478	1,045	86	438	-	157	-	-	(2,250)		-
Revenue Prior to Shared Support Unit Allocations			73,954	119,741	124,504	37,215	123,169	3,873	61,355	2,654	12,405	51,810	-	610,681
Shared Support Unit Allocations - via double stepdown														
Occupancy Cost	43,991	(13,802)	(945)	(7,469)	(9,012)	(2,275)	(8,774)	-	(1,665)	(48)	-	-	-	(30,188)
Deferred Maintenance	10,593	(3,802)	(213)	(1,680)	(2,027)	(512)	(1,974)	-	(375)	(11)	-	-	-	(6,791)
Insurance	1,230	(508)	(23)	(182)	(205)	(56)	(214)	-	(41)	(1)	-	-	-	(722)
MIP Occupancy 1	2,673	(310)	-	(1,311)	(769)	(44)	-	-	(239)	-	-	-	-	(2,363)
MIP Occupancy 2	161	-	-	(161)	-	-	-	-	-	-	-	-	-	(161)
HR	6,926	(1,022)	(338)	(902)	(3,184)	(361)	(737)	-	(374)	(6)	-	-	-	(5,904)
HR Employee Programs	2,055	(534)	(107)	(234)	(524)	(164)	(337)	-	(155)	(1)	-	-	-	(1,521)
Financial Affairs/Admin/ Inst Support	7,557	(2,522)	(565)	(927)	(1,736)	(454)	(853)	-	(483)	(18)	-	-	-	(5,035)
Supplementary Pension	4,738	(278)	(408)	(734)	(1,710)	(387)	(789)	-	(430)	(3)	-	-	-	(4,460)
Pension Special	17,437	(4,533)	(905)	(1,982)	(4,447)	(1,389)	(2,856)	-	(1,316)	(9)	-	-	-	(12,904)
Presidential/Univ Sec	2,681	(799)	(144)	(236)	(442)	(116)	(217)	-	(123)	(4)	-	-	-	(1,282)
General University Expense	7,634	(3,144)	(504)	(826)	(1,548)	(405)	(761)	-	(431)	(16)	-	-	-	(4,490)
Bond Interest	10,089	(3,598)	(203)	(1,606)	(1,938)	(489)	(1,887)	-	(358)	(10)	-	-	-	(6,491)
UTS/ Technology Fund	18,241	2,270	(2,589)	(4,088)	(4,387)	(1,558)	(4,944)	-	(2,768)	(176)	-	-	-	(20,511)
UTS- ERP	4,517	(178)	(548)	(865)	(928)	(330)	(1,046)	-	(586)	(37)	-	-	-	(4,339)
UA	6,336	1,546	(1,069)	(1,820)	(1,847)	(538)	(1,714)	-	(855)	(39)	-	-	-	(7,881)
Office of the Provost	7,725	(2,864)	(546)	(895)	(1,676)	(438)	(823)	-	(466)	(17)	-	-	-	(4,860)
Research Support	9,992	5,854	(231)	(2,743)	(9,743)	(347)	(2,141)	-	(641)	-	-	-	-	(15,846)
Student Affairs	5,361	6,224	(1,597)	(2,428)	(1,795)	(921)	(3,026)	-	(1,704)	(113)	-	-	-	(11,585)
MIIETL	1,779	717	(337)	(512)	(431)	(194)	(638)	-	(359)	(24)	-	-	-	(2,496)
Libraries	20,317	8,764	(3,745)	(5,745)	(5,956)	(2,242)	(7,106)	-	(4,029)	(259)	-	-	-	(29,081)
HS Library	4,021	1,887	(761)	(1,167)	(1,210)	(456)	(1,444)	-	(819)	(53)	-	-	-	(5,908)
Registrar	5,607	8,254	(1,798)	(2,721)	(2,069)	(1,117)	(3,837)	-	(2,164)	(156)	-	-	-	(13,861)
SGS	1,885	419	(380)	(588)	(702)	(144)	(315)	-	(175)	-	-	-	-	(2,304)
Museum of Art	623	521	(140)	(221)	(273)	(84)	(267)	-	(150)	(10)	-	-	-	(1,144)
UG Scholarship	5,512	702	(849)	(1,388)	(481)	(527)	(1,874)	-	(1,021)	(73)	-	-	-	(6,214)
UG Bursaries	3,500	0	(466)	(762)	(353)	(289)	(1,029)	-	(561)	(40)	-	-	-	(3,500)
Grad Scholarship	13,818	686	(2,403)	(3,707)	(4,384)	(908)	(1,995)	-	(1,106)	-	-	-	-	(14,504)
Branding and Marketing	1,006	51	(143)	(244)	(248)	(72)	(230)	-	(115)	(5)	-	-	-	(1,057)
Adjustments for Current Practices - Support Units					4,559		-				(4,559)	-	-	0
Total Shared Support Unit Allocations	227,404	(0)	(21,955)	(48,144)	(59,465)	(16,815)	(51,829)	-	(23,508)	(1,129)	(4,559)	-	-	(227,404)
Net Revenue			51,999	71,597	65,039	20,400	71,340	3,873	37,847	1,525	7,846	51,810	-	383,276
UF Supplement			-	-	-	3,500	-	-	-	-	-	(3,500)		-
UF Supplement 2 - Grants top up					998							(998)		-
Base Net Projected Budget 2020-21			51,999	71,597	66,037	23,900	71,340	3,873	37,847	1,525	7,846	47,312	-	383,276

McMaster University - New Budget Model - Faculties

		Prof. Faculties	Other Faculties	
Projected Budget Allocation	University Fund	8.00%	8.00%	VP Research Discretionary Fund 10.00%
2021-22	Research Infrastructure Fund	3.00%	1.00%	

	Budgets prior to double stepdown allocation	Net double stepdown allocation	Business	Engineering	Health Sciences	Humanities	Science	Med Rad - Mohawk	Social Sciences	Arts & Science	Other (reconciling Items)	University Fund	Research Infrastructure Fund	Total (after double stepdown to support unit allocations)
Revenue														
Undergraduate Tuition			59,344	100,877	31,122	17,311	69,169	1,963	39,879	1,764	-			321,430
UG Tuition Adjustment for tuition fee framework			(114)	(643)	176	118	290		166	7				-
Total UG SAG Obligation			(1,977)	(7,952)	(156)	(31)	(181)	-	(64)	(2)	10,363			-
Graduate Tuition			18,761	11,383	11,057	2,518	4,360	-	2,065	-				50,144
Operating Grant			18,214	44,587	82,012	13,995	51,211	2,116	21,364	1,679	-	181	-	235,360
Other Income			888	2,223	5,036	515	1,934	-	766	105	-	4,808	-	16,275
Gross Revenue			95,117	150,474	129,247	34,426	126,783	4,080	64,177	3,552	10,363	4,989	-	623,208
Undergraduate Cross Faculty Teaching Adjustment			(6,595)	(13,922)	385	7,307	8,122	-	5,250	(546)		-		0
Revenue for Contributions			88,522	136,552	129,632	41,733	134,905	4,080	69,426	3,006	10,363	4,989	-	623,208
Internal International Tax			(741)	(977)	(7)	(124)	(661)		(390)	-		2,900		-
University Fund Contribution			(7,082)	(10,924)	(10,371)	(3,339)	(10,792)	-	(5,554)	(240)		48,302		-
Research Infrastructure Fund Contribution			(2,656)	(4,097)	(1,296)	(417)	(1,349)	-	(694)	(90)		-	10,599	-
Indirect Cost of Research (excluding Royalties & CRC)			223	4,654	10,174	419	4,262	-	763	-	29	-		20,524
VP Research Discretionary (10 % of ICR above)			(22)	(465)	(1,017)	(42)	(426)	-	(76)	-	2,049	-		-
Adjustments for ICR received by Journal (Contract & ERA)			(18)	(1,131)	(4,381)	(195)	(664)	-	(92)	-	-			(6,481)
Adjustments for Current Practices			-	-	(3,962)	(218)	180	(180)	218	-	-			(3,962)
Research Infrastructure Fund Distribution			115	2,407	5,262	216	2,204	-	395	-	-		(10,599)	-
Research Excellence Fund (from UF)			46	478	1,045	86	438	-	157	-		(2,250)		-
Revenue Prior to Shared Support Unit Allocations			78,387	126,498	125,077	38,119	128,097	3,900	64,152	2,675	12,442	53,941	-	633,288
Shared Support Unit Allocations - via double stepdown														
Occupancy Cost	43,991	(13,800)	(946)	(7,469)	(9,013)	(2,275)	(8,775)	-	(1,665)	(48)	-	-	-	(30,191)
Deferred Maintenance	10,593	(3,802)	(213)	(1,680)	(2,027)	(512)	(1,974)	-	(375)	(11)	-	-	-	(6,791)
Insurance	1,230	(508)	(23)	(182)	(205)	(56)	(214)	-	(41)	(1)	-	-	-	(722)
MIP Occupancy 1	2,673	(310)	-	(1,311)	(769)	(44)	-	-	(239)	-	-	-	-	(2,363)
MIP Occupancy 2	161	-	-	(161)	-	-	-	-	-	-	-	-	-	(161)
HR	6,926	(1,021)	(338)	(902)	(3,185)	(361)	(737)	-	(375)	(6)	-	-	-	(5,905)
HR Employee Programs	2,055	(534)	(107)	(234)	(524)	(164)	(337)	-	(155)	(1)	-	-	-	(1,521)
Financial Affairs/Admin/ Inst Support	7,557	(2,521)	(565)	(927)	(1,736)	(454)	(853)	-	(483)	(18)	-	-	-	(5,036)
Supplementary Pension	4,738	(278)	(408)	(734)	(1,710)	(387)	(789)	-	(430)	(3)	-	-	-	(4,460)
Pension Special	17,437	(4,533)	(905)	(1,982)	(4,447)	(1,389)	(2,856)	-	(1,316)	(9)	-	-	-	(12,904)
Presidential/Univ Sec	2,081	(799)	(144)	(236)	(442)	(116)	(217)	-	(123)	(4)	-	-	-	(1,282)
General University Expense	7,634	(3,144)	(504)	(826)	(1,548)	(405)	(761)	-	(431)	(16)	-	-	-	(4,490)
Bond Interest	10,089	(3,598)	(203)	(1,606)	(1,938)	(489)	(1,887)	-	(358)	(10)	-	-	-	(6,491)
UTS/ Technology Fund	18,941	2,251	(2,675)	(4,252)	(4,518)	(1,601)	(5,100)	-	(2,859)	(187)	-	-	-	(21,192)
UTS- ERP	4,517	(176)	(548)	(871)	(925)	(328)	(1,045)	-	(586)	(38)	-	-	-	(4,341)
UA	6,336	1,547	(1,102)	(1,840)	(1,794)	(528)	(1,719)	-	(861)	(38)	-	-	-	(7,883)
Office of the Provost	7,725	(2,864)	(546)	(895)	(1,676)	(438)	(823)	-	(466)	(17)	-	-	-	(4,861)
Research Support	9,992	5,857	(231)	(2,743)	(9,745)	(347)	(2,142)	-	(641)	-	-	-	-	(15,849)
Student Affairs	5,361	6,227	(1,596)	(2,445)	(1,793)	(915)	(3,020)	-	(1,703)	(116)	-	-	-	(11,588)
MII ETL	1,779	717	(337)	(516)	(430)	(193)	(697)	-	(359)	(24)	-	-	-	(2,496)
Libraries	20,317	8,766	(3,743)	(5,786)	(5,897)	(2,229)	(7,095)	-	(4,027)	(265)	-	-	-	(29,083)
HS Library	4,021	1,888	(761)	(1,176)	(1,206)	(453)	(1,442)	-	(818)	(54)	-	-	-	(5,909)
Registrar	5,607	8,256	(1,799)	(2,733)	(2,069)	(1,111)	(3,833)	-	(2,157)	(159)	-	-	-	(13,862)
SGS	1,885	419	(378)	(600)	(697)	(142)	(309)	-	(178)	-	-	-	-	(2,304)
Museum of Art	623	522	(140)	(223)	(272)	(84)	(267)	-	(150)	(10)	-	-	-	(1,145)
UG Scholarship	5,512	702	(849)	(1,392)	(486)	(524)	(1,870)	-	(1,018)	(75)	-	-	-	(6,214)
UG Bursaries	3,500	-	(466)	(764)	(355)	(288)	(1,027)	-	(559)	(41)	-	-	-	(3,500)
Grad Scholarship	13,818	686	(2,389)	(3,783)	(4,352)	(899)	(1,956)	-	(1,125)	-	-	-	-	(14,504)
Branding and Marketing	1,006	51	(148)	(247)	(241)	(71)	(231)	-	(116)	(5)	-	-	-	(1,057)
Adjustments for Current Practices - Support Units	-	-	-	-	4,559	-	-	-	-	-	(4,559)	-	-	0
Total Shared Support Unit Allocations	228,104	0	(22,061)	(48,517)	(59,481)	(16,800)	(51,916)	-	(23,612)	(1,157)	(4,559)	-	-	(228,104)
Net Revenue			56,326	77,980	65,596	21,319	76,181	3,900	40,540	1,518	7,883	-	-	405,184
UF Supplement			-	-	-	3,500	-	-	-	-	-	(3,500)	-	-
UF Supplement 2 - Grants top up					1,105							(1,105)		
Base Net Projected Budget 2021-22			56,326	77,980	66,701	24,819	76,181	3,900	40,540	1,518	7,883	49,337	-	405,184

