

**AGENDA**

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## Policies, Procedures and Guidelines

Complete Policy Title

Policy Number (if applicable)

**Guidelines for the Governance and Review of  
Research Institutes, Centres and Groups**

Approved by

Date of Most Recent Approval

**Senate /  
Board of Governors**

~~**December 14, 2014**~~  
~~**December 15, 2014**~~

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Date of Original Approval(s)

Supersedes/Amends Policy dated

**May 17, 2005**

~~**November 14, 2007**~~

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Responsible Executive

Policy Specific Enquiries

**Vice-President (Research)**

Associate Vice-President (Research)

General Policy Enquiries

[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.*

## **PREAMBLE**

1. Excellence in research depends primarily on the efforts of our faculty members – efforts that may be amplified through, and participation in, a formal research organization. Such organizations allow faculty members to focus on the most pressing and demanding problems facing society, to pool their talents and resources, and to maximize institutional impact and output. They allow us to advance our strategic research objectives; to enhance research collaborations; to facilitate interdisciplinary research; to stimulate partnerships; to expand our research presence on the global stage; to increase our ability to secure funding for major research initiatives; and to strengthen the linkages between research and teaching.
2. Research organizations may be located within a single Department or Faculty, or may cut across such boundaries and have a multi-Faculty or University-wide mandate. They may vary in type and structure depending on their objective and the scope of their activities. Some will require formal governance structures. Those whose activities are closely aligned with the University's strategic objectives, and whose success and failure may have financial and reputational implications for the University must receive approval for establishment from the Senate and the Board of Governors in accordance with the provisions of this Policy. As such, a central feature of this Policy is the description of the process to establish Research Institutes and Centres. This Policy also provides Directors of Research Institutes and Centres with guidance regarding governance and reporting and review obligations to the University. Informal research organizations are also recognized, and these organizations will be referred to as Research Groups. Their formation and governance are flexible and not covered by this policy.
3. Where Research Institutes and Centres house significant research infrastructure, this policy should be viewed in conjunction with McMaster's Guidelines for the Governance and Review of Core Research Platforms.

## **CATEGORIES OF RESEARCH ORGANIZATION**

4. Research organizations fall into three categories: Institutes, Centres and Groups. At the outset of the process to establish a research organization, the prospective membership should consult with the relevant Faculty Dean(s) and/or the Vice-President, Research (VPR) to determine which category is appropriate. As research organizations evolve, the appropriate category may change. In such a case, research organizations should consider instigating a transition to a different category.

5. **Institutes**

Institutes are closely aligned with the strategic research interests of the University and play a critical role in advancing the University's research objectives. Their designation as an Institute is determined by virtue of one or more criteria which may include: comparative size; breadth of research; national and international impact of their work. In some cases, the membership of the Institute is predominantly based in a single Faculty and the Institute would thus report to the appropriate Faculty Dean. In others, the Institute will have membership spanning two or more Faculties and would report to the VPR or to the Dean of the most appropriate Faculty (in terms of membership or budgetary support). The success of the Institute will have significant implications for the University. Often, the Institute will be responsible for the operation and oversight of central research infrastructure. Some Institutes may be supported by major external funding.

6. **Centres**

Centres, like Institutes, support the strategic interests of the University, although their focus may be less broad and their operation may have smaller budgetary implications for the University. Research Centres normally report to the Dean of a Faculty, however in some cases a Centre will have membership spanning two or more Faculties. In this latter case, the Centre may report to the VPR or to the Dean of the most appropriate Faculty (in terms of membership or budgetary support). The Centre may be responsible for the operation and oversight of central research infrastructure. Some Centres may be supported by major external funding.

7. **Groups**

Groups are self-designated research organizations. They can be as small as two faculty members and their respective teams of highly qualified personnel. They may be expected to form, grow, and dissolve as members see fit. Their status, progress, and plans are not reported through the University's governing bodies.

**ROLES AND RESPONSIBILITIES**

8. **Vice-President (Research):** The Vice-President (Research) (VPR) is the senior academic leader responsible for oversight of McMaster's Research Institutes and Centres. In some cases, the VPR (or designate) may act as Chair of the Governing Board of a Research Centre or Institute.
9. **Dean:** When a Research Centre or Institute reports directly to a Faculty Dean, the Dean shall be responsible for the oversight of the research organization and provide information to the Vice-President (Research) to allow the latter to fulfill



their responsibilities. In this case, the Dean (or designate) is Chair of the Governing Board.

10. **Director:** A Research Institute or Centre is led by a Director who is appointed through the Senate Committee on Appointments, Senate, and Board of Governors for a fixed term, normally 5 years.
11. **Governing Board:** Each Research Institute or Centre is overseen by a Governing Board (GB). Authority for all matters regarding the direction and operation of the Research Institute or Centre rests with the GB.
12. **Advisory Committee:** The Advisory Committee (AC) will provide advice to the Director on scientific and scholarly priorities and strategic guidance for the Research Institute or Centre. The AC is consulted at least annually at the discretion of the Director.
13. **External Review Board:** An External Review Board (ERB) will assess the performance of the Institute and Director and the research which has taken place.
14. **Centre Review Board:** A Centre Review Board (CRB) will assess the performance of the Centre and Director and the research which has taken place.
15. **Committee on Research Institutes, Centres and Groups:** The Committee on Research Institutes, Centres and Groups (CRI) is responsible for reviewing proposals for the establishment of Research Institutes and Centres prior to submission to the University's governing bodies.

#### ESTABLISHMENT OF RESEARCH INSTITUTES AND CENTRES

16. **Establishment:**

The lead participants of a proposed Research Institute or Centre should prepare a proposal for submission to the relevant Dean or VPR as appropriate. The proposal is considered by the Committee on Research Institutes, Centres and Groups (CRI), which is constituted of the VPR (Chair), the Provost and Vice-President (Academic), the Dean of Graduate Studies, the University Secretary, and the Faculty Deans relevant to the proposed Institute or Centre. The Proposal should be developed using the McMaster template (made available from the Office of the VPR) and will normally include:

- i. The name, objectives, and proposed activities of the Institute or Centre.

- ii. A rationale for establishing the Institute or Centre.
  - iii. A list of participants and criteria for expanding the membership.
  - iv. A detailed business plan that includes the financial, space and human resource needs of the Institute or Centre. There must be an indication of the funding required to support the Institute or Centre, both initial start-up costs and the costs of on-going operations, and the internal and external sources of that funding.
  - v. A description of the Institute's or Centre's organizational structure, and its relationship (if any) with McMaster University affiliated hospitals or other institutions.
  - vi. An explanation as to why the Institute or Centre is consistent with the University's Strategic Research Plan.
17. If endorsed by the CRI, the proposal will be submitted to the University Planning Committee, who shall consider whether the proposal is consistent with the academic and research priorities of the University and whether the resource requirements and sources of funding have been appropriately considered. If endorsed by UPC, it will be recommended to the Senate and the Board of Governors for approval. The Research Institute or Centre will be formally established upon receiving the approval of the Board of Governors.
18. The University supports the integration of research and education. Research Institutes and Centres may be thus involved in the delivery of academic programs. The approval of such programs will follow the normal University procedures. Specifically, administration of academic programs must be carried out through the appropriate Dean or Associate Vice-President (Academic).

#### **GOVERNANCE AND REVIEW OF INSTITUTES AND CENTRES**

19. The University must be informed on the status, progress, and financial viability of Research Institutes and Centres. As such, the University's Research Institutes and Centres must adhere to general practices of good governance with reporting structures that seek expert national and international advice, and which ultimately inform the governing bodies as to their activities and standing within the international or national research community.
20. All Institutes, Centres and Groups are expected to adhere to the University's policies and procedures as established or amended from time to time. Ongoing University support for a Research Institute or Centre is not guaranteed.

21. Each Research Institute or Centre is overseen by a Governing Board (GB). The GB is normally chaired by the appropriate Dean (or designate) or by the VPR (or designate) and is composed of other participating Deans and/or Department Chairs (or designates) whose Faculties and Departments are most affected by the success or failure of the Institute or Centre. It may be appropriate that additional members of the GB are drawn from beyond the VPR, Deans and Chairs. Authority for all matters regarding the direction and operation of the Institute or Centre rests with the GB.
22. A Research Institute or Centre is led by its Director who is normally appointed for a 5-year term. The selection process is managed by the Chair of the GB who, along with board members, will establish a selection committee representing the Institute's or Centre's stakeholders. The selection committee will recommend a candidate to the GB. If the recommendation is accepted, the GB will recommend the candidate to the Senate and the Board of Governors which, upon acceptance, approves the appointment of the Director. The Director's term may be renewed, normally for a further 5 years, following assessment of the performance of the Institute or Centre by an External Review Board, or Centre Review Board. Normally, a Director will be limited to serving two consecutive terms, although some circumstances may lead to a Director serving more than two consecutive terms. In these instances, each renewal will follow assessment by the External Review Board or Centre Review Board. The selection process for a Director is separate from and additional to the establishment of a Research Centre or Institute.
23. In some exceptional circumstances, the appointment of a Director may occur as part of the process for hiring a new faculty member. Where the faculty hiring process also plans to appoint the new faculty member as Director of an Institute or Centre, the Chair of the Faculty Appointments Committee will inform the Chair of the Institute's or Centre's GB, at the outset of the hiring process. The Chair of the GB will be afforded the opportunity to comment on the appointment of a Director before the hiring process proceeds. Once a candidate accepts the offer, the Chair of the GB will be informed, and the Dean of the relevant Faculty will ensure that the Director appointment recommendation is provided as part of the appointment package to the Senate and Board of Governors for approval.
24. The Director, with the approval and agreement of the GB, establishes an Advisory Committee (AC) whose purpose it is to provide advice to the Director with regard to scientific and scholarly priorities and strategic guidance for the Institute or Centre. The AC is consulted at least annually at the discretion of the Director. The AC is normally constituted from members of the McMaster

community and external members with appropriate expertise relevant to the Research Institute or Centre.

**25. *Research Institutes - Annual Reporting***

The GB monitors the activity of the Institute following the annual submission of a Director's report to the GB. In the case of Institutes whose GB is Chaired by a Faculty Dean, the Dean will report on the Institute to the VPR for information. The VPR subsequently provides the University Planning Committee (UPC), Senate and Board of Governors with an annual report on the status of the Institute for information, as part of a summary document reporting on all Research Institutes.

26. Where Research Institutes house significant research infrastructure, and are deemed Core Platforms, the Director's report will be aligned with the reporting needs outlined in McMaster's Guidelines for the Governance and Review of Core Research Platforms.

**27. *Research Institutes – Performance Review***

The GB, in consultation with the Director, the AC, and members of the Institute, is responsible for periodically constituting an External Review Board (ERB). An ERB will review each Research Institute at least every five years and normally coincident with the final year of the Director's term. An external review may be called prior to a five-year lapse since Institute establishment or prior review, at the request of the Institute's GB.

The composition of the ERB will be determined by the GB and should take into account the aspirations of the Institute and the availability of funds to support the review. The ERB would normally comprise three high-caliber scholars with an international perspective, who must be at arms' length from the Institute. At least one of the ERB members should be external to the McMaster community. A member from the public or private sector could be considered as one of the three ERB members where such representation would be helpful in determining the value of the Institute's research. The ERB will assess the performance of the Institute Director and the research which has taken place. The ERB may use several metrics to determine performance including: the number and quality of publications; knowledge transfer to external partners; societal impact; and advancement of the University's strategic priorities. These should be compared to (a) similar metrics for the Institute prior to a previous review or, if this is the first review, with the expectations in the Institute establishment proposal; and (b) with the performance of Institutes of similar size in the same field of research. The ERB report will include recommendation for the renewal of the Director, and whether Institute performance is consistent with the status of an Institute at McMaster University. The report will be submitted in confidence to the Chair of

the GB and the VPR; and the Chair of the GB would normally share the ERB's report and its recommendations with the GB and either the current Director, or the successor to the current Director. The Director will prepare a response to the report to be shared with the GB and the VPR. Both the report and response will be provided to UPC, Senate and the Board of Governors to review and receive.

**28. *Research Centres - Annual Reporting***

The GB monitors the activity of the Centre following the annual submission of a Director's report to the GB. In the case of Centres whose GB is Chaired by a Faculty Dean, the Dean will report on the Centre to the VPR for information. The VPR subsequently provides UPC, Senate and Board of Governors with an annual status report for information, as part of a summary document reporting on all Research Centres.

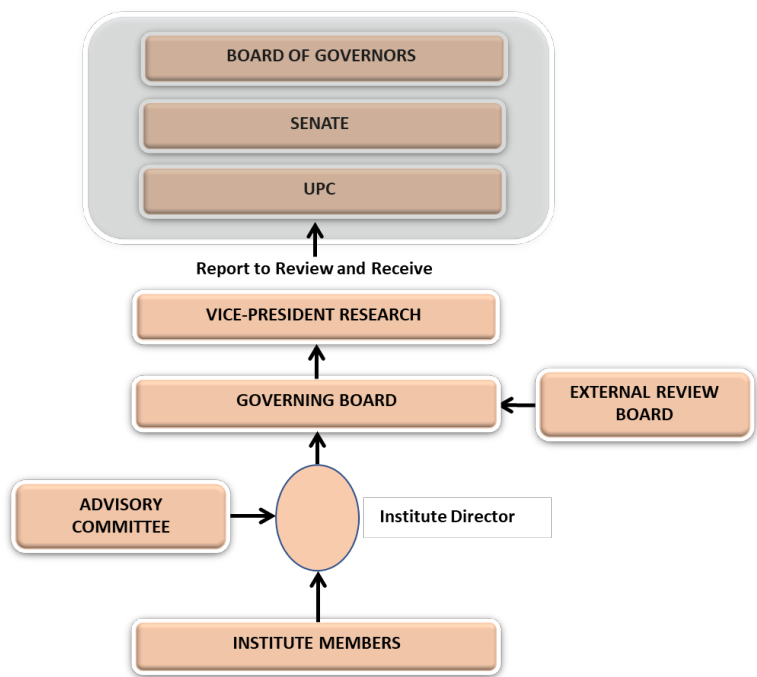
29. Where Research Centres house significant research infrastructure, and are deemed Core Research Platforms, the Director's report will be aligned with the reporting needs outlined in McMaster's Guidelines for the Governance and Review of Core Research Platforms.