APPENDIX 3 – OPERATING FUND UNIT LEVEL TABLES

Table 22: Operating Fund 2018/19 Projection by Unit

($ thousands)	Sources of Funding					Salaries & Benefits			Non-salary Expenses				Total Expenses	Annual Surplus (Deficit)
	Framework Allocation	University Fund Allocation	Research Overhead Income	Other Income	Total Income	Salaries & Wages	Benefits & PDA	Total	Scholarships	Library Acquisitions	All Other Expenses	Total		
1. Faculties														
Business	46,231	772	4	5,024	52,031	27,440	6,499	33,939	410	-	17,518	17,928	51,867	165
Engineering	70,176	999	1,653	3,215	76,043	47,109	11,448	58,557	1,627	-	14,516	16,142	74,700	1,343
Health Sciences	75,780	1,044	6,364	38,564	121,752	85,213	21,302	106,516	2,599	5	10,393	12,997	119,513	2,239
Humanities	27,010	2,333	194	8,818	38,355	26,752	6,765	33,517	114	-	1,973	2,086	35,604	2,751
Science	71,637	4,310	754	1,936	78,637	45,953	12,454	58,407	248	-	14,535	14,783	73,190	5,447
Medical Radiation - Mohawk share	4,112	-	-	-	4,112	-	-	-	-	-	4,113	4,113	4,113	(1)
Social Sciences	38,013	1,682	30	587	40,312	26,399	7,045	33,444	125	-	3,317	3,441	36,885	3,427
Arts & Science	1,681	(943)	-	8	746	1,511	102	1,612	1	-	118	119	1,731	(986)
Sub-total	334,640	10,198	8,999	58,151	411,988	260,377	65,615	325,992	5,123	5	66,482	71,610	397,602	14,385
2. Academic Priorities														
University Fund	27,929	(11,936)	-	50	16,043	-	-	-	-	-	16,778	16,778	16,778	(735)
Revenue Projection Contingency	4,563	-	-	-	4,563	-	-	-	-	-	-	-	-	4,563
Ongoing Priorities Contingency	(3,096)	-	-	-	(3,096)	2,339	-	2,339	-	-	(2,148)	(2,148)	191	(3,287)
One-time Priorities Contingency	(1,712)	-	-	-	(1,712)	-	-	-	-	-	-	-	-	(1,712)
Sub-total	27,684	(11,936)	-	50	15,798	2,339	-	2,339	-	-	14,630	14,630	16,970	(1,172)
TOTAL ACADEMIC	362,324	(1,738)	8,999	58,201	427,785	262,717	65,615	328,332	5,123	5	81,112	86,240	414,572	13,213
3. Academic Support														
Provost's Office	7,490	-	-	621	8,111	5,231	1,389	6,619	33	-	3,144	3,177	9,796	(1,685)
Museum of Art	505	-	-	182	687	647	217	864	-	-	(205)	(205)	659	28
MacPherson Institute	1,663	1,738	-	24	3,425	2,780	769	3,549	-	-	504	504	4,053	(628)
University Library	18,861	-	-	213	19,074	6,476	1,889	8,365	3	9,952	942	10,897	19,262	(187)
Health Sciences Library	3,083	-	15	97	3,195	1,567	466	2,032	-	2,694	(1,138)	1,555	3,588	(393)
Registrar	5,170	-	-	2,500	7,670	5,627	1,620	7,248	-	-	784	784	8,032	(362)
Sub-total	36,772	1,738	15	3,637	42,162	22,327	6,350	28,677	36	12,645	4,031	16,712	45,389	(3,228)
4. Research Support														
Research	7,659	-	4,571	8,570	20,801	11,432	3,377	14,809	94	0	7,134	7,228	22,036	(1,236)
VP Research Discretionary Fund	1,928	-	-	-	1,928	-	-	-	-	(0)	1,858	1,858	1,858	70
Research Loans	-	-	-	0	0	-	-	-	-	-	(89)	(89)	(89)	89
Sub-total	9,587	-	4,571	8,570	22,729	11,432	3,377	14,809	94	0	8,903	8,996	23,805	(1,077)
5. Student Support														
Graduate Scholarships	13,796	-	-	-	13,796	1,030	136	1,166	13,706	-	(0)	13,706	14,872	(1,076)
School of Graduate Studies	1,828	-	-	0	1,828	1,249	356	1,606	134	-	433	567	2,173	(345)
Student Affairs	4,888	-	-	23,770	28,658	14,294	3,350	17,644	384	-	11,514	11,898	29,542	(884)
DBAC Building Financing	-	-	-	-	-	-	-	-	-	-	291	291	291	(291)
DBAC Deferred Maintenance	-	-	-	-	-	-	-	-	-	-	(160)	(160)	(160)	160
Undergraduate Scholarships	21,596	-	-	285	21,881	1,725	-	1,725	19,826	-	180	20,006	21,731	150
Sub-total	42,108	-	-	24,055	66,163	18,299	3,842	22,141	34,051	-	12,257	46,308	68,449	(2,286)
6. Facilities Support														
Facilities Services	15,485	-	-	587	16,072	12,215	3,657	15,872	-	-	770	770	16,642	(571)
HSC Maintenance	4,002	-	-	40	4,042	-	-	-	-	-	4,042	4,042	4,042	(0)
Utilities	23,150	-	-	2,011	25,161	1,450	522	1,972	-	-	26,195	26,195	28,168	(3,007)
Security	1,976	-	-	103	2,079	1,866	504	2,370	-	-	20	20	2,390	(311)
Deferred Maintenance	10,227	-	-	-	10,227	-	-	-	-	-	10,227	10,227	10,227	(0)
Bond Interest	10,089	-	-	-	10,089	-	-	-	-	-	10,089	10,089	10,089	-
Renovation contingency	974	-	-	-	974	-	-	-	-	-	974	974	974	0
Sub-total	65,903	-	-	2,741	68,644	15,532	4,683	20,214	-	-	52,318	52,318	72,532	(3,888)
7. Institutional Support														
Administration	15,090	-	-	1,639	16,729	11,434	3,285	14,719	-	-	4,860	4,860	19,579	(2,849)
UTS Asset Management	1,200	-	-	-	1,200	57	20	77	-	-	1,639	1,639	1,716	(516)
UTS/Technology Fund	17,730	-	-	128	17,858	8,950	2,728	11,677	-	-	6,731	6,731	18,408	(550)
University Secretariat	902	-	-	-	902	583	177	760	-	-	176	176	936	(34)
President's Office	1,155	-	-	-	1,155	367	109	477	-	-	596	596	1,073	82
University Advancement	5,512	-	-	128	5,640	6,072	1,855	7,927	-	-	(2,208)	(2,208)	5,719	(79)
General University	9,401	-	-	2,044	11,445	871	150	1,021	-	-	10,511	10,511	11,532	(86)
Sub-total	50,990	-	-	3,940	54,930	28,334	8,323	36,657	-	-	22,306	22,306	58,962	(4,032)
8. Institutional Priority allocations														
Technology Renewal	4,517	-	-	-	4,517	-	-	-	-	-	-	-	-	4,517
Marketing & Branding	2,443	-	-	-	2,443	463	137	600	-	-	2,611	2,611	3,211	(768)
Pension	22,175	-	-	-	22,175	-	22,175	22,175	-	-	-	-	22,175	-
Strategic Priorities	-	-	-	-	-	-	-	-	-	-	(7)	(7)	(7)	7
Sub-total	29,135	-	-	-	29,135	463	22,312	22,775	-	-	2,604	2,604	25,379	3,756
Surplus/(Deficit)	596,819	-	13,585	101,143	711,547	359,104	114,502	473,605	39,303	12,650	183,530	235,484	709,089	2,458
Under/(over)allocated	-	-	-	(2,964)	(2,964)	-	-	-	-	-	(2,964)	(2,964)	(2,964)	-
Total Surplus/(Deficit)	596,819	-	13,585	98,179	708,583	359,104	114,502	473,605	39,303	12,650	180,566	232,519	706,125	2,458

Table 23: Operating Fund 2019/20 Budget by Unit

($ thousands)	Sources of Funding					Salaries & Benefits			Non-salary Expenses				Total Expenses	Annual Surplus (Deficit)
	Framework Allocation	University Fund Allocation	Research Overhead Income	Other Income	Total Income	Salaries & Wages	Benefits & PDA	Total	Scholarships	Library Acquisitions	All Other Expenses	Total		
1. Faculties														
Business	47,691	470	-	5,129	53,290	29,469	7,900	37,369	855	-	14,641	15,496	52,865	424
Engineering	67,673	1,028	1,260	3,709	73,670	50,415	13,384	63,799	1,922	-	14,716	16,638	80,437	(6,767)
Health Sciences	65,671	1,467	5,937	36,930	110,005	86,917	22,739	109,656	2,534	1	6,404	8,940	118,596	(8,591)
Humanities	23,157	2,707	115	10,556	36,534	26,815	7,097	33,912	436	-	1,693	2,130	36,042	493
Science	67,174	1,570	725	1,918	71,386	51,123	14,572	65,694	318	-	12,484	12,802	78,496	(7,110)
Medical Radiation - Mohawk share	3,908	-	-	-	3,908	-	-	-	-	-	3,908	3,908	3,908	-
Social Sciences	35,605	1,624	90	624	37,943	27,709	8,253	35,962	40	-	2,385	2,425	38,387	(443)
Arts & Science	1,521	57	-	-	1,578	1,469	96	1,565	1	-	57	57	1,622	(44)
Sub-total	312,400	8,923	8,126	58,865	388,315	273,917	74,040	347,957	6,106	1	56,288	62,395	410,352	(22,038)
2. Academic Priorities														
University Fund	36,584	(10,661)	-	-	25,923	-	-	-	-	-	43,317	43,317	43,317	(17,394)
Revenue Projection Contingency	4,305	-	-	-	4,305	-	-	-	-	-	-	-	-	4,305
Ongoing Priorities Contingency	29	-	-	(0)	29	(3,407)	-	(3,407)	-	-	(1,594)	(1,594)	(5,001)	5,030
One-time Priorities Contingency	618	-	-	-	618	-	-	-	-	-	-	-	-	618
Sub-total	41,536	(10,661)	-	(0)	30,875	(3,407)	-	(3,407)	-	-	41,724	41,724	38,317	(7,442)
TOTAL ACADEMIC	353,936	(1,738)	8,126	58,865	419,189	270,510	74,040	344,550	6,106	1	98,012	104,119	448,669	(29,479)
3. Academic Support														
Provost's Office	7,616	-	-	770	8,386	5,630	1,260	6,890	33	-	3,027	3,060	9,950	(1,564)
Museum of Art	623	-	-	169	792	648	235	883	-	-	(171)	(171)	712	80
MacPherson Institute	1,779	1,738	-	24	3,541	2,788	787	3,575	-	-	578	578	4,153	(612)
University Library	20,082	-	-	207	20,289	6,995	2,178	9,173	3	10,452	988	11,444	20,616	(327)
Health Sciences Library	4,277	-	15	97	4,389	1,675	482	2,157	-	2,796	(915)	1,881	4,039	350
Registrar	5,429	-	-	2,540	7,969	5,874	1,795	7,670	-	-	832	832	8,502	(532)
Sub-total	39,806	1,738	15	3,807	45,366	23,611	6,738	30,348	36	13,248	4,339	17,623	47,971	(2,605)
4. Research Support														
Research	9,156	-	3,981	9,478	22,614	11,997	3,645	15,643	94	0	6,885	6,978	22,621	(7)
VP Research Discretionary Fund	2,049	-	-	-	2,049	-	-	-	-	-	1,908	1,908	1,908	141
Research Loans	-	-	-	-	-	-	-	-	-	-	(89)	(89)	(89)	89
Sub-total	11,205	-	3,981	9,478	24,663	11,997	3,645	15,643	94	0	8,704	8,798	24,441	222
5. Student Support														
Graduate Scholarships	13,818	-	-	-	13,818	1,041	146	1,187	13,500	-	-	13,500	14,687	(869)
School of Graduate Studies	1,885	-	-	-	1,885	1,243	378	1,622	135	-	525	659	2,281	(396)
Student Affairs	5,911	-	-	23,612	29,523	15,223	3,807	19,030	384	-	9,969	10,353	29,384	139
DBAC Building Financing	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DBAC Deferred Maintenance	-	-	-	-	-	-	-	-	-	-	(160)	(160)	(160)	160
Undergraduate Scholarships	20,305	-	-	285	20,590	1,725	-	1,725	18,485	-	380	18,865	20,590	-
Sub-total	41,919	-	-	23,896	65,815	19,233	4,331	23,564	32,503	-	10,714	43,217	66,781	(966)
6. Facilities Support														
Facilities Services	15,486	-	-	587	16,073	11,959	3,785	15,743	-	-	289	289	16,032	41
HSC Maintenance	4,087	-	-	40	4,127	-	-	-	-	-	4,042	4,042	4,042	85
Utilities	23,781	-	-	1,886	25,667	1,500	565	2,065	-	-	22,670	22,670	24,736	932
Security	2,049	-	-	103	2,152	2,081	526	2,607	-	-	(195)	(195)	2,413	(261)
Deferred Maintenance	10,930	-	-	-	10,930	-	-	-	-	-	10,930	10,930	10,930	-
Bond Interest	10,089	-	-	-	10,089	-	-	-	-	-	10,089	10,089	10,089	-
Renovation contingency	974	-	-	-	974	-	-	-	-	-	974	974	974	0
Sub-total	67,396	-	-	2,616	70,012	15,540	4,876	20,416	-	-	48,799	48,799	69,215	797
7. Institutional Support														
Administration	15,509	-	-	1,708	17,217	12,017	3,728	15,745	-	-	2,201	2,201	17,946	(729)
UTS Asset Management	1,500	-	-	-	1,500	67	23	90	-	-	1,498	1,498	1,588	(88)
UTS/Technology Fund	20,127	-	-	128	20,255	8,932	2,856	11,788	-	-	9,194	9,194	20,982	(727)
University Secretariat	912	-	-	-	912	587	188	776	-	-	122	122	898	14
President's Office	1,169	-	-	-	1,169	380	119	498	-	-	657	657	1,155	14
University Advancement	5,760	-	-	128	5,888	7,185	2,156	9,341	-	-	(3,093)	(3,093)	6,249	(360)
General University	8,864	-	-	2,065	10,929	908	166	1,074	-	-	9,769	9,769	10,843	86
Sub-total	53,841	-	-	4,029	57,870	30,077	9,236	39,313	-	-	20,348	20,348	59,661	(1,791)
8. Institutional Priority allocations														
Technology Renewal	4,517	-	-	-	4,517	-	-	-	-	-	-	-	-	4,517
Marketing & Branding	2,422	-	-	-	2,422	663	204	867	-	-	2,156	2,156	3,022	(600)
Pension	22,175	-	-	-	22,175	-	22,175	22,175	-	-	-	-	22,175	-
Strategic Priorities	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total	29,114	-	-	-	29,114	663	22,379	23,042	-	-	2,156	2,156	25,197	3,917
Surplus/(Deficit)	597,217	-	12,122	102,691	712,030	371,631	125,244	496,875	38,739	13,249	193,072	245,061	741,936	(29,906)
Under/(over)allocated	0	0		(3,088)	(3,088)	-	-	-			(3,088)	(3,088)	(3,088)	0
Total Surplus/(Deficit)	597,217	0	12,122	99,603	708,942	371,631	125,244	496,875	38,739	13,249	189,984	241,973	738,848	(29,906)