**30. *Research Centres – Performance Review***

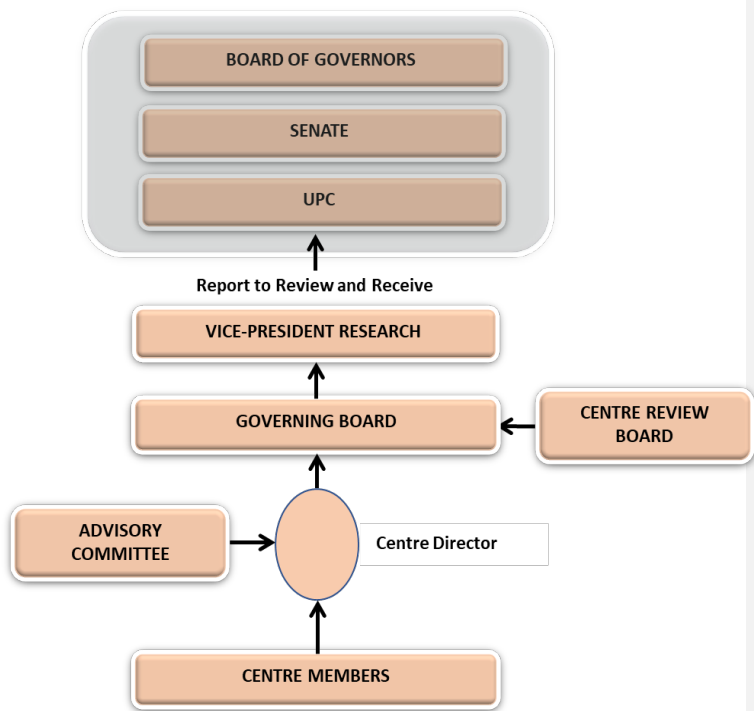
Each Centre will be reviewed at least every five years by a Centre Review Board (CRB). The composition of the CRB will be determined by the GB. The CRB would normally comprise three high-caliber scholars who may be internal or external to the McMaster community and who must be at arms' length from the Centre. The mandate of the CRB is similar to that described for the ERB for Institutes. The CRB report will be submitted in confidence to the Chair of the GB and the VPR and the Chair of the GB would normally share the CRB's report and its recommendations with the GB and either the current Director, or the successor to the current Director. The Director will prepare a response to the report to be shared with the GB and the VPR. Both the report and response will be provided to UPC, Senate and the Board of Governors to review and receive.

**31. *Flexibility for Governance and Review of Institutes and Centres in Exceptional Circumstances***

It is possible that the governance structure, reporting and review of Research Institutes and Centres may need to vary from those described above. For example, the Research Institute or Centre could also be required to report to an external funding body, and that body may have specific governance and reporting criteria. In such a case, the governance structure, reporting and review of the Research Institute or Centre must conform as closely as possible to that outlined above, while fulfilling the mandatory requirements of the external body.



**Example structure for a Research Institute. In this case, the Chair of the Governing Board is a Faculty Dean. This structure is provided as one possible example and other structures which conform with this policy are not excluded.**



**Example structure for a Research Centre. In this case, the Chair of the Governing Board is a Faculty Dean. This structure is provided as one possible example and other structures which conform with this policy are not excluded.**

## TERMINATION AND TRANSITION OF INSTITUTES AND CENTRES

### 32. ***Transition or Termination of a Research Institute or Centre***

A review of an Institute or Centre may conclude that the performance is inconsistent with University expectations. In some instances, following a negative review, the membership of an Institute will re-form as a Centre or a Group; or in the case of a Centre the membership will re-form as a Group. It is also possible that, following consultation with the GB, the appropriate Faculty Dean or VPR will dismiss the incumbent Director and instigate a search for a new Director who can address the deficiencies of the negative review and better serve the interests of the Research Institute or Centre and the University. In other instances, a CRB may recommend that a Centre become an Institute, in which case a formal application should be made to the VPR and CRI for Institute status.

The objective of transition is to provide the researchers with sufficient flexibility to optimize their productivity and impact. It is thus possible that a Director, usually after consultation with the AC and membership, may seek transition at any time within the lifetime of the Institute or Centre (whether a review has been **received performed** or not). This process is instigated through a request to the GB.

In some instances, a Director, usually in consultation with the AC and membership, may seek termination of the Institute or Centre (whether a review has been performed or not). For example, previously available funding to support the Institute or Centre may have ceased; or the Institute or Centre may have achieved its objectives removing the need for its existence. This process is instigated through a request to the GB.

The recommendation as to whether to terminate or transition a Research Institute or Centre, is made by the Institute's or Centre's GB. As establishment of an Institute or Centre is approved by UPC, Senate and the Board of Governors, approval for terminating or transitioning a Centre or Institute is also required from UPC, Senate and the Board of Governors.

## **RELATED POLICIES**



Guidelines for the Governance and Review of Core Research Platforms

Financial Procedure for Research Grants

Indirect Costs Associated with Research

Internally Sponsored Research Accounts

Joint Intellectual Property Policy

Operating and Ancillary Budgets Policy

Research Accounts Policy

Research Ethics Policy

Research Integrity Policy

Research Residuals Policy



## Policies, Procedures and Guidelines

Complete Policy Title

**Guidelines for the Governance and Review of  
Research Institutes, Centres and Groups**

Policy Number (if applicable)

Approved by

**Senate /  
Board of Governors**

Date of Most Recent Approval

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~~**December 15, 2011**~~

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4. Research organizations fall into three categories: Institutes, Centres and Groups. At the outset of the process to establish a research organization, the prospective membership should consult with the relevant Faculty Dean(s) and/or the Vice-President, Research (VPR) to determine which category is appropriate. As research organizations evolve, the appropriate category may change. In such a case, research organizations should consider instigating a transition to a different category.

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6. ***Centres***

Centres, like Institutes, support the strategic interests of the University, although their focus may be less broad and their operation may have smaller budgetary implications for the University. Research Centres normally report to the Dean of a Faculty, however in some cases a Centre will have membership spanning two or more Faculties. In this latter case, the Centre may report to the VPR or to the Dean of the most appropriate Faculty (in terms of membership or budgetary support). The Centre may be responsible for the operation and oversight of central research infrastructure. Some Centres may be supported by major external funding.

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## **ROLES AND RESPONSIBILITIES**

8. **Vice-President (Research):** The Vice-President (Research) (VPR) is the senior academic leader responsible for oversight of McMaster's Research Institutes and Centres. In some cases, the VPR (or designate) may act as Chair of the Governing Board of a Research Centre or Institute.
9. **Dean:** When a Research Centre or Institute reports directly to a Faculty Dean, the Dean shall be responsible for the oversight of the research organization and provide information to the Vice-President (Research) to allow the latter to fulfill

their responsibilities. In this case, the Dean (or designate) is Chair of the Governing Board.

10. **Director:** A Research Institute or Centre is led by a Director who is appointed through the Senate Committee on Appointments, Senate, and Board of Governors for a fixed term, normally 5 years.
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12. **Advisory Committee:** The Advisory Committee (AC) will provide advice to the Director on scientific and scholarly priorities and strategic guidance for the Research Institute or Centre. The AC is consulted at least annually at the discretion of the Director.
13. **External Review Board:** An External Review Board (ERB) will assess the performance of the Institute and Director and the research which has taken place.
14. **Centre Review Board:** A Centre Review Board (CRB) will assess the performance of the Centre and Director and the research which has taken place.
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### 16. **Establishment:**

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- i. The name, objectives, and proposed activities of the Institute or Centre.

- ii. A rationale for establishing the Institute or Centre.
  - iii. A list of participants and criteria for expanding the membership.
  - iv. A detailed business plan that includes the financial, space and human resource needs of the Institute or Centre. There must be an indication of the funding required to support the Institute or Centre, both initial start-up costs and the costs of on-going operations, and the internal and external sources of that funding.
  - v. A description of the Institute's or Centre's organizational structure, and its relationship (if any) with McMaster University affiliated hospitals or other institutions.
  - vi. An explanation as to why the Institute or Centre is consistent with the University's Strategic Research Plan.
17. If endorsed by the CRI, the proposal will be submitted to the University Planning Committee, who shall consider whether the proposal is consistent with the academic and research priorities of the University and whether the resource requirements and sources of funding have been appropriately considered. If endorsed by UPC, it will be recommended to the Senate and the Board of Governors for approval. The Research Institute or Centre will be formally established upon receiving the approval of the Board of Governors.
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22. A Research Institute or Centre is led by its Director who is normally appointed for a 5-year term. The selection process is managed by the Chair of the GB who, along with board members, will establish a selection committee representing the Institute's or Centre's stakeholders. The selection committee will recommend a candidate to the GB. If the recommendation is accepted, the GB will recommend the candidate to the Senate and the Board of Governors which, upon acceptance, approves the appointment of the Director. The Director's term may be renewed, normally for a further 5 years, following assessment of the performance of the Institute or Centre by an External Review Board, or Centre Review Board. Normally, a Director will be limited to serving two consecutive terms, although some circumstances may lead to a Director serving more than two consecutive terms. In these instances, each renewal will follow assessment by the External Review Board or Centre Review Board. The selection process for a Director is separate from and additional to the establishment of a Research Centre or Institute.
23. In some exceptional circumstances, the appointment of a Director may occur as part of the process for hiring a new faculty member. Where the faculty hiring process also plans to appoint the new faculty member as Director of an Institute or Centre, the Chair of the Faculty Appointments Committee will inform the Chair of the Institute's or Centre's GB, at the outset of the hiring process. The Chair of the GB will be afforded the opportunity to comment on the appointment of a Director before the hiring process proceeds. Once a candidate accepts the offer, the Chair of the GB will be informed, and the Dean of the relevant Faculty will ensure that the Director appointment recommendation is provided as part of the appointment package to the Senate and Board of Governors for approval.
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community and external members with appropriate expertise relevant to the Research Institute or Centre.

**25. *Research Institutes - Annual Reporting***

The GB monitors the activity of the Institute following the annual submission of a Director's report to the GB. In the case of Institutes whose GB is Chaired by a Faculty Dean, the Dean will report on the Institute to the VPR for information. The VPR subsequently provides the University Planning Committee (UPC), Senate and Board of Governors with an annual report on the status of the Institute for information, as part of a summary document reporting on all Research Institutes.

26. Where Research Institutes house significant research infrastructure, and are deemed Core Platforms, the Director's report will be aligned with the reporting needs outlined in McMaster's Guidelines for the Governance and Review of Core Research Platforms.

**27. *Research Institutes – Performance Review***

The GB, in consultation with the Director, the AC, and members of the Institute, is responsible for periodically constituting an External Review Board (ERB). An ERB will review each Research Institute at least every five years and normally coincident with the final year of the Director's term. An external review may be called prior to a five-year lapse since Institute establishment or prior review, at the request of the Institute's GB.

The composition of the ERB will be determined by the GB and should take into account the aspirations of the Institute and the availability of funds to support the review. The ERB would normally comprise three high-caliber scholars with an international perspective, who must be at arms' length from the Institute. At least one of the ERB members should be external to the McMaster community. A member from the public or private sector could be considered as one of the three ERB members where such representation would be helpful in determining the value of the Institute's research. The ERB will assess the performance of the Institute Director and the research which has taken place. The ERB may use several metrics to determine performance including: the number and quality of publications; knowledge transfer to external partners; societal impact; and advancement of the University's strategic priorities. These should be compared to (a) similar metrics for the Institute prior to a previous review or, if this is the first review, with the expectations in the Institute establishment proposal; and (b) with the performance of Institutes of similar size in the same field of research. The ERB report will include recommendation for the renewal of the Director, and whether Institute performance is consistent with the status of an Institute at McMaster University. The report will be submitted in confidence to the Chair of



the GB and the VPR; and the Chair of the GB would normally share the ERB's report and its recommendations with the GB and either the current Director, or the successor to the current Director. The Director will prepare a response to the report to be shared with the GB and the VPR. Both the report and response will be provided to UPC, Senate and the Board of Governors to review and receive.

**28. *Research Centres - Annual Reporting***

The GB monitors the activity of the Centre following the annual submission of a Director's report to the GB. In the case of Centres whose GB is Chaired by a Faculty Dean, the Dean will report on the Centre to the VPR for information. The VPR subsequently provides UPC, Senate and Board of Governors with an annual status report for information, as part of a summary document reporting on all Research Centres.

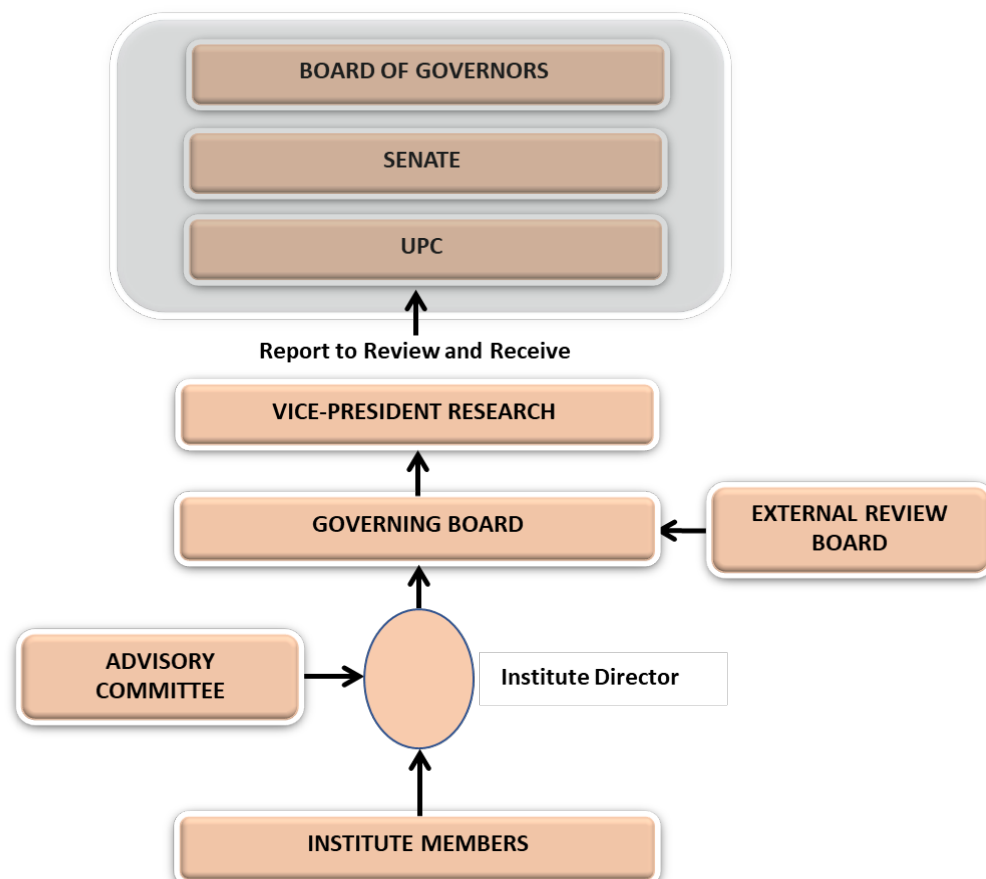
29. Where Research Centres house significant research infrastructure, and are deemed Core Research Platforms, the Director's report will be aligned with the reporting needs outlined in McMaster's Guidelines for the Governance and Review of Core Research Platforms.