Table 24: Operating Fund 2020/21 Plan by Unit

($ thousands)	Framework Allocation	University Fund Allocation	Research Overhead Income	Other Income	Total Income	Salaries & Wages	Benefits & PDA	Total	Scholarships	Library Acquisitions	All Other Expenses	Total	Total Expenses	Annual Surplus (Deficit)
1. Faculties														
Business	51,999	-	-	5,129	57,128	30,747	8,304	39,051	855	-	16,355	17,210	56,260	867
Engineering	71,597	870	1,260	3,313	77,040	53,376	14,511	67,887	1,958	-	14,215	16,173	84,060	(7,020)
Health Sciences	66,037	713	5,771	31,282	103,803	88,792	23,077	111,868	2,324	1	4,765	7,090	118,958	(15,156)
Humanities	23,900	2,239	20	11,580	37,739	27,785	7,384	35,170	482	-	2,061	2,543	37,713	25
Science	71,340	307	707	1,955	74,309	52,861	14,987	67,848	305	-	7,448	7,753	75,601	(1,292)
Medical Radiation - Mohawk share	3,873	-	-	-	3,873	-	-	-	-	-	3,873	3,873	3,873	-
Social Sciences	37,847	814	90	606	39,356	28,623	8,469	37,092	40	-	2,624	2,664	39,756	(400)
Arts & Science	1,525	57	-	-	1,582	1,527	91	1,619	1	-	54	54	1,673	(91)
Sub-total	328,118	5,000	7,848	53,863	394,829	283,711	76,823	360,535	5,965	1	51,395	57,361	417,895	(23,066)
2. Academic Priorities														
University Fund	37,312	(6,738)	-	-	30,574	-	-	-	-	-	35,574	35,574	35,574	(5,000)
Revenue Projection Contingency	7,305	-	-	-	7,305	-	-	-	-	-	-	-	-	7,305
Ongoing Priorities Contingency	29	-	-	-	29	(3,406)	-	(3,406)	-	-	(1,594)	(1,594)	(5,000)	5,029
One-time Priorities Contingency	5,881	-	-	-	5,881	-	-	-	-	-	4,787	4,787	4,787	1,094
Sub-total	50,527	(6,738)	-	-	43,789	(3,406)	-	(3,406)	-	-	38,767	38,767	35,361	8,428
TOTAL ACADEMIC	378,645	(1,738)	7,848	53,863	438,618	280,305	76,823	357,128	5,965	1	90,162	96,128	453,256	(14,638)
3. Academic Support														
Provost's Office	7,616	-	-	720	8,336	5,628	1,269	6,897	33	-	3,055	3,088	9,985	(1,649)
Museum of Art	623	-	-	190	813	750	243	994	-	-	(188)	(188)	806	7
MacPherson Institute	1,779	1,738	-	24	3,541	2,732	770	3,502	-	-	628	628	4,130	(589)
University Library	20,317	-	-	209	20,526	7,195	2,250	9,446	3	10,801	992	11,796	21,242	(716)
Health Sciences Library	4,021	-	5	97	4,123	1,721	487	2,208	-	2,912	(819)	2,093	4,301	(179)
Registrar	5,429	-	-	2,595	8,024	5,912	1,817	7,729	-	-	729	729	8,459	(435)
Sub-total	39,785	1,738	5	3,834	45,362	23,939	6,836	30,776	36	13,713	4,397	18,146	48,922	(3,560)
4. Research Support														
Research	8,156	-	3,981	9,853	21,990	12,392	3,800	16,192	94	0	7,035	7,129	23,321	(1,331)
VP Research Discretionary Fund	2,049	-	-	-	2,049	-	-	-	-	-	1,611	1,611	1,611	438
Research Loans	-	-	-	-	-	-	-	-	-	-	(89)	(89)	(89)	89
Sub-total	10,205	-	3,981	9,853	24,039	12,392	3,800	16,192	94	0	8,557	8,651	24,843	(804)
5. Student Support														
Graduate Scholarships	13,818	-	-	-	13,818	1,056	151	1,208	13,500	-	-	13,500	14,708	(890)
School of Graduate Studies	1,885	-	-	-	1,885	1,246	388	1,635	135	-	528	662	2,297	(412)
Student Affairs	5,911	-	-	25,744	31,655	15,906	3,969	19,875	384	-	12,407	12,791	32,666	(1,010)
DBAC Building Financing	-	-	-	-	-	-	-	-	-	-	1,658	1,658	1,658	(1,658)
DBAC Deferred Maintenance	-	-	-	-	-	-	-	-	-	-	(300)	(300)	(300)	300
Undergraduate Scholarships	19,338	-	-	285	19,623	1,725	-	1,725	17,558	-	340	17,898	19,623	-
Sub-total	40,952	-	-	26,029	66,981	19,934	4,508	24,442	31,576	-	14,633	46,209	70,651	(3,670)
6. Facilities Support														
Facilities Services	15,644	-	-	587	16,231	12,125	3,873	15,998	-	-	512	512	16,510	(279)
HSC Maintenance	4,002	-	-	40	4,042	-	-	-	-	-	4,042	4,042	4,042	(0)
Utilities	23,911	-	-	1,945	25,856	1,505	568	2,073	-	-	24,521	24,521	26,593	(737)
Security	2,049	-	-	103	2,152	2,088	519	2,606	-	-	(305)	(305)	2,301	(149)
Deferred Maintenance	10,930	-	-	-	10,930	-	-	-	-	-	10,930	10,930	10,930	-
Bond Interest	10,089	-	-	-	10,089	-	-	-	-	-	10,089	10,089	10,089	-
Renovation contingency	974	-	-	-	974	-	-	-	-	-	974	974	974	0
Sub-total	67,599	-	-	2,675	70,274	15,717	4,960	20,677	-	-	50,763	50,763	71,440	(1,166)
7. Institutional Support														
Administration	15,509	-	-	1,768	17,277	12,084	3,835	15,918	-	-	1,995	1,995	17,914	(637)
UTS Asset Management	1,500	-	-	-	1,500	11	5	16	-	-	1,824	1,824	1,840	(340)
UTS/Technology Fund	19,386	-	-	128	19,514	9,050	2,941	11,991	-	-	9,284	9,284	21,275	(1,761)
University Secretariat	912	-	-	-	912	595	190	785	-	-	123	123	908	4
President's Office	1,169	-	-	-	1,169	390	122	512	-	-	643	643	1,155	14
University Advancement	5,760	-	-	128	5,888	7,308	2,209	9,517	-	-	(3,125)	(3,125)	6,392	(503)
General University	8,864	-	-	2,085	10,949	932	171	1,103	-	-	10,077	10,077	11,180	(231)
Sub-total	53,100	-	-	4,109	57,209	30,369	9,474	39,843	-	-	20,821	20,821	60,664	(3,455)
8. Institutional Priority allocations														
Technology Renewal	4,517	-	-	-	4,517	-	-	-	-	-	-	-	-	4,517
Marketing & Branding	1,006	-	-	-	1,006	513	159	672	-	-	837	837	1,509	(503)
Pension	22,175	-	-	-	22,175	-	22,175	22,175	-	-	-	-	22,175	-
Strategic Priorities	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total	27,698	-	-	-	27,698	513	22,334	22,847	-	-	837	837	23,684	4,014
Surplus/(Deficit)	617,984	-	11,834	100,364	730,182	383,170	128,735	511,905	37,671	13,714	190,170	241,556	753,461	(23,279)
Under/(over)allocated	-	-	-	(3,135)	(3,135)	-	-	-	-	-	(3,135)	(3,135)	(3,135)	-
Total Surplus/(Deficit)	617,984	-	11,834	97,229	727,047	383,170	128,735	511,905	37,671	13,714	187,036	238,421	750,326	(23,279)

Appendix 3 – Operating Fund Unit Level Tables

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Table 25: Operating Fund 2021/22 Plan by Unit