**30. *Research Centres – Performance Review***

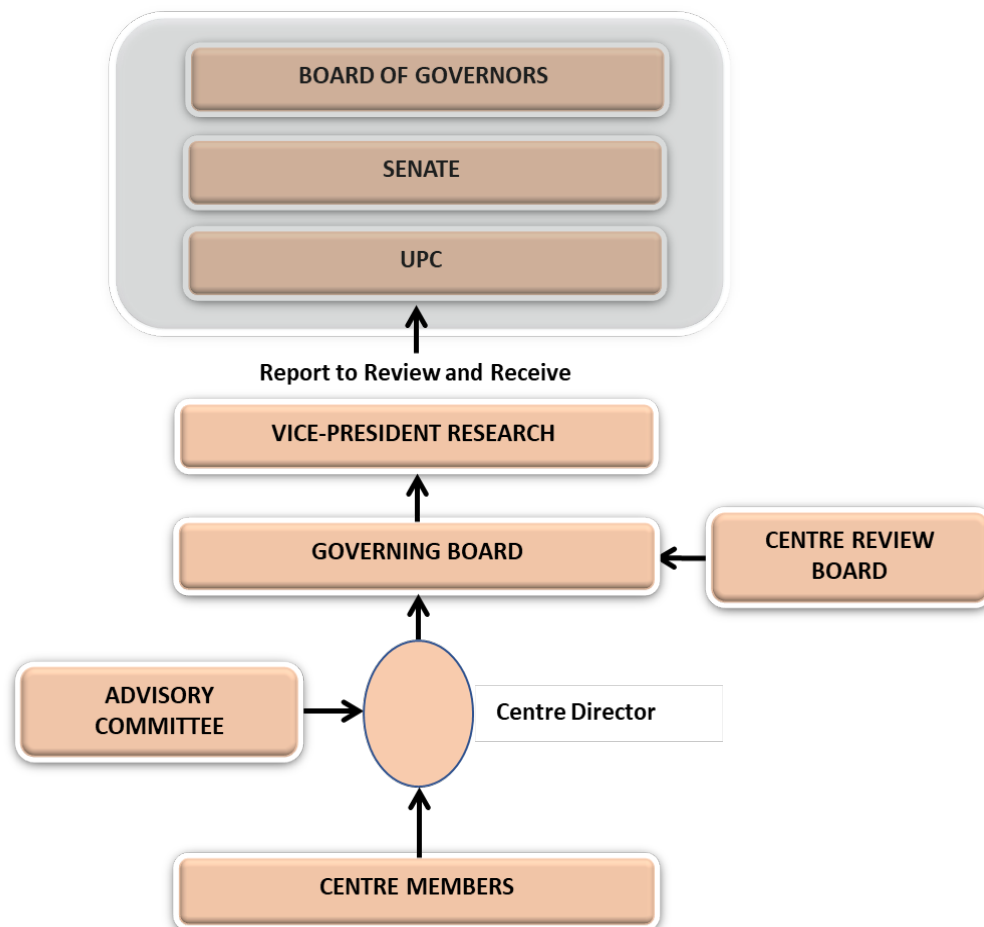
Each Centre will be reviewed at least every five years by a Centre Review Board (CRB). The composition of the CRB will be determined by the GB. The CRB would normally comprise three high-caliber scholars who may be internal or external to the McMaster community and who must be at arms' length from the Centre. The mandate of the CRB is similar to that described for the ERB for Institutes. The CRB report will be submitted in confidence to the Chair of the GB and the VPR and the Chair of the GB would normally share the CRB's report and its recommendations with the GB and either the current Director, or the successor to the current Director. The Director will prepare a response to the report to be shared with the GB and the VPR. Both the report and response will be provided to UPC, Senate and the Board of Governors to review and receive.

**31. *Flexibility for Governance and Review of Institutes and Centres in Exceptional Circumstances***

It is possible that the governance structure, reporting and review of Research Institutes and Centres may need to vary from those described above. For example, the Research Institute or Centre could also be required to report to an external funding body, and that body may have specific governance and reporting criteria. In such a case, the governance structure, reporting and review of the Research Institute or Centre must conform as closely as possible to that outlined above, while fulfilling the mandatory requirements of the external body.



**Example structure for a Research Institute. In this case, the Chair of the Governing Board is a Faculty Dean. This structure is provided as one possible example and other structures which conform with this policy are not excluded.**



**Example structure for a Research Centre. In this case, the Chair of the Governing Board is a Faculty Dean. This structure is provided as one possible example and other structures which conform with this policy are not excluded.**

## **TERMINATION AND TRANSITION OF INSTITUTES AND CENTRES**

### **32. *Transition or Termination of a Research Institute or Centre***

A review of an Institute or Centre may conclude that the performance is inconsistent with University expectations. In some instances, following a negative review, the membership of an Institute will re-form as a Centre or a Group; or in the case of a Centre the membership will re-form as a Group. It is also possible that, following consultation with the GB, the appropriate Faculty Dean or VPR will dismiss the incumbent Director and instigate a search for a new Director who can address the deficiencies of the negative review and better serve the interests of the Research Institute or Centre and the University. In other instances, a CRB may recommend that a Centre become an Institute, in which case a formal application should be made to the VPR and CRI for Institute status.

The objective of transition is to provide the researchers with sufficient flexibility to optimize their productivity and impact. It is thus possible that a Director, usually after consultation with the AC and membership, may seek transition at any time within the lifetime of the Institute or Centre (whether a review has been performed or not). This process is instigated through a request to the GB.

In some instances, a Director, usually in consultation with the AC and membership, may seek termination of the Institute or Centre (whether a review has been performed or not). For example, previously available funding to support the Institute or Centre may have ceased; or the Institute or Centre may have achieved its objectives removing the need for its existence. This process is instigated through a request to the GB.

The recommendation as to whether to terminate or transition a Research Institute or Centre, is made by the Institute's or Centre's GB. As establishment of an Institute or Centre is approved by UPC, Senate and the Board of Governors, approval for terminating or transitioning a Centre or Institute is also required from UPC, Senate and the Board of Governors.

## **RELATED POLICIES**

Guidelines for the Governance and Review of Core Research Platforms

Financial Procedure for Research Grants

Indirect Costs Associated with Research

Internally Sponsored Research Accounts

Joint Intellectual Property Policy

Operating and Ancillary Budgets Policy

Research Accounts Policy

Research Ethics Policy

Research Integrity Policy

Research Residuals Policy

**MEMO**

DATE: May 4, 2021

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research



RE: **Closures of McMaster Research Centres and Institutes**

=====

The University Secretariat and Office of the Vice-President, Research (OVPR) have been engaged in a collaborative, internal review of the status of all McMaster Research Centres and Institutes (RCIs). The University Secretariat manages RCI policy and governance, while the OVPR manages RCI operations and administrative guidelines.

With the additional support and guidance of the Faculties, the review has established an accurate list of current active and non-active RCIs. The listing aligns and reconciles all records held by the Secretariat, OVPR and Faculty Offices. As a result of this work, we seek to update governance records. Below we specify those RCIs that are no longer active and accordingly, we recommend the formal closure of these Research Centres and Institutes. This recommendation is made with the agreement of the Faculties with which the RCIs are associated.

Also, appended are individual memos relating to the closure of each Research Centre and Institute.