($ thousands)	Framework Allocation	University Fund Allocation	Research Overhead Income	Other Income	Total Income	Salaries & Wages	Benefits & PDA	Total	Scholarships	Library Acquisitions	All Other Expenses	Total	Total Expenses	Annual Surplus (Deficit)
1. Faculties														
Business	56,326	-	-	5,129	61,455	31,857	8,705	40,563	855	-	16,382	17,237	57,800	3,654
Engineering	77,980	898	1,260	3,269	83,407	55,257	15,153	70,410	1,958	-	14,486	16,443	86,854	(3,447)
Health Sciences	66,701	65	5,775	27,108	99,649	90,838	23,769	114,607	2,325	1	3,963	6,289	120,895	(21,247)
Humanities	24,819	1,673	20	12,706	39,218	28,314	7,546	35,860	503	-	2,039	2,542	38,402	816
Science	76,181	110	707	1,957	78,955	54,615	15,516	70,130	305	-	6,641	6,946	77,077	1,878
Medical Radiation - Mohawk share	3,900	-	-	-	3,900	-	-	-	-	-	3,900	3,900	3,900	-
Social Sciences	40,540	648	90	531	41,808	29,825	8,884	38,709	40	-	2,554	2,594	41,303	505
Arts & Science	1,518	57	-	-	1,575	1,552	96	1,648	1	-	54	54	1,702	(127)
Sub-total	347,965	3,450	7,852	50,698	409,966	292,257	79,669	371,927	5,987	1	50,018	56,006	427,933	(17,967)
2. Academic Priorities														
University Fund	39,337	(5,188)	-	-	34,149	-	-	-	-	-	39,149	39,149	39,149	(5,000)
Revenue Projection Contingency	10,305	-	-	-	10,305	-	-	-	-	-	-	-	-	10,305
Ongoing Priorities Contingency	29	-	-	-	29	(3,406)	-	(3,406)	-	-	(1,594)	(1,594)	(5,000)	5,029
One-time Priorities Contingency	8,756	-	-	-	8,756	-	-	-	-	-	8,756	8,756	8,756	-
Sub-total	58,427	(5,188)	-	-	53,239	(3,406)	-	(3,406)	-	-	46,311	46,311	42,905	10,334
TOTAL ACADEMIC	406,392	(1,738)	7,852	50,698	463,204	288,851	79,669	368,520	5,987	1	96,329	102,317	470,837	(7,633)
3. Academic Support														
Provost's Office	7,616	-	-	670	8,286	5,643	1,278	6,921	33	-	3,046	3,079	10,000	(1,714)
Museum of Art	623	-	-	190	813	773	254	1,028	-	-	(202)	(202)	825	(12)
MacPherson Institute	1,779	1,738	-	24	3,541	2,711	771	3,482	-	-	619	619	4,100	(559)
University Library	20,317	-	-	210	20,527	7,428	2,350	9,778	3	11,201	987	12,191	21,969	(1,441)
Health Sciences Library	4,021	-	-	97	4,118	1,745	495	2,240	-	3,038	(771)	2,267	4,507	(390)
Registrar	5,429	-	-	2,650	8,079	6,002	1,864	7,866	-	-	727	727	8,593	(515)
Sub-total	39,785	1,738	-	3,841	45,364	24,304	7,011	31,315	36	14,239	4,405	18,680	49,995	(4,631)
4. Research Support														
Research	8,156	-	3,981	10,194	22,331	12,479	3,888	16,367	94	0	7,468	7,562	23,929	(1,598)
VP Research Discretionary Fund	2,049	-	-	-	2,049	-	-	-	-	-	1,060	1,060	1,060	989
Research Loans	-	-	-	-	-	-	-	-	-	-	(89)	(89)	(89)	89
Sub-total	10,205	-	3,981	10,194	24,380	12,479	3,888	16,367	94	0	8,439	8,533	24,899	(520)
5. Student Support														
Graduate Scholarships	13,818	-	-	-	13,818	1,073	159	1,232	13,500	-	-	13,500	14,732	(914)
School of Graduate Studies	1,885	-	-	-	1,885	1,250	391	1,642	135	-	528	662	2,304	(419)
Student Affairs	5,361	-	-	26,268	31,629	16,431	4,167	20,598	384	-	12,547	12,931	33,529	(1,901)
DBAC Building Financing	-	-	-	-	-	-	-	-	-	-	2,144	2,144	2,144	(2,144)
DBAC Deferred Maintenance	-	-	-	-	-	-	-	-	-	-	(420)	(420)	(420)	420
Undergraduate Scholarships	19,375	-	-	285	19,660	1,725	-	1,725	17,635	-	300	17,935	19,660	-
Sub-total	40,439	-	-	26,552	66,991	20,479	4,718	25,197	31,653	-	15,098	46,751	71,948	(4,957)
6. Facilities Support														
Facilities Services	15,644	-	-	587	16,231	12,242	3,983	16,225	-	-	536	536	16,761	(530)
HSC Maintenance	4,002	-	-	40	4,042	-	-	-	-	-	4,042	4,042	4,042	(0)
Utilities	23,911	-	-	1,945	25,856	1,509	580	2,090	-	-	24,771	24,771	26,861	(1,004)
Security	1,949	-	-	103	2,052	2,078	543	2,622	-	-	(313)	(313)	2,308	(256)
Deferred Maintenance	10,930	-	-	-	10,930	-	-	-	-	-	10,930	10,930	10,930	-
Bond Interest	10,089	-	-	-	10,089	-	-	-	-	-	10,089	10,089	10,089	-
Renovation contingency	974	-	-	-	974	-	-	-	-	-	974	974	974	0
Sub-total	67,499	-	-	2,675	70,174	15,829	5,107	20,936	-	-	51,029	51,029	71,965	(1,791)
7. Institutional Support														
Administration	15,509	-	-	1,811	17,320	12,159	3,902	16,062	-	-	1,912	1,912	17,973	(654)
UTS Asset Management	1,500	-	-	-	1,500	-	-	-	-	-	1,753	1,753	1,753	(253)
UTS/Technology Fund	17,861	-	-	128	17,989	9,335	3,068	12,403	-	-	7,831	7,831	20,234	(2,245)
University Secretariat	912	-	-	-	912	613	198	811	-	-	117	117	928	(16)
President's Office	1,169	-	-	-	1,169	402	127	528	-	-	627	627	1,155	14
University Advancement	5,760	-	-	128	5,888	7,245	2,227	9,472	-	-	(3,188)	(3,188)	6,284	(395)
General University	8,864	-	-	2,106	10,970	958	179	1,136	-	-	10,206	10,206	11,342	(372)
Sub-total	51,575	-	-	4,173	55,748	30,712	9,700	40,412	-	-	19,257	19,257	59,669	(3,921)
8. Institutional Priority allocations														
Technology Renewal	4,517	-	-	-	4,517	-	-	-	-	-	-	-	-	4,517
Marketing & Branding	1,006	-	-	-	1,006	530	166	696	-	-	310	310	1,006	0
Pension	22,175	-	-	-	22,175	-	22,175	22,175	-	-	-	-	22,175	-
Strategic Priorities	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total	27,698	-	-	-	27,698	530	22,341	22,871	-	-	310	310	23,181	4,517
Surplus/(Deficit)	643,593	-	11,833	98,133	753,559	393,183	132,435	525,618	37,770	14,240	194,867	246,877	772,495	(18,936)
Under/(over)allocated	-	-	-	(3,488)	(3,488)	-	-	-	-	-	(3,488)	(3,488)	(3,488)	-
Total Surplus/(Deficit)	643,593	-	11,833	94,645	750,071	393,183	132,435	525,618	37,770	14,240	191,379	243,388	769,007	(18,936)

Table 26: Operating Fund Annual Net Change by Unit

($ thousands)	2018/19		2019/20	2020/21	2021/22
	Budget	**Projection**	**Budget**	**Plan**	**Plan**
1. Faculties					
Business	3,878	165	424	867	3,654
Engineering	(1,966)	1,343	(6,767)	(7,020)	(3,447)
Health Sciences	(858)	2,239	(8,591)	(15,156)	(21,247)
Humanities	1,542	2,751	493	25	816
Science	1,750	5,447	(7,110)	(1,292)	1,878
Medical Radiation - Mohawk share	-	(1)	-	-	-
Social Sciences	1,959	3,427	(443)	(400)	505
Arts & Science	144	(986)	(44)	(91)	(127)
Sub-total	**6,449**	**14,385**	**(22,038)**	**(23,066)**	**(17,967)**
2. Academic Priorities					
University Fund	(2,357)	(735)	(17,394)	(5,000)	(5,000)
Revenue Projection Contingency	4,840	4,563	4,305	7,305	10,305
Ongoing Priorities Contingency	(252)	(3,287)	5,030	5,029	5,029
One-time Priorities Contingency	-	(1,712)	618	1,094	-
Sub-total	**2,231**	**(1,172)**	**(7,442)**	**8,428**	**10,334**
TOTAL ACADEMIC	**8,680**	**13,213**	**(29,479)**	**(14,638)**	**(7,633)**
3. Academic Support					
Office of the Provost	(1,202)	(1,685)	(1,564)	(1,649)	(1,714)
Museum of Art	2	28	80	7	(12)
MacPherson Institute	(666)	(628)	(612)	(589)	(559)
University Library	(546)	(187)	(327)	(716)	(1,441)
Health Sciences Library	(340)	(393)	350	(179)	(390)
Registrar	(396)	(362)	(532)	(435)	(515)
Sub-total	**(3,147)**	**(3,228)**	**(2,605)**	**(3,560)**	**(4,631)**
4. Research Support					
Research	(259)	(1,236)	(7)	(1,331)	(1,598)
VP Research Discretionary Fund	122	70	141	438	989
Research Loans	89	89	89	89	89
Sub-total	**(48)**	**(1,077)**	**222**	**(804)**	**(520)**
5. Student Support					
Graduate Scholarships	(1,147)	(1,076)	(869)	(890)	(914)
School of Graduate Studies	(129)	(345)	(396)	(412)	(419)
Student Affairs	(354)	(884)	139	(1,010)	(1,901)
DBAC Building Financing	758	(291)	-	(1,658)	(2,144)
DBAC Deferred Maintenance	160	160	160	300	420
Undergraduate Scholarships	1	150	0	-	-
Sub-total	**(712)**	**(2,286)**	**(966)**	**(3,670)**	**(4,957)**
6. Facilities Support					
Facilities Services	153	(571)	41	(279)	(530)
HSC Maintenance	(0)	(0)	85	(0)	(0)
Utilities	(364)	(3,007)	932	(737)	(1,004)
Security	(224)	(311)	(261)	(149)	(256)
Deferred Maintenance	0	(0)	-	-	-
Bond Interest	-	(0)	0	-	-
Renovation contingency	0	0	0	0	0
Sub-total	**(436)**	**(3,888)**	**797**	**(1,166)**	**(1,791)**
7. Institutional Support					
Administration	(3,972)	(2,849)	(729)	(637)	(654)
UTS/Technology Fund	(387)	(550)	(727)	(1,761)	(2,245)
UTS Asset Management	5	(516)	(88)	(340)	(253)
University Secretariat	(0)	(34)	14	4	(16)
Presidential Budget	(0)	82	14	14	14
University Advancement	(358)	(79)	(360)	(503)	(395)
General University	17	(86)	86	(231)	(372)
Sub-total	**(4,696)**	**(4,032)**	**(1,791)**	**(3,455)**	**(3,921)**
8. Institutional Priority allocations					
Technology Renewal	4,517	4,517	4,517	4,517	4,517
Marketing & Branding	(413)	(768)	(600)	(503)	0
Pension	-	-	-	-	-
Strategic Priorities	-	7	-	-	-
Sub-total	**4,104**	**3,756**	**3,917**	**4,014**	**4,517**
Surplus/(Deficit)	**3,745**	**2,458**	**(29,906)**	**(23,279)**	**(18,936)**
Under/(over)allocated	0	(0)	0	-	-
Total Surplus/(Deficit)	**3,745**	**2,458**	**(29,906)**	**(23,279)**	**(18,936)**

Appendix 3 – Operating Fund Unit Level Tables

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Table 27: Operating Fund 2018/19 Financial Position and Variance by Unit

($ thousands)	2018/19 Budget					2018/19 Projection					Favourable (Unfavourable) Variance				
	Appropriations April 30, 2018	On-going	One-time	Total	Appropriations April 30, 2019	Appropriations April 30, 2018	On-going	One-time	Total	Appropriations April 30, 2019	Appropriations April 30, 2018	On-going	One-time	Total	Appropriations April 30, 2019
1. Faculties															
Business	2,481	7,268	(3,390)	3,878	6,359	3,534	7,541	(7,376)	165	3,699	1,053	273	(3,986)	(3,713)	(2,660)
Engineering	21,239	3,424	(5,390)	(1,966)	19,272	21,318	4,670	(3,327)	1,343	22,661	79	1,246	2,064	3,309	3,388
Health Sciences	31,111	(1,458)	599	(858)	30,253	40,418	2,701	(462)	2,239	42,657	9,306	4,159	(1,061)	3,098	12,404
Humanities	(253)	855	687	1,542	1,288	(1,104)	403	2,348	2,751	1,647	(851)	(452)	1,661	1,209	358
Science	12,495	6,790	(5,040)	1,750	14,245	13,295	8,604	(3,157)	5,447	18,742	800	1,814	1,883	3,697	4,497
Medical Radiation - Mohawk share	1	-	-	-	1	1	(1)	-	(1)	0	0	(1)	-	(1)	(1)
Social Sciences	267	577	1,382	1,959	2,227	1,164	997	2,430	3,427	4,590	896	419	1,048	1,467	2,364
Arts & Science	2,397	87	57	144	2,541	2,502	31	(1,017)	(986)	1,516	105	(56)	(1,074)	(1,130)	(1,025)
Sub-total	69,737	17,544	(11,095)	6,449	76,186	81,127	24,945	(10,560)	14,385	95,512	11,390	7,401	535	7,936	19,326
2. Academic Priorities															
University Fund	41,290	3,026	(5,383)	(2,357)	38,933	41,408	12,020	(12,756)	(735)	40,673	118	8,995	(7,373)	1,622	1,740
Revenue Projection Contingency	-	4,840	-	4,840	4,840	-	4,563	-	4,563	4,563	-	(277)	-	(277)	(277)
Ongoing Priorities Contingency	732	(252)	-	(252)	480	3,328	(162)	(3,125)	(3,287)	40	2,596	90	(3,125)	(3,035)	(439)
One-time Priorities Contingency	-	10,000	(10,000)	-	-	-	10,000	(11,712)	(1,712)	(1,712)	-	-	(1,712)	(1,712)	(1,712)
Sub-total	42,022	17,614	(15,383)	2,231	44,252	44,736	26,421	(27,593)	(1,172)	43,564	2,714	8,807	(12,210)	(3,402)	(688)
TOTAL ACADEMIC	111,759	35,157	(26,478)	8,680	120,438	125,862	51,366	(38,153)	13,213	139,076	14,104	16,208	(11,675)	4,534	18,637
3. Academic Support															
Office of the Provost	7,253	(487)	(715)	(1,202)	6,051	9,360	(1,415)	(270)	(1,685)	7,675	2,107	(928)	445	(483)	1,624
Museum of Art	(0)	2	-	2	1	(29)	58	(30)	28	(1)	(29)	56	(30)	26	(3)
MacPherson Institute	2,069	(551)	(115)	(666)	1,403	2,926	(591)	(37)	(628)	2,298	857	(40)	78	38	896
University Library	473	(496)	(50)	(546)	(73)	379	(231)	44	(187)	192	(93)	265	93	358	265
Health Sciences Library	106	(340)	-	(340)	(233)	37	(393)	-	(393)	(356)	(69)	(53)	-	(53)	(123)
Registrar	704	(55)	(340)	(396)	309	1,366	(313)	(49)	(362)	1,004	662	(258)	291	33	695
Sub-total	10,605	(1,927)	(1,220)	(3,147)	7,458	14,040	(2,885)	(342)	(3,228)	10,812	3,435	(958)	878	(81)	3,354
4. Research Support															
Research	797	(259)	-	(259)	538	2,112	(1,252)	17	(1,236)	877	1,316	(994)	17	(977)	338
VP Research Discretionary Fund	(39)	122	-	122	82	2	191	(121)	70	73	42	70	(121)	(51)	(9)
Research Loans	(743)	89	-	89	(654)	(743)	89	-	89	(654)	0	0	-	0	0
Sub-total	14	(48)	-	(48)	(34)	1,372	(972)	(104)	(1,077)	295	1,358	(924)	(104)	(1,028)	329
5. Student Support															
Graduate Scholarships	1,164	(1,147)	-	(1,147)	17	1,479	(1,076)	-	(1,076)	403	315	71	-	71	386
School of Graduate Studies	164	1	(130)	(129)	35	301	(345)	-	(345)	(43)	137	(346)	130	(216)	(79)
Student Affairs	(1,467)	(339)	(15)	(354)	(1,820)	2,835	(1,199)	315	(884)	1,951	4,302	(861)	330	(531)	3,771
DBAC Building Financing	234	758	-	758	992	291	(291)	-	(291)	(0)	57	(1,049)	-	(1,049)	(992)
DBAC Deferred Maintenance	2,281	160	-	160	2,441	2,381	160	-	160	2,541	100	(0)	-	(0)	100
Undergraduate Scholarships	(12)	(849)	850	1	(12)	103	(1,412)	1,562	150	253	116	(563)	712	149	265
Sub-total	2,365	(1,417)	705	(712)	1,653	7,391	(4,163)	1,877	(2,286)	5,105	5,026	(2,747)	1,172	(1,575)	3,452
6. Facilities Support															
Facilities Services	366	236	(83)	153	519	985	(534)	(36)	(571)	414	618	(770)	46	(724)	(105)
HSC Maintenance	(0)	(0)	-	(0)	(0)	(85)	(275)	275	(0)	(85)	(85)	(275)	275	(0)	(85)
Utilities	(147)	(364)	-	(364)	(511)	4,364	(577)	(2,430)	(3,007)	1,357	4,510	(212)	(2,430)	(2,642)	1,868
Security	781	(184)	(40)	(224)	557	863	(361)	50	(311)	552	82	(177)	90	(87)	(5)
Deferred Maintenance	(0)	0	0	0	(0)	(0)	(0)	-	(0)	(0)	0	(0)	(0)	(0)	0
Bond Interest	(0)	-	-	-	(0)	(1)	(0)	0	(0)	(1)	(0)	(0)	0	(0)	(0)
Renovation contingency	0	-	-	0	0	952	0	-	952	952	952	0	-	952	952
Sub-total	1,001	(313)	(123)	(436)	565	7,078	(1,747)	(2,141)	(3,888)	3,189	6,077	(1,434)	(2,019)	(3,453)	2,624
7. Institutional Support															
Administration	6,272	(268)	(3,705)	(3,972)	2,300	5,811	(314)	(2,535)	(2,849)	2,962	(461)	(46)	1,169	1,123	662
UTS/Technology Fund	1,428	(1,280)	893	(387)	1,041	1,274	(2,077)	1,526	(550)	724	(154)	(796)	633	(163)	(317)
UTS Asset Management	12	5	0	5	17	(10)	(1,016)	500	(516)	(526)	(21)	(1,021)	500	(521)	(542)
University Secretariat	219	(0)	-	(0)	218	248	43	(77)	(34)	213	29	43	(77)	(34)	(5)
Presidential Budget	1,840	(0)	-	(0)	1,840	2,144	82	-	82	2,226	303	82	-	82	385
University Advancement	551	(358)	-	(358)	193	1,338	(79)	-	(79)	1,259	787	280	-	280	1,066
General University	0	(783)	800	17	17	87	(1,623)	1,537	(86)	0	86	(840)	737	(103)	(17)
Sub-total	10,322	(2,685)	(2,011)	(4,696)	5,626	10,891	(4,984)	952	(4,032)	6,859	569	(2,299)	2,963	664	1,233
8. Institutional Priority allocations															
Technology Renewal	(25,800)	-	4,517	4,517	(21,283)	(25,800)	-	4,517	4,517	(21,283)	-	-	-	-	-
Marketing & Branding	414	(413)	-	(413)	1	1,872	(768)	(0)	(768)	1,103	1,458	(356)	(0)	(356)	1,102
Pension	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strategic Priorities	(0)	-	-	-	(0)	(7)	7	-	7	0	(7)	7	-	7	0
Sub-total	(25,386)	(413)	4,517	4,104	(21,282)	(23,936)	(761)	4,517	3,756	(20,180)	1,450	(348)	(0)	(348)	1,102
Surplus/(Deficit)	110,679	28,355	(24,610)	3,745	114,423	142,698	35,853	(33,395)	2,458	145,155.809	32,019	7,498	(8,785)	(1,287)	30,732
Under/(over)allocated	0	4,517	(4,517)	0	0	(0)	4,517	(4,517)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Total Surplus/(Deficit)	110,679	32,872	(29,127)	3,745	114,423	142,698	40,370	(37,912)	2,458	145,156	32,019	7,498	(8,785)	(1,287)	30,732

Table 28: Operating Fund Budget and Plan Financial Position by Unit

($ thousands)	Appropriations April 30, 2019	2019/20 Budget On-going	One-time	Total	Appropriations April 30, 2020	2020/21 Plan On-going	One-time	Total	Appropriations April 30, 2021	2021/22 Plan On-going	One-time	Total	Appropriations April 30, 2022
1. Faculties													
Business	3,699	4,954	(4,530)	424	4,123	7,867	(7,000)	867	4,990	10,654	(7,000)	3,654	8,645
Engineering	22,661	(2,939)	(3,828)	(6,767)	15,894	(4,378)	(2,643)	(7,020)	8,873	(1,072)	(2,375)	(3,447)	5,426
Health Sciences	42,657	(9,370)	779	(8,591)	34,066	(15,595)	440	(15,156)	18,910	(21,312)	65	(21,247)	(2,336)
Humanities	1,647	(2,214)	2,707	493	2,140	(2,213)	2,239	25	2,165	(857)	1,673	816	2,981
Science	18,742	(3,023)	(4,087)	(7,110)	11,632	(677)	(615)	(1,292)	10,340	1,803	75	1,878	12,218
Medical Radiation - Mohawk share	0	-	-	-	0	-	-	-	0	-	-	-	0
Social Sciences	4,590	(2,068)	1,624	(443)	4,147	(1,214)	814	(400)	3,747	(142)	648	505	4,253
Arts & Science	1,516	(101)	57	(44)	1,472	(148)	57	(91)	1,381	(184)	57	(127)	1,254
Sub-total	**95,512**	**(14,760)**	**(7,277)**	**(22,038)**	**73,474**	**(16,358)**	**(6,708)**	**(23,066)**	**50,408**	**(11,110)**	**(6,857)**	**(17,967)**	**32,441**
2. Academic Priorities													
University Fund	40,673	10,406	(27,800)	(17,394)	23,278	21,000	(26,000)	(5,000)	18,278	23,000	(28,000)	(5,000)	13,278
Revenue Projection Contingency	4,563	4,305	-	4,305	8,868	7,305	-	7,305	16,173	10,305	-	10,305	26,478
Ongoing Priorities Contingency	40	5,030	-	5,030	5,070	5,029	-	5,029	10,099	5,029	-	5,029	15,128
One-time Priorities Contingency	(1,712)	10,000	(9,382)	618	(1,094)	10,000	(8,906)	1,094	-	10,000	(10,000)	-	-
Sub-total	**43,564**	**29,740**	**(37,182)**	**(7,442)**	**36,122**	**43,334**	**(34,906)**	**8,428**	**44,550**	**48,334**	**(38,000)**	**10,334**	**54,884**
TOTAL ACADEMIC	**139,076**	**14,980**	**(44,459)**	**(29,479)**	**109,596**	**26,976**	**(41,614)**	**(14,638)**	**94,958**	**37,224**	**(44,857)**	**(7,633)**	**87,326**
3. Academic Support													
Office of the Provost	7,675	(1,365)	(198)	(1,564)	6,111	(1,507)	(141)	(1,649)	4,462	(1,704)	(10)	(1,714)	2,748
Museum of Art	(1)	80	-	80	79	7	-	7	86	(12)	-	(12)	74
MacPherson Institute	2,298	(520)	(92)	(612)	1,686	(491)	(98)	(589)	1,098	(462)	(97)	(559)	538
University Library	192	(505)	178	(327)	(135)	(716)	-	(716)	(851)	(1,441)	-	(1,441)	(2,293)
Health Sciences Library	(356)	(6)	356	350	(6)	(179)	-	(179)	(184)	(390)	-	(390)	(574)
Registrar	1,004	(334)	(198)	(532)	472	(333)	(103)	(435)	36	(515)	-	(515)	(478)
Sub-total	**10,812**	**(2,651)**	**46**	**(2,605)**	**8,207**	**(3,218)**	**(342)**	**(3,560)**	**4,647**	**(4,524)**	**(108)**	**(4,631)**	**15**
4. Research Support													
Research	877	(972)	965	(7)	870	(1,291)	(40)	(1,331)	(462)	(1,598)	-	(1,598)	(2,060)
VP Research Discretionary Fund	73	141	-	141	213	438	-	438	652	989	-	989	1,641
Research Loans	(654)	89	-	89	(566)	89	-	89	(477)	89	-	89	(388)
Sub-total	**295**	**(743)**	**965**	**222**	**517**	**(764)**	**(40)**	**(804)**	**(287)**	**(520)**	**-**	**(520)**	**(807)**
5. Student Support													
Graduate Scholarships	403	(869)	-	(869)	(466)	(890)	-	(890)	(1,356)	(914)	-	(914)	(2,270)
School of Graduate Studies	(43)	(396)	-	(396)	(439)	(412)	-	(412)	(851)	(419)	-	(419)	(1,270)
Student Affairs	1,951	(1,622)	1,761	139	2,090	(1,810)	800	(1,010)	1,079	(2,051)	150	(1,901)	(821)
DBAC Building Financing	(0)	-	-	-	(0)	(1,658)	-	(1,658)	(1,658)	(2,144)	-	(2,144)	(3,802)
DBAC Deferred Maintenance	2,541	160	-	160	2,701	300	-	300	3,001	420	-	420	3,421
Undergraduate Scholarships	253	(1,000)	1,000	0	253	-	-	-	253	-	-	-	253
Sub-total	**5,105**	**(3,727)**	**2,761**	**(966)**	**4,139**	**(4,470)**	**800**	**(3,670)**	**469**	**(5,107)**	**150**	**(4,957)**	**(4,489)**
6. Facilities Support													
Facilities Services	414	41	-	41	455	(279)	-	(279)	176	(530)	-	(530)	(354)
HSC Maintenance	(85)	(0)	85	85	(0)	(0)	-	(0)	(0)	(0)	-	(0)	(1)
Utilities	1,357	932	-	932	2,289	(737)	-	(737)	1,552	(1,004)	-	(1,004)	548
Security	552	(256)	(5)	(261)	291	(249)	100	(149)	142	(256)	-	(256)	(115)
Deferred Maintenance	(0)	-	-	-	(0)	-	-	-	(0)	-	-	-	(0)
Bond Interest	(1)	0	0	0	(1)	-	-	-	(1)	-	-	-	(1)
Renovation contingency	952	0	-	0	952	0	-	0	952	0	-	0	952
Sub-total	**3,189**	**717**	**80**	**797**	**3,986**	**(1,266)**	**100**	**(1,166)**	**2,820**	**(1,791)**	**-**	**(1,791)**	**1,030**
7. Institutional Support													
Administration	2,962	85	(814)	(729)	2,233	253	(891)	(637)	1,596	(154)	(500)	(654)	942
UTS/Technology Fund	724	(1,760)	1,034	(727)	(3)	(2,697)	936	(1,761)	(1,765)	(2,745)	500	(2,245)	(4,010)
UTS Asset Management	(526)	(88)	-	(88)	(614)	(340)	-	(340)	(954)	(253)	-	(253)	(1,207)
University Secretariat	213	25	(11)	14	227	4	-	4	231	(16)	-	(16)	215
Presidential Budget	2,226	14	-	14	2,240	14	-	14	2,254	14	-	14	2,268
University Advancement	1,259	(360)	-	(360)	899	(503)	-	(503)	395	(395)	-	(395)	(0)
General University	0	86	-	86	86	(231)	-	(231)	(145)	(372)	-	(372)	(517)
Sub-total	**6,859**	**(1,999)**	**208**	**(1,791)**	**5,067**	**(3,500)**	**45**	**(3,455)**	**1,612**	**(3,921)**	**0**	**(3,921)**	**(2,309)**
8. Institutional Priority allocations													
Technology Renewal	(21,283)	-	4,517	4,517	(16,766)	-	4,517	4,517	(12,249)	-	4,517	4,517	(7,732)
Marketing & Branding	1,103	(600)	-	(600)	503	(503)	-	(503)	0	0	-	0	0
Pension	-	-	-	-	-	-	-	-	-	-	-	-	-
Strategic Priorities	0	-	-	-	0	-	-	-	0	-	-	-	0
Sub-total	**(20,180)**	**(600)**	**4,517**	**3,917**	**(16,263)**	**(503)**	**4,517**	**4,014**	**(12,249)**	**0**	**4,517**	**4,517**	**(7,732)**
Surplus/(Deficit)	**145,156**	**5,976**	**(35,882)**	**(29,906)**	**115,250**	**13,255**	**(36,534)**	**(23,279)**	**91,970**	**21,362**	**(40,298)**	**(18,936)**	**73,034**
Under/(over)allocated	(0)	4,517	(4,517)	0	(0)	4,517	(4,517)		(0)	4,517	(4,517)		(0)
Total Surplus/(Deficit)	**145,156**	**10,493**	**(40,399)**	**(29,906)**	**115,250**	**17,772**	**(41,051)**	**(23,279)**	**91,970**	**25,879**	**(44,815)**	**(18,936)**	**73,034**