**Business**

Health Leadership Institute

Management of Innovation & New Technology Research Centre

McMaster eBusiness Research Centre

**Engineering**

Canadian Institute of Manufacturing

McMaster Centre for Flexible Manufacturing

McMaster Institute of Polymer Production Technology

**Health Sciences**

Aging & Health R. Samuel McLaughlin Centre

Arthritic Diseases Centre

Centre for Evaluation of Medicines

Surgical Outcomes Resource Centre

McMaster Institute for Urology at St. Joseph's Healthcare Hamilton

**Humanities**

Language Institute of McMaster

**Science**

McMaster Centre for Nutrition, Exercise, and Health Research

**Social Sciences**

Institute for Manufacturing Policy Analysis and Knowledge Transfer

KM:jt

Enclosures: 14

cc: Provost and Vice-President (Academic)  
Vice-Provost and Dean of Graduate Studies  
Dean, Faculty of DeGroote School of Business  
Dean, Faculty of Engineering  
Dean, Faculty of Humanities  
Dean, Faculty of Health Sciences  
Dean, Faculty of Science  
Dean, Faculty of Social Sciences  
University Secretary and Freedom of Information and Protection of Privacy Officer

**MEMO**

DATE: April 28, 2021

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research



RE: **Health Leadership Institute**

=====

The Office of the Vice-President Research and the University Secretariat recently conducted an internal review of McMaster's research centres and institutes. Following in-depth consultation with the Faculty of Business, the review identified the McMaster Health Leadership Institute was established in April 2006 and ceased to be active. Leadership turnover and the subsequent emergence of the Health Leadership Academy as a priority for the Faculty has led to the need to close this Institute. Accordingly, I would like to recommend the formal closure of the Health Leadership Institute.

KM:jt

cc: Provost and Vice-President (Academic)  
Vice-Provost and Dean of Graduate Studies  
Dean, Faculty of DeGroote School of Business  
University Secretary and Freedom of Information and Protection of Privacy Officer



**MEMO**

DATE: April 28, 2021

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research



RE: **Innovation Research Centre {IRC}/Management of Innovation & New  
Technology Research Centre {MINT}**

=====

The Office of the Vice-President Research and the University Secretariat recently conducted an internal review of McMaster's research centres and institutes. Following in-depth consultation with the Faculty of Business, the review identified the McMaster Innovation Research Centre {IRC}/Management of Innovation & New Technology Research Centre {MINT}. The centre was established in December 1993 and is no longer active. Accordingly, I would like to recommend the formal closure of this Centre.

KM:jt

cc: Provost and Vice-President (Academic)  
Vice-Provost and Dean of Graduate Studies  
Dean, Faculty of DeGroote School of Business  
University Secretary and Freedom of Information and Protection of Privacy Officer

**MEMO**

DATE: April 28, 2021

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research



RE: **McMaster eBusiness Research Centre (MERC)**

=====

The Office of the Vice-President Research and the University Secretariat recently conducted an internal review of McMaster's research centres and institutes. Following in-depth consultation with the Faculty of Business, the review identified the McMaster eBusiness Research Centre (MERC). The centre was established in July 2001 and is no longer active. The McMaster Digital Transformation Research Centre was created to reflect the new priorities and direction of the Faculty. Accordingly, I would like to recommend the formal closure of the McMaster eBusiness Research Centre (MERC).

KM:jt

cc: Provost and Vice-President (Academic)  
Vice-Provost and Dean of Graduate Studies  
Dean Waverman, Dean Hassanein  
University Secretary and Freedom of Information and Protection of Privacy Officer

**MEMO**

DATE: April 28, 2021

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research



RE: **Canadian Institute of Manufacturing**

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The Office of the Vice-President Research and the University Secretariat recently conducted an internal review of McMaster's research centres and institutes. Following in-depth consultation with the Faculty of Engineering, the review identified the Canadian Institute of Manufacturing. The centre was established in 1969 and the last record of activity is from 1982/83. Accordingly, I would like to recommend the formal closure of this institute.

KM:jt

cc: Provost and Vice-President (Academic)  
Vice-Provost and Dean of Graduate Studies  
Dean, Faculty of Engineering  
University Secretary and Freedom of Information and Protection of Privacy Officer

**MEMO**

DATE: April 26, 2021

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research



RE: **McMaster Centre for Flexible Manufacturing**

---

The Office of the Vice-President Research and the University Secretariat recently conducted an internal review of McMaster's research centres and institutes. Following in-depth consultation with the Faculty of Engineering, the review identified the McMaster Centre for Flexible Manufacturing. The centre was established in 1987 and is not operational. Accordingly, I would like to recommend the formal closure of this institute.

KM:jt

cc: Provost and Vice-President (Academic)  
Vice-Provost and Dean of Graduate Studies  
Dean, Faculty of Engineering  
University Secretary and Freedom of Information and Protection of Privacy Officer

**MEMO**

DATE: April 29, 2021

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research



RE: **McMaster Institute of Polymer Production Technology**

---

The Office of the Vice-President Research and the University Secretariat recently conducted an internal review of McMaster's research centres and institutes. Following in-depth consultation with the Faculty of Engineering, the review identified the McMaster Institute of Polymer Production Technology. The Institute was established in 1982 and is no longer operational. Accordingly, I would like to recommend the formal closure of this institute.

KM:jt

cc: Provost and Vice-President (Academic)  
Vice-Provost and Dean of Graduate Studies  
Dean, Faculty of Engineering  
University Secretary and Freedom of Information and Protection of Privacy Officer

**MEMO**

DATE: March 30, 2021

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research



RE: **Closure of Aging & Health R. Samuel McLaughlin Centre**

=====

The Office of the Vice-President Research and the University Secretariat recently conducted an internal review of McMaster's research centres and institutes. Following in-depth consultation with the Faculty of Health Sciences, the review identified that the Aging & Health R. Samuel McLaughlin Centre should be closed. The centre has been inactive for a number of years and there are no plans from the Faculty to restart the centre. Accordingly, I would like to recommend the formal closure of this centre.

KM:jt

cc: Provost and Vice-President (Academic)  
Vice-Provost and Dean of Graduate Studies  
Dean and Vice-President, Faculty of Health Sciences  
Vice-Dean Research, Faculty of Health Sciences  
University Secretary and Freedom of Information and Protection of Privacy Officer

**MEMO**

DATE: March 30, 2021

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research



RE: **Closure of Arthritic Diseases Centre**

=====

The Office of the Vice-President Research and the University Secretariat recently conducted an internal review of McMaster's research centres and institutes. Following in-depth consultation with the Faculty of Health Sciences, the review identified that the Arthritic Diseases Centre should be closed. The centre has been inactive for a number of years and there are no plans from the Faculty to restart the centre. Accordingly, I would like to recommend the formal closure of this centre.

KM:jt

cc: Provost and Vice-President (Academic)  
Vice-Provost and Dean of Graduate Studies  
Dean and Vice-President, Faculty of Health Sciences  
Vice-Dean Research, Faculty of Health Sciences  
University Secretary and Freedom of Information and Protection of Privacy Officer

**MEMO**

DATE: March 30, 2021

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research



RE: **Closure of Centre for Evaluation of Medicines**

=====

The Office of the Vice-President Research and the University Secretariat recently conducted an internal review of McMaster's research centres and institutes. Following in-depth consultation with the Faculty of Health Sciences, the review identified that the Centre for Evaluation of Medicines should be closed. The centre has been inactive for a number of years and there are no plans from the Faculty to restart the centre. Accordingly, I would like to recommend the formal closure of this centre.