APPENDIX 4 – ANCILLARY FUND UNIT LEVEL TABLES

($ thousands)	Campus Store		Media Production		Parking		CCE		Hospitality		Housing & Conference		Total	
	2018/19 Projection	2019/20 Budget	2018/19 Projection	2019/20 Budget	2018/19 Projection	2019/20 Budget	2018/19 Projection	2019/20 Budget	2018/19 Projection	2019/20 Budget	2018/19 Projection	2019/20 Budget	2018/19 Projection	2019/20 Budget
Sources of funding														
Sales	15,121	14,753	388	380	5,856	5,955	6,685	7,070	25,684	28,456	27,830	32,765	81,565	89,378
Internal revenue	(70)	(72)	3,900	4,100	16	15	720	720	1,632	1,665	(65)	(66)	6,134	6,361
Total sources of funding	**15,051**	**14,681**	**4,288**	**4,480**	**5,872**	**5,969**	**7,405**	**7,790**	**27,316**	**30,121**	**27,765**	**32,698**	**87,698**	**95,740**
Expenditure														
Salaries, wages and benefits	2,524	2,743	1,528	1,749	1,110	1,212	5,183	5,311	12,212	12,853	7,425	8,574	29,981	32,442
Cost of sales	10,878	10,345	1,353	1,447	-	-	-	-	9,202	10,251	0	-	21,432	22,043
Internal rent	497	465	142	138	30	30	479	479	1,085	1,086	3,421	3,438	5,654	5,636
Utilities and maintenance	15	15	34	34	322	184	11	11	703	721	3,188	3,696	4,273	4,661
Debt and financing charges	-	28	-	14	1,891	1,657	-	-	135	135	3,053	5,827	5,079	7,661
Equipment and renovations	220	230	700	725	1,485	810	244	253	1,327	2,157	6,187	6,442	10,163	10,617
All other expenses	345	345	135	167	1,571	1,513	1,953	1,850	2,510	2,712	3,010	3,408	9,525	9,995
Total expenditures	**14,478**	**14,172**	**3,892**	**4,274**	**6,410**	**5,406**	**7,870**	**7,903**	**27,174**	**29,914**	**26,284**	**31,385**	**86,108**	**93,055**
Surplus (deficit) from operations	**573**	**509**	**396**	**206**	**(537)**	**563**	**(465)**	**(113)**	**142**	**207**	**1,482**	**1,313**	**1,591**	**2,684**
Contribution to Operating Fund	**(207)**	**(216)**	**(132)**	**(171)**	**(236)**	**(262)**	**(315)**	**(323)**	**(1,139)**	**(1,244)**	**(1,175)**	**(1,225)**	**(3,204)**	**(3,441)**
Surplus (deficit)	**367**	**294**	**264**	**35**	**(774)**	**301**	**(781)**	**(437)**	**(997)**	**(1,037)**	**307**	**88**	**(1,613)**	**(757)**
Reserve														
Beginning Balance	(926)	(560)	(1,010)	(746)	1,828	1,054	3,201	2,420	5,232	4,235	2,647	2,954	10,971	9,358
Reserve Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surplus (deficit)	367	294	264	35	(774)	301	(781)	(437)	(997)	(1,037)	307	88	(1,613)	(757)
Closing Balance	**(560)**	**(266)**	**(746)**	**(711)**	**1,054**	**1,355**	**2,420**	**1,984**	**4,235**	**3,198**	**2,954**	**3,041**	**9,358**	**8,601**

APPENDIX 5 – SUMMARY BY FUND

Table 29: Consolidated 2018/19 Projection by Fund

($ thousands)

	Operating Fund	Research Fund	Capital Fund	External Endowment	Internal Endowment	Ancillary Fund	Externally Funded	Total	GAAP Adjustment	Full Accrual Basis
Revenues										
Operating grants	235,016	-	3,562	-	-	-	-	238,578	33,904	272,482
Research grants and contracts	-	195,000	-	-	-	-	-	195,000	(21,541)	173,459
Tuition fees	327,272	-	-	-	-	-	-	327,272	14,000	341,272
Ancillary sales and services	-	-	-	-	-	81,565	-	81,565	(2,911)	78,654
Other revenues	133,394	-	21,372	6,214	99	-	34,595	195,674	(553)	195,121
Amortization of deferred capital contributions									45,812	45,812
Investment income (loss)	8,380	-	-	21,750	6,560	-	-	36,690	18,730	55,420
Investment income transfer	4,521	-	-	-	(4,521)	-	-	-	-	-
Total revenues	**708,583**	**195,000**	**24,934**	**27,964**	**2,138**	**81,565**	**34,595**	**1,074,779**	**87,441**	**1,162,220**
Expenses										
Salaries, wages and benefits	473,605	110,000	-	-	-	29,981	24,489	638,075	14,070	652,145
All other expenses	195,206	75,000	137,538	2,640	-	31,778	12,256	454,419	(148,397)	306,022
Amortization expense									82,349	82,349
Transfers to (from) other funds	14,690	(16,434)	(34,907)	19,876	534	16,339	(99)	(0)		0
Debt and financing charges	22,623	-	(9,819)	-	-	5,079	-	17,883	(4,644)	13,239
Total expenses	**706,125**	**168,566**	**92,812**	**22,516**	**534**	**83,178**	**36,646**	**1,110,377**	**(56,622)**	**1,053,755**
Excess of revenues over expenses	**2,458**	**26,434**	**(67,878)**	**5,448**	**1,604**	**(1,613)**	**(2,051)**	**(35,599)**	**144,064**	**108,465**

Table 30: Consolidated 2019/20 Budget by Fund

($ thousands)

	Operating Fund	Research Fund	Capital Fund	External Endowment	Internal Endowment	Ancillary Fund	Externally Funded	Total	GAAP Adjustment	Full Accrual Basis
Revenues										
Operating grants	235,868	-	3,520	-	-	-	-	239,388	34,140	273,528
Research grants and contracts	-	197,000	-	-	-	-	-	197,000	(20,939)	176,061
Tuition fees	326,962	-	-	-	-	-	-	326,962	12,000	338,962
Ancillary sales and services	-	-	-	-	-	89,378	-	89,378	(9,151)	80,227
Other revenues	133,478	-	9,650	2,721	100	-	32,987	178,936	20,338	199,274
Amortization of deferred capital contributions									45,743	45,743
Investment income (loss)	7,078	-	-	28,838	8,696	-	-	44,612	17,840	62,452
Investment income transfer	5,556	-	-	-	(5,556)	-	-	-	-	-
Total revenues	**708,942**	**197,000**	**13,170**	**31,559**	**3,240**	**89,378**	**32,987**	**1,076,276**	**99,971**	**1,176,247**
Expenses										
Salaries, wages and benefits	496,875	111,000	-	-	-	32,442	23,715	664,032	22,385	686,417
All other expenses	211,595	75,000	192,126	3,745	53	32,815	10,352	525,686	(199,225)	326,461
Amortization expense									88,181	88,181
Transfers to (from) other funds	12,158	(14,346)	(35,012)	19,619	540	17,218	(176)	-	-	-
Debt and financing charges	18,220	-	(12,096)	-	-	7,661	-	13,785	954	14,739
Total expenses	**738,848**	**171,654**	**145,018**	**23,364**	**593**	**90,135**	**33,891**	**1,203,503**	**(87,705)**	**1,115,798**
Excess of revenues over expenses	**(29,906)**	**25,346**	**(131,848)**	**8,195**	**2,647**	**(757)**	**(904)**	**(127,227)**	**187,676**	**60,449**

Appendix 5 – Summary by Fund

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Table 31: Consolidated 2020/21 Plan by Fund

($ thousands)

	Operating Fund	Research Fund	Capital Fund	External Endowment	Internal Endowment	Ancillary Fund	Externally Funded	Total	GAAP Adjustment	Full Accrual Basis
Revenues										
Operating grants	235,544	-	3,520	-	-	-	-	239,064	34,135	273,199
Research grants and contracts	-	199,000	-	-	-	-	-	199,000	(20,298)	178,702
Tuition fees	351,173	-	-	-	-	-	-	351,173	12,000	363,173
Ancillary sales and services	-	-	-	-	-	91,039	-	91,039	(9,007)	82,032
Other revenues	130,863	-	14,150	2,669	100	-	32,477	180,259	38,986	219,245
Amortization of deferred capital contributions									44,594	44,594
Investment income (loss)	3,859	-	-	29,322	8,852	-	-	42,033	22,446	64,479
Investment income transfer	5,608	-	-	-	(5,608)	-	-	-	-	-
Total revenues	**727,047**	**199,000**	**17,670**	**31,991**	**3,344**	**91,039**	**32,477**	**1,102,568**	**122,856**	**1,225,424**
Expenses										
Salaries, wages and benefits	511,905	112,000	-	-	-	32,243	23,135	679,283	32,114	711,397
All other expenses	207,477	75,000	137,635	5,717	108	33,029	9,599	468,565	(135,607)	332,958
Amortization expense									96,000	96,000
Transfers to (from) other funds	9,539	(14,026)	(31,684)	18,245	550	17,377	-	-	-	-
Debt and financing charges	21,405	-	(15,006)	-	-	8,003	-	14,402	1,835	16,237
Total expenses	**750,326**	**172,974**	**90,945**	**23,962**	**658**	**90,652**	**32,734**	**1,162,251**	**(5,659)**	**1,156,592**
Excess of revenues over expenses	**(23,279)**	**26,026**	**(73,275)**	**8,029**	**2,686**	**387**	**(257)**	**(59,683)**	**128,515**	**68,832**

Table 32: Consolidated 2021/22 Plan by Fund

($ thousands)

	Operating Fund	Research Fund	Capital Fund	External Endowment	Internal Endowment	Ancillary Fund	Externally Funded	Total	GAAP Adjustment	Full Accrual Basis
Revenues										
Operating grants	235,360	-	3,520	-	-	-	-	238,880	34,128	273,008
Research grants and contracts	-	201,000	-	-	-	-	-	201,000	(19,618)	181,382
Tuition fees	376,611	-	-	-	-	-	-	376,611	12,000	388,611
Ancillary sales and services	-	-	-	-	-	93,632	-	93,632	(9,754)	83,878
Other revenues	128,633	-	54,750	2,495	100	-	32,401	218,379	5,991	224,370
Amortization of deferred capital contributions									43,737	43,737
Investment income (loss)	3,717	-	-	29,795	9,010	-	-	42,522	23,913	66,435
Investment income transfer	5,750	-	-	-	(5,750)	-	-	-	-	-
Total revenues	**750,071**	**201,000**	**58,270**	**32,290**	**3,360**	**93,632**	**32,401**	**1,171,024**	**90,397**	**1,261,421**
Expenses										
Salaries, wages and benefits	525,618	113,000	-	-	-	32,970	23,227	694,815	42,511	737,326
All other expenses	214,008	75,000	107,601	6,511	165	33,298	9,547	446,130	(140,245)	305,885
Amortization expense									142,774	142,774
Transfers to (from) other funds	7,975	(12,907)	(30,718)	18,386	560	16,704	-	-	-	-
Debt and financing charges	21,405	-	(16,456)	-	-	8,304	-	13,253	2,941	16,194
Total expenses	**769,007**	**175,093**	**60,427**	**24,897**	**725**	**91,275**	**32,774**	**1,154,198**	**47,981**	**1,202,179**
Excess of revenues over expenses	**(18,936)**	**25,907**	**(2,157)**	**7,393**	**2,635**	**2,357**	**(373)**	**16,826**	**42,416**	**59,242**

APPENDIX 6 – SIGNIFICANT ACCOUNTING POLICIES

The University's audited financial statements are prepared in accordance with Canadian accounting standards for not-for-profit organizations in Part III of the Chartered Professional Accountant (CPA) Canada Handbook. A summary of the significant accounting policies follows:

1)   Revenue recognition: The University follows the deferral method of accounting for contributions which include donations and government grants. The principles under this method are summarized as follows:

- Unrestricted contributions are recognized as revenue when received or receivable if the amount to be received can be reasonably estimated and collection is reasonably assured.

- Contributions externally restricted for purposes, such as research grants and non-endowed donations, are deferred and recognized as revenue in the year in which the related expenses are recognized.

- Contributions externally restricted for capital asset purchases are deferred and amortized to operations on the same basis as the related capital asset.

- External endowment contributions and investment income preserved under the endowment capital protection policy are recognized as a direct increase in endowment net assets.

2)   Capital assets and amortization: Capital assets are recorded at cost, or if donated, at fair value on the date of receipt. Amortization is recorded on the straight-line basis over the expected life of the asset.

Collections and works of art: The McMaster Museum of Art has significant collections of works of art and coins. Donations of works of art are recorded in operations in the year of acquisition.

3)   Pensions and other employee future benefits: The University maintains defined benefit registered and non-registered pension plans, a retirement incentive program and group registered retirement savings plans. Non-pension post-retirement and post-employment benefits plans are also provided. Accruals for these costs are recorded over the periods of service. An actuarial accounting valuation is performed annually at the University's year-end to update the liabilities related to the pension and non-pension obligations. The valuation uses management's estimates of investment yields, salary escalation, health care trend rates and other factors. The assumptions are consistent with those used for the tri-annual registered pension plan valuations.

- Re-measurement and other items are recognized as a direct increase (decrease) to net assets and are not reclassified to the statement of operations in subsequent periods. Re-measurement and other items comprise the aggregate of: the difference between the actual return on plan assets and the return calculated using the discount rate used to determine the defined benefit obligation; the actuarial gains and losses; the effect of any valuation allowance in the case of a net defined benefit asset; past service costs; and any gains and losses arising from settlements and curtailments.

- The employer's share of group RRSP contributions is charged to operations in the year made.

4)   Investments: Short-term investments are recorded at cost plus accrued income which together approximates fair value. Long-term investments are carried at fair values. Changes in fair value are included in investment income.

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APPENDIX 7 – OPERATING FUND ENVELOPE GROUPINGS

Major areas and depts included in envelopes:

Activity Units

DeGroote School of Business
- Accounting and Financial Management
- Exective Education
- Finance and Business Economics
- Health Policy and Management
- Human Resources and Management
- Information Systems
- Marketing
- Operations Management
- Strategic Management
- Research Centres
- Digital Research Centre
- Gould Trading Floor
- Health Leadership Academy
- Investment Decision Centre
- Management of Innovation and Technology

Faculty of Engineering
- Chemical Engineering
- Civil Engineering
- Computing and Software
- Electrical and Computer Engineering
- Engineering Physics
- Materials Science and Engineering
- Mechanical Engineering
- School of Biomedical Engineering
- W. Booth School of Engineering Practice and Technology
- Research Centres
- ArcelorMittal Dofasco Centre for Engineering and Public Policy
- Centre for Effective Design of Structures
- Centre for Emerging Device Technologies
- Centre for Engineering Design
- Centre for Research in Micro- and Nano-systems
- Computing Infrastructure Research Centre
- McMaster Centre for Software Certification
- McMaster Institute for Energy Studies
- McMaster Manufacturing Research Institute
- McMaster Steel Research Centre
- Xerox Centre for Engineering Entrepreneurship and Innovation

Faculty of Health Sciences
- Anaesthesia
- Biochemistry & Biomedical Sciences
- Health Research Methods, Evidence, and Impact
- Health Policy
- Family Medicine
- Michael G. DeGroote School of Medicine
- Midwifery
- Obstetrics and Gynecology
- Oncology
- Pathology and Molecular Medicine
- Pediatrics
- Psychiatry and Behavioural Neurosciences
- Radiology
- Surgery
- School of Nursing
- School of Rehabilitation Science

Faculty of Humanities
- Classics
- Communication Studies and Multimedia
- English and Cultural Studies
- French
- Gender Studies and Feminist Research
- History
- Linguistics and Languages
- Peace Studies
- Philosophy
- School of the Arts
- Research Centres
- Bertrand Russell Research Centre
- Centre for Advanced Research in Experimental and Applied Linguistics

Faculty of Science
- Biology
- Chemistry and Chemical Biology
- Geography and Earth Sciences
- Kinesiology
- Mathematics and Statistics
- Physics and Astronomy
- Psychology, Neuroscience and Behaviour
- Research Centres
- Biointerfaces Institute
- McMaster Centre for Climate Change
- McMaster Institute for Music and the Mind
- Origins Institute

Faculty of Social Sciences
- Anthropology
- Economics
- Health, Aging and Society
- Indigenous Studies
- Labour Studies
- Political Science
- Religious Studies
- Social Work
- Sociology
- Research Centres
- Gilbrea Centre for Studies in Aging
- Institute on Globalization and the Human Condition
- Public Economics Data Analysis Laboratory

Arts & Science Program

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Support Units

Academic Support
Provost and Vice-President (Academic) Office
Equity and Inclusion Office
Health Policy and Management
Health Sciences Library
Institutional Research and Analysis
International Affairs
Museum of Art
Paul R. MacPherson Institute for Leadership, Innovation and
    Excellence in Teaching
Registrar's Office
University Library

Research Support
Research
    Vice-President (Research) Office
    Biosafety Committee
    Health Physics
    McMaster Industry Liaison Office
    Nuclear Reactor
    Research Ethics
    Research Finance
    Research High Performance Computing
    Research Office for Administration, Development and Support
Research Centres
    Accelerator Lab
    Brockhouse Institute for Material Research
    Interface: McMaster Institute for Multi-Hazard Systemic Risk Studies
    McMaster Indigenous Research Institute
    McMaster Institute for Healthier Environments
    McMaster Institute for Research on Aging
    McMaster Institute for Transportation and Logistics
    Statistics Canada Research Data Centre at McMaster
Vice-President (Research) Discretionary Fund

Student Support
School of Graduate Studies
Student Affairs
    Athletics and Recreation
    Career Planning and Employment
    Indigenous Student Services
    International Student Services
    Ombuds
    Student Accessibility Services
    Student Development
    Student Success Centre
    Student Wellness Centre
Graduate Scholarships
Undergraduate Scholarships

Facilities Support
Facility Services
Security
Utilities

Institutional Support
Administration
    Vice-President (Administration) Office
    Financial Affairs
    Human Resources
    Internal Audit
Advancement
    Advancement Services
    Alumni Advancement
    Communications and Public Affairs
    Development
    Stewardship and Donor Relations
    Vice-President (Advancement) Office
General University
Office of the President
University Secretariat
University Technology Services

Institutional Priorities
Marketing and Branding
Pension
Strategic Priorities
Technology Renewal

Appendix 7 – Operating Fund Envelope Groupings

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APPENDIX 8 – ACRONYMS

AFMC	Association of Faculties of Medicine Canada
AODA	Accessibility for Ontarios with Disabilities Act
AVIN	Autonomous Vehicle Innovation Network
CAP	Career Access Program
CCE	Center for Continuing Education
CEFRL	Common European Framework of Reference for Languages
CIMVHR	Canadian Institute for Military and Verteran Health Research
COG	Core Operating Grant
COU	Council for Ontario Universities
CPA	Chartered Professional Accountant
CRC	Canada Research Chair
CRKN	Canadian Research Knowledge Network
DB	Defined Benefit
DBRS	Dominion Bond Rating Service
DSB	Degroote School of Business
FWI	Forward with Integrity
GAAP	Generally accepted accounting principle
GCSP	Grand Challenge Scholars Program
H&CS	Housing and Conference Services
HR	Human Resources
HSL	Health Sciences Library
IEPI	Institute on Ethics for Policy and Innovation
IPG	Incremental Projects Grant
ISS	Indigenous Student Services
ISW	Instructional Skills Workshops
IT	Information Technology
MARC	McMaster Automotive Resource Centre
MBA	Master of Business Administration
MD	Medical Doctorate
MIRI	McMaster Indigenous Research Institute
MPS	Media Production Services
MTCU	Ministry of Training, Colleges and Universities
MUMC	McMaster Univeristy Medical Centre
NAE	National Academy of Engineering
OAPPA	Ontario Association of Physical Plant Administrators
OGS	Ontario Graduate Scholarship
OSAP	Ontario Student Access Program
PBGF	Pension Benefits Guarantee Fund
PfAD	Provision for adverse deviation
PGCLL	Peter George Centre for Living and Learning
PRB	Post-retirement benefit
QS	Quacquarelli Symonds
RO	Office of the Registrar
RRSP	Registered Retirement Savings Plan
RSF	Research Support Fund
S&P	Standard & Poors
SAG	Student Access Guarantee
SMA	Strategic Manadate Agreement
SPICES	Student Proposals for Intellectual Community and Engages Scholarship
SRP	Strategic Research Plan
TRC	Truth and Reconciliation Commission of Canada
UA	University Advancement
UTS	University Technology Services
VPR	Vice-President Research
WGU	Weighted Grant Units

Appendix 8 – Acronyms

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REPORT TO SENATE

FROM THE

COMMITTEE ON APPOINTMENTS

Open Session

a.   Recommendations of the Drafting Committee to Review Material Provided to External Referees for Promotion of Teaching-Stream Faculty

In December 2017, Senate was presented with the recommendations of the Drafting Committee to Review Material Provided to External Referees for Promotion of Teaching-Stream Faculty. The recommendations were referred back to the Committee on Appointments for amendments to SPSB8, Policy for Referees – Teaching-Stream Faculty. SPS B8 was later presented and approved at Senate in April 2018. The recommendations of the Drafting Committee for revisions to the Tenure and Promotion Policy and to SPS B5 and SPS B12 were not brought back to Senate for approval.

The Committee on Appointments is now recommending approval of the remaining amendments.

The Committee on Appointments now recommends:

> **"that the Senate approve, for recommendation to the Board of Governors, revisions to the 'McMaster University Revised Policy and Regulations With Respect to Academic Appointment, Tenure and Promotion (2012)' and to Supplementary Policy Statements B5 and B12, as set out in the attached report of the Drafting Committee to Review Material Provided to External Referees for Promotion of Teaching-Stream Faculty."**

Senate: For Approval
June 5, 2019

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Report of the

**<u>Drafting Committee to Review Material Provided to External Referees for
Promotion of Teaching-Stream (Permanent) Faculty</u>**

Revised 2017 10 23

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Members of the Committee:

Lori Campbell	Associate Professor, Sociology and Health, Aging and Society; Associate Dean (Academic), Faculty of Social Sciences
Carolyn Eyles	Professor, Interdisciplinary Science; Geography and Earth Sciences
Joe Kim	Associate Professor, Psychology, Neuroscience and Behaviour
Michelle MacDonald	Associate Professor, Biochemistry and Biomedical Sciences
John Medcof (Chair)	Professor, Human Resources and Management; Associate Dean, Faculty Affairs and Accreditation, School of Business
Briana Palmer	Assistant Professor, School of the Arts

University Secretariat:

Helen Ayre	University Secretary and Privacy Officer
Susan Welstead	Governance Advisor and Assistant University Secretary

The committee met on April 20, June 15 and June 20. Dr. Medcof was elected Chair of the committee at the April 20 meeting. A draft report was prepared after the June 20 meeting then edited and approved by email. The Committee's report, dated 2017 06 28, was submitted to the University Secretariat. Dr. Medcof met with the Senate Committee on Appointments on 2017 09 18, and Dr. Medcof and Dr. Campbell met with the McMaster University Faculty Association Executive on 2017 10 03 to discuss the report. As a result of these meetings, the report has been revised to this 2017 10 23 version, which has been approved by the Drafting Committee.

The mandate of the committee is given in a letter of February 27, 2017; from Dr. Brenda Vrkljan, Chair, Senate Committee on Appointments, to Dr. Martin Horn, President, McMaster University Faculty Association. It states three principal points for consideration:

1. What material should be provided to external referees in teaching track promotion cases?
2. Should external referees be asked to comment on the teaching record of candidates?
3. "…review those SPS that outline the process for soliciting the views of external referees for the promotion of teaching stream faculty and to recommend revisions to that process, if considered necessary."