KM:jt

cc: Provost and Vice-President (Academic)  
Vice-Provost and Dean of Graduate Studies  
Dean and Vice-President, Faculty of Health Sciences  
Vice-Dean Research, Faculty of Health Sciences  
University Secretary and Freedom of Information and Protection of Privacy Officer



**MEMO**

DATE: March 30, 2021

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research



RE: **Closure of Surgical Outcomes Resource Centre**

=====

The Office of the Vice-President Research and the University Secretariat recently conducted an internal review of McMaster's research centres and institutes. Following in-depth consultation with the Faculty of Health Sciences, the review identified that the Surgical Outcomes Resource Centre should be closed. The centre has been inactive for a number of years and there are no plans from the Faculty to restart the centre. Accordingly, I would like to recommend the formal closure of this centre.

KM:jt

cc: Provost and Vice-President (Academic)  
Vice-Provost and Dean of Graduate Studies  
Dean and Vice-President, Faculty of Health Sciences  
Vice-Dean Research, Faculty of Health Sciences  
University Secretary and Freedom of Information and Protection of Privacy Officer

**MEMO**

DATE: March 30, 2021

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research



**RE: Closure of McMaster Institute for Urology at St. Joseph's Healthcare Hamilton**

=====

The Office of the Vice-President Research and the University Secretariat recently conducted an internal review of McMaster's research centres and institutes. Following in-depth consultation with the Faculty of Health Sciences, the review identified that the McMaster Institute for Urology at St. Joseph's Healthcare Hamilton should be closed. The institute was established in 2005, but after its latest review it was decided the institute was no longer achieving its mission as a research institute. The Urology Institute will continue to be operated by St. Joseph's Healthcare Hamilton; however, the name will be changed to remove McMaster's affiliation. Accordingly, I would like to recommend the formal closure of this institute.

KM:jt

cc: Provost and Vice-President (Academic)  
Vice-Provost and Dean of Graduate Studies  
Dean and Vice-President, Faculty of Health Sciences  
Vice-Dean Research, Faculty of Health Sciences  
University Secretary and Freedom of Information and Protection of Privacy Officer

**MEMO**

DATE: February 25, 2021

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research



RE: **Language Institute of McMaster**

=====

The Office of the Vice-President Research and the University Secretariat recently conducted an internal review of McMaster's research centres and institutes. Following in-depth consultation with the Faculty of Humanities, the review identified the Language Institute of McMaster as no longer active. The Institute was established in 1979 under the School of Adult Education and has since ceased to operate. Accordingly, I would like to recommend the formal closure of this institute.

KM:jt

cc: Provost and Vice-President (Academic)  
Vice-Provost and Dean of Graduate Studies  
Dean of Humanities  
University Secretary and Freedom of Information and Protection of Privacy Officer

**MEMO**

DATE: February 23, 2021

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research



RE: **McMaster Centre for Nutrition, Exercise, and Health Research**

=====

The Office of the Vice-President Research and the University Secretariat recently conducted an internal review of McMaster's research centres and institutes. Following in-depth consultation with the Faculty of Science, the review identified the McMaster Centre for Nutrition, Exercise, and Health Research. The Centre was established in 2013 however, full operations did not come to fruition due to various contributing factors and eventual shifting Faculty priorities. Accordingly, I would like to recommend the formal closure of this institute.

KM:jt

cc: Provost and Vice-President (Academic)  
Vice-Provost and Dean of Graduate Studies  
Dean of Science  
University Secretary and Freedom of Information and Protection of Privacy Officer

**MEMO**

DATE: March 29, 2021

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research




RE: **Institute for Manufacturing Policy Analysis and Knowledge Transfer (IMPAKT)**

=====

The Office of the Vice-President Research and the University Secretariat recently conducted an internal review of McMaster's research centres and institutes. Following in-depth consultation with the Faculty of Social Sciences, the review identified the Institute for Manufacturing Policy Analysis and Knowledge Transfer (IMPAKT) no longer active. The centre was established in 2013 and the former Director, Dr. Charlotte Yates is presently President and Vice Chancellor at the University of Guelph. Currently, there are no researchers at McMaster with a research interest to maintain this Institute. Accordingly, I would like to recommend the formal closure of this institute.

KM:jt

cc: Provost and Vice-President (Academic)  
Vice-Provost and Dean of Graduate Studies  
Dean, Faculty of Social Sciences  
University Secretary and Freedom of Information and Protection of Privacy Officer



# McMaster Accessibility Council

2020  
Annual Accessibility  
Activity Report  
January 1- December 31

McMaster Accessibility  
Council (MAC)



## McMaster Accessibility Council 2020 Annual Accessibility Activity Report



### McMaster Accessibility Council

#### 2020 Annual Accessibility Activity Report

#### MEMO

**DATE:** May 4, 2020

**SUBJECT:** McMaster Accessibility Council – 2020 Annual Accessibility Activity Report

**TO:** David Farrar, President  
Susan Tighe, Acting Provost and Vice President (Academic)  
Roger Couldrey, Vice-President (Administration)

**FROM:** Anne Pottier, Chair, McMaster Accessibility Council (MAC)  
Arig al Shaibah, Associate Vice-President, Equity and Inclusion

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The McMaster Accessibility Council, supported by the Equity and Inclusion Office Access Mac Program, is dedicated to advancing equity and inclusion for the diversity of persons with disabilities in our community. The Council is responsible for ensuring the University's adherence to the Accessibility for Ontarians with Disabilities Act (AODA).

It is positive that McMaster was found to be compliant across all measures last audited by the AODA, and it is clear that there is much work ahead to ensure the University meets updated compliance benchmarks set for 2025. Furthermore, the MAC will be urging the University to move beyond compliance to realize more aspirational accessibility, equity and inclusion goals, giving renewed attention to the need to ensure accessibility in virtual environments which are becoming a staple for operational, academic and educational excellence.

## McMaster Accessibility Council 2020 Annual Accessibility Activity Report

2020 saw the importance of accessibility as the campus pivoted to a remote Teaching, Learning and Working environment and this work will continue to be vital moving forward. Much work was undertaken to continue to update institutional strategies and plans to support the achievement of both AODA compliance measures and aspirational accessibility priorities and goals.

Moving forward, the MAC will develop a communication strategy and enhanced planning and reporting tool to broadly publicize and account for commitments in our action plans through aspirational accessibility activity reports as well as AODA compliance reports.

Please find enclosed, for your review, the tenth annual accessibility activity report from the McMaster Accessibility Council (MAC), covering the period January 1, 2020 to December 31, 2020.



# McMaster Accessibility Council 2020 Annual Accessibility Activity Report

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## Accessibility Accomplishments 2020

### Strategic Planning and Implementation

- MAC has been working with the Equity and Inclusion Office to develop a comprehensive AODA compliance reporting tool, separate from the Annual Accessibility Activity Report.
- McMaster's Policy on Accessibility is currently under review, and the revised Policy will be instrumental in mobilizing actions to meet compliance measures as well as aspirational goals.

### Environments and Spaces – Our Campus Facilities

#### Facility Services

This year, Facility Services completed many accessibility-related projects as part of the Campus Accessibility Action Plan (CAPP) – a summary of these projects, including projects on the horizon for 2021, can be found in **Appendix A of McMaster's Annual Accessibility Report**.

In addition to specific requests for accessibility upgrades in several departments and campus buildings, plans are underway for the addition of an elevator to the Applied Dynamics Laboratory building.

#### **This was the year of accessibility audits for many buildings on campus, including:**

- Accessibility audits for Mills Memorial Library and the H.G. Thode Science & Engineering Library. Recommendations from these audits are being reviewed and prioritized action plans are being developed to address many of the issues raised.
- An audit of accessible entrances for all buildings on campus was undertaken as part of the development of a virtual campus map.
- An audit of all washrooms on campus was undertaken to determine which washrooms are accessible, barrier-free and/or All Genders. Recommendations from this audit have been reviewed and a prioritized action plan will be developed to address issues raised.