1. <u>Materials to be provided to external referees in teaching track promotion cases</u>

The material currently sent to referees is itemized in SPS B5 section IV. For teaching track cases it includes: (1) the CV, (2) "…a statement by the candidate on his/her pedagogical

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research/scholarship, such a statement not to exceed two pages in length (see item 3b, SPS B12)" and (3) the "Policy for Referees" (SPS B7 or B8, as appropriate).

The committee agreed that the CV should continue to be included because it provides succinct, standardized information which is useful in promotion cases.

However, given the variation across faculties, departments and individuals that is found in the activities of productive teaching-stream faculty, the CV may not provide the richness of information necessary for effective evaluation of teaching-stream cases. Members of the committee who have been external referees for candidates at other universities have found documents similar to McMaster's teaching portfolio to be very helpful. The committee considered whether the whole portfolio might be cumbersome for externals and that it might be overwhelming in the quantity of information it provides. Based on committee members' experiences with portfolios from other universities, our conclusion is that if the portfolio is presented electronically with appropriate structure these possible problems need not be significant. The portfolio provides a depth of information, can be easy to navigate, and information can be selected for review. The committee recommends that for teaching-stream promotions the complete teaching portfolios (Parts A and B) be provided to external referees.

The second item to be sent to externals, the, "statement by the candidate on his/her pedagogical research/scholarship, such a statement not to exceed two pages in length", also has shortcomings for teaching-stream cases. As it stands, it is easy to interpret this narrowly as asking only about research in pedagogy published in peer reviewed journals, analogous to what is required of tenure-stream faculty. Given the variation in how teaching-stream faculty make their contributions, and the danger of narrow interpretation, the committee recommends that a two-page statement from the candidate be included but that its scope be broadened.

Recommendation 1
That SPS B5, Section IV, Item 3, be amended to the following:
" 3. in the case of promotion considerations for teaching-stream faculty:
   a. **Candidate's statement** on his/her pedagogical contributions, not to exceed two pages.
   b. **Candidate's teaching portfolio**, parts A and B, as described in SPS B2."

2. Should external referees be asked to comment on the teaching record of candidates?

This is the second point mentioned in the mandate letter. Although acknowledging the logic for not asking externals to comment on candidates' teaching records, the committee believes that externals should be asked to consider teaching records. By definition, teaching-stream faculty are excellent teachers and should remain so throughout their careers, even while making additional contributions for promotion to Associate and Professor status. We understand that some externals have noted their discomfort at making evaluations when there is no indication of teaching record. Given the committee's Recommendation 1, to provide the teaching portfolio to externals, externals will have the information they need to evaluate teaching records

Recommendation 2
Externals should be asked to provide comments on the teaching records of candidates.

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3. "…review those SPS that outline the process for soliciting the views of external referees for the promotion of teaching stream faculty and to recommend revisions to that process, if considered necessary."

This third point from the mandate letter is very broad and might be interpreted to include the first two points. Be that as it may, the committee did focus on two other SPSs, B8 and B12.

SPS B8 Policy for Referees – Teaching-Stream Faculty
This is the document sent to external referees providing guidelines for their evaluations of candidates. The committee is recommending a number of changes to B8 which are consistent with the spirit of the current instructions, being refinements of them rather than contrary. The statements of the criteria for promotions are very brief and not as clear as they might be. The committee recommends additional criteria. "Continuing excellence in teaching practice" and "Adoption of the candidate's teaching innovations by others" have been added consistent with Recommendation 2 above. "Other relevant activities, such as leadership in experiential learning beyond the classroom." has been added to allow referees more scope in their comments. The wording of some criteria has been changed to give more clarity and emphasis to reputation beyond the department, nationally or internationally. It is made clear that candidates need to have reputations in ~~multiple~~ **two or more** areas of contribution but not necessarily in all.

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Recommendation 3
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That SPS B8 be amended to the version shown at the end of this Report.

SPS B12 Preparation of Dossiers for Reappointment, Tenure/Permanence and/or Promotion
SPS B12 is referred to in SPS B5 with respect to the Candidate's Statement. In B12 the Candidate's Statement is itemized as being Section 3 of the standard dossier for reappointment, tenure, permanence and/or promotion. A short description of what it should contain is provided. The committee believes that this statement suffers from the same shortcomings as that in the original SPS B5 and should be aligned with that in the revised B5. Further, in the description of Section 3 of the dossier on page 3 of SPS B12, the heading is, "3. Candidate's Statement on Research and/or Clinical Activities". This is not well suited for teaching-stream candidates.

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Recommendation 4
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That SPS B12, Section 3 Candidate's Statement, Item (b), be amended to the following
> "(b) Teaching-Stream: In the case of promotion assessments, the candidate should provide a statement on his/her pedagogical contributions, not to exceed two pages. This is the same statement that is sent to Referees (see SPS B5)."

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Recommendation 5
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That in SPS B12, Section 3, the title of the section be amended from "Candidate's Statement on Research and/or Clinical Activities" to "Candidate's Statement".

3

T&P Policies III (26) and III (27)
These two paragraphs are the source of the criteria statements in the current SPS B8 which is sent to external referees. The committee has recommended changes to SPS B8 creating an inconsistency between the two parts of the document which can be corrected with the following.

<u>**Recommendation 6**</u>
That T&P Policy items, III (26) and III (27) be amended to be consistent with the statements in SPS B8 recommended by the committee, as shown below.

26. For promotion to Associate Professor of a teaching-stream candidate, the criteria include not only excellence in teaching and satisfactory performance of University duties, but also evidence of recognition external to the Department for the candidate's teaching and/or teaching related contributions. Since performance of university duties will be evaluated within the university, external reviewers should consider the candidate's recognition external to the department in the following areas of activity. A candidate should have significant external recognition in ~~multiple~~ **two or more** areas, but not necessarily in all, in order to be worthy of promotion.

    1. Continuing excellence in teaching practice;
    2. Adoption of the candidate's teaching innovations by others;
    3. Curriculum development and/or evaluation (beyond the individual course);
    4. Presentations and scholarship on teaching or pedagogy;
    5. Mentoring of other teachers;
    6. Research on pedagogical and related issues;
    7. Other relevant activities, such as leadership in experiential learning beyond the classroom.

    Promotion to Associate Professor requires at least two references external to the Department or Program in which the candidate is employed, at least one of whom must be external to the University.

27. Promotion to Professor for a teaching-stream individual would be possible, although it is not expected to be the norm. Promotion to Professor requires, not only excellence in teaching and satisfactory performance of University duties, but also evidence of a national or international reputation for teaching and/or teaching related contributions, such as those listed for promotion to Associate Professor. Since performance of university duties will be evaluated within the university, external reviewers should consider the following indicators of national and/or international recognition. A candidate should have significant recognition in ~~multiple~~ **two or more** criteria but not necessarily in all, in order to be worthy of promotion.

    1. Significant teaching awards from bodies external to the home university;
    2. National and/or international adoption of the candidate's teaching innovations;
    3. National and/or international recognition of the candidate's curriculum development, mentoring, and other activities;

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4. Peer- reviewed and/or invited conference papers on pedagogy presented at national and/or international conferences;
5. Peer-reviewed publications in scholarly journals on teaching with national and/or international audiences;
6. Other relevant activities, such as leadership in experiential learning beyond the classroom.

Supporting letters from at least three referees external to the university are required. The letters should be obtained as described in clauses 13 – 16 above and in SPS B5.

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McMaster University

Policies, Procedures and Guidelines

Complete Policy Title: **Policy for Referees – Teaching-Stream Faculty**	Policy Number (if applicable): **SPS B8**
Approved by: **Senate** **Board of Governors**	Date of Most Recent Approval: **December 14, 2011** **December 15, 2011**
Date of Original Approval(s):	Supersedes/Amends Policy dated:
Responsible Executive: **Provost and Vice-President (Academic)**	Enquiries: University Secretariat

DISCLAIMER: *If there is a Discrepancy between this electronic policy and the written copy held by the policy owner, the written copy prevails*

McMaster University's *Policy and Regulations with respect to Academic Appointment, Tenure and Promotion* (Tenure and Promotion Policy)[1] states, "For a person appointed to a teaching-track position, promotion and permanence are not linked. Promotion may also happen, but is not expected to occur at the same time" [III 24] Members of the teaching-stream faculty who are being considered for promotion may, therefore, already have achieved permanence through an internal assessment process in their fifth or sixth year. Although external letters of reference are **not** required for permanence, if promotion to Associate Professor is being considered at the same time, at least two letters of reference on the promotion issue are required, as outlined below.

Promotion of an individual in a teaching-track position to Associate Professor must either accompany or follow a recommendation for permanence and requires "at least two referees external to the Department or Program in which the candidate is employed, at least one of whom must be external to the University."[III 26]

For promotion to Professor for a teaching-stream individual 'Supporting letters from at least three referees external to the University are required.'[III 27]

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[1] All Section and clause references [-] are to the Tenure and Promotion Policy

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In all instances, since care must be taken to ensure that the referees are at arm's length from the candidate, **if you have any connection with the candidate, please indicate the nature of the connection.**

The Tenure and Promotion Policy also contains the following comments about a candidate's contributions.

"For promotion to Associate Professor of a teaching-stream candidate, the criteria include not only excellence in teaching and satisfactory performance of University duties, but also evidence of recognition external to the Department for the candidate's teaching and/or teaching related contributions. Since performance of university duties will be evaluated within the university, external reviewers should consider the candidate's recognition external to the department in the following areas of activity. A candidate should have significant external recognition in ~~multiple~~ **two or more** areas, but not necessarily in all, in order to be worthy of promotion.

1. Continuing excellence in teaching practice;
2. Adoption of the candidate's teaching innovations by others;
3. Curriculum development and/or evaluation (beyond the individual course);
4. Presentations and scholarship on teaching or pedagogy;
5. Mentoring of other teachers;
6. Research on pedagogical and related issues;
7. Other relevant activities, such as leadership in experiential learning beyond the classroom.

[III 26]

"For promotion to Professor of a teaching-stream candidate, the criteria include not only excellence in teaching and satisfactory performance of University duties, but also evidence of a national or international reputation for teaching and/or teaching related contributions, such as those listed for promotion to Associate Professor. Since performance of university duties will be evaluated within the university, external reviewers should consider the following indicators of national and/or international recognition. A candidate should have significant recognition with respect to ~~multiple~~ **two or more** of these indicators, but not necessarily in all, in order to be worthy of promotion.

1. Significant teaching awards from bodies external to the home university;
2. National and/or international adoption of the candidate's teaching innovations;
3. National and/or international recognition of the candidate's curriculum development, mentoring, and other activities;
4. Peer- reviewed and/or invited conference papers on pedagogy presented at national and/or international conferences;
5. Peer-reviewed publications in scholarly journals on teaching with national and/or international audiences;
6. Other relevant activities, such as leadership in experiential learning beyond the classroom.

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[III, 27]

While you are asked to include in your report brief answers to each of the questions listed below, please feel free to make any other comments which you believe may assist the University in arriving at a decision.

1. Is there clear evidence of the candidate's continuing excellence in teaching?

2. Is there clear evidence of the recognition of the candidate's contributions to teaching practice and/or research beyond the department at the institutional level, and/or at the national or international level? In your opinion, how significant are these contributions?

3. Is the candidate's work of a sufficient quality to be acceptable for promotion in the context of the criteria detailed above? Please answer this question directly and clearly with elaboration.

Your letter will be regarded as confidential and will be made available only to the Department and Faculty Committees on Tenure and Promotion and to the Senate Committee on Appointments. However, a faculty member who is unsuccessful in this process will be provided with unattributed copies of the originals of any external letters of reference either by the Department Chair or the Chair of the Senate Committee on Appointments. Preparing an "unattributed copy" means removing the letterhead and the author's name; it also entails an obligation, on the part of the appropriate Chair, to go through the text and remove references which would directly or indirectly reveal the name of the writer.

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McMaster University

Office of the Provost and Vice-President (Academic)	1280 Main Street West Hamilton, Ontario, Canada L8S 4K1	Phone 905.525.9140 Ext. 24301 Fax 905.546.5213 Email provost@mcmaster.ca http://www.mcmaster.ca

DATE :   May 15, 2019

TO: Members of the Senate

FROM: David H. Farrar
                    Provost and Vice-President (Academic)

RE: Addition to the List of Senate Observers

I am seeking Senate's approval of my request that the position of <u>Manager, Faculty Appointments and Records</u>, in the Office of the Provost be added to the list of official Observers found in Schedule "A" of the Senate By-laws.

The Manager of Faculty Appointments and Records is responsible for administratively appointing all faculty to their primary and secondary positions, which requires awareness of the discussions and decisions related to these appointments and governing policies.

Because this would appear to be a straightforward matter that does not require the attention of the By-laws Committee, I further request that Senate waive that requirement and give final approval to the revision at this time.

The following motion is presented for Senate's consideration:

that Senate suspend Article XV, Section 175 of its By-laws and approve the addition of the Manager, Faculty Appointments and Records, in the Office of the Provost to the list of Observers found in Schedule "A" of the Senate By-laws.

Senate: FOR APPROVAL
June 5, 2019