## McMaster Accessibility Council 2020 Annual Accessibility Activity Report

### Accessible Transportation – Parking and Security Services, Facility Services

- In 2020, Security and Parking Services undertook a project with Media Production Services to revamp its websites to be AODA compliant. The Security website has been updated and work is currently underway on the parking website.
- There are 116 accessible spaces on campus and 14 accessible spaces in off campus lots. In 2020, 7 new accessible spaces were added and 4 spaces that were previously impacted by construction were gained back into the parking inventory.
- Parking Services formed a committee including representation from the McMaster Accessibility Council to install and update AODA compliant outdoor wayfinding signage across the University. Facility Services will be turning its attention to interior signage over the coming year.
- The Parking Office replaced the two existing campus shuttle buses with accessible shuttle buses which went into operation for the fall term.

### Barrier Free Standard Committee

The Barrier-Free Design Standard Committee was created late in 2019 and is comprised of representatives from Facility Services, the Equity & Inclusion Office, Student Accessibility Services, the McMaster Accessibility Council, Media Production Services and both undergrad and graduate student representatives.

In this first year, the Committee reviewed the accessibility audits of campus buildings to determine priorities to resolve issues, undertook an environmental scan of similar standards at other Ontario universities, and reviewed the anticipated Built Environment section of the soon-to-be-released AODA Post-Secondary Education Standard. The first area looked at in-depth was the inconsistency with which washrooms are both categorized (multi-use single gender, single use, accessible, barrier-free, all genders) and how all washrooms are signed. Work has started on rectifying these inconsistencies. Additionally, this group has been consulted with respect to several new and ongoing building or renovation projects on campus. Recommendations will be provided to the AVP and Chief Facilities Officer for incorporation into renovation and new construction projects.

## McMaster Accessibility Council 2020 Annual Accessibility Activity Report

### Digital Accessibility

#### Central Web Accessibility Project

Great strides were made this year towards McMaster's Web Accessibility efforts. Two parallel and linked activities unfolded to provide clear direction to the campus on a way forward with our web accessibility responsibilities. The first initiative was the development of a campus Web Strategy, in collaboration with the AVP and CTO, the AVP Equity and Inclusion (EIO) and the AVP Communications and Public Affairs (CAPA). The second activity was the development of a Web Accessibility Roadmap, which was a key recommendation of the Web Strategy, and undertaken in partnership with the AVP and CTO and the AVP EIO. Both fall within the McMaster IT Strategic Plan and will continue to take on momentum through the next fiscal year.

The McMaster Web Strategy and its recommendations were the result of broad McMaster community engagement sessions and targeted discussions which included representation from departments, committees, and institutional leadership. The implementation of a web strategy for McMaster University is intended to provide a framework for coordination to ensure that the institution's web presence is consistent, secure, accessible, and manageable, improving our reputation and the experience of our internal and external website visitors.

One of the key recommendations of the Web Strategy is the requirement to adhere to legislated requirements as outlined in AODA (Accessibility for Ontarians with Disabilities Act). It states that the ability to achieve AODA compliance in the web service area requires clear standards for compliance, communicate expectations to unit leads, identify and/or create implementation resources and supports, develop mechanisms to monitor and report progress, and initiate remedial measures to support units to achieve compliance benchmarks. This will require the intersection of web accessibility with web delivery methods as well as branding.

Through its endorsement by IT Governance, the Web Strategy and its web accessibility recommendations gained momentum and a corresponding AODA Web Accessibility Compliance roadmap was proposed to align with the institutional commitment and capacity pillar under the [EDI strategic framework and accompanying action plan](#) and to mitigate the risk of AODA level AA non-compliance on January 1, 2021. The Web Accessibility Compliance Roadmap has focused areas of action and will be undertaken in the next fiscal year, with several areas of activity unfolding in 2021, including:

- The hiring of a Web Accessibility Specialist
- The establishment of clear web accessibility and AODA compliance goals

## McMaster Accessibility Council 2020 Annual Accessibility Activity Report

- A policy document that includes the scope of standards to be met
- An inventory of McMaster websites with processes for measuring accessibility capabilities
- Auditing of current McMaster Brand Standards
- The engagement of campus wide web accessibility ‘change champions’
- Identification and application of institution-wide accessibility and auditing and inventory tools
- Training, support and community of practice opportunities
- A communication plan to create awareness and understanding at McMaster
- Mechanisms to monitor and report progress

### **Faculty of Health Science: Redeveloping FHS Web Environments with an Accessibility Focus**

To adhere to the Accessibility for Ontarians with Disabilities Act (AODA) in a “best possible” approach, the Faculty of Health Sciences’ (FHS) Web Committee has met with various web groups from across campus including the McMaster AccessMac Program (EIO), Media Production Services, Faculty of Engineering and Faculty of Science. Outcomes from those discussions has led to an ongoing effort to improve and implement common processes for ongoing AODA compliance with the FHS web service.

- Sites are scanned for AODA compliancy when they are initially designed, and McMaster-branded page template headers and footers supplied by Central Marketing have been incorporated.
- Common AODA best practices are included in FHS web site training materials. This not only includes information on the handling of images and media, but includes the use and handling of downloadable files (pdfs) to ensure they are also AODA compliant.
- One of the most important aspects of the AODA is that there be a mechanism for reporting and resolving accessibility issues by site visitors in a timely manner. The web committee is currently implementing a reporting and resolution process for all sites hosted through the FHS web services. All issues would be documented, resolved and reported back to the university’s Accessibility Office.

## McMaster Accessibility Council 2020 Annual Accessibility Activity Report

### Faculty of Social Sciences: Continued Web Accessibility Updates

#### Faculty of Social Sciences Training: Accessible Digital Media:

- Continued to offer training / workshops / presentations / consultations on various digital accessibility techniques and information on the Information Communication standards in the Accessibility for Ontarians with Disabilities Act (AODA) and Web Content Accessibility Guidelines (WCAG).
- Training included digital accessibility core skills, document accessibility techniques, and the facilitation of accessible presentations.

#### The Faculty of Social Sciences has enhanced website accessibility this year:

- 70+ websites affected by accessibility remediations within the Faculty of Social Sciences after a preliminary template audit conducted the summer of 2019.
- Accessibility enhancements and remediation were a result of manual testing using automated and manual validation techniques. Template adjustments and findings / remediation efforts were shared with Branding and Media Production Services so enhancements could be made to centrally provided 'Brighter World' code-bases available to the campus community.
- Content level audit planned for department level website content (delayed due to pandemic).

### Faculty of Science: Blended Learning Digital Accessibility Enhancements

With support from the Strategic Alignment Fund ("SAF"), the Faculty of Science has been converting our existing blended learning courses into more accessible formats to ensure adherence to the Accessibility for Ontarians with Disabilities Act (AODA) and the Web Content Accessibility Guidelines (WCAG) 2.0 AA.

The development team has been working closely with instructional groups and accessibility experts on campus to complete this project by 2021. Additional priorities include incorporating research on best-practice, ensuring content can be updated and maintained sustainably, and using tools that are accessible to all members of the university. As the understanding of accessible best practices matures, efforts to disseminate tools, techniques and support across the Faculty and University follow-suit. In support of their SAF goals, the Office of the Dean

## McMaster Accessibility Council 2020 Annual Accessibility Activity Report

worked with Kate Brown from Equity & Inclusion to reimagine the Digital Media Specialist role for a more accessible future.

The Faculty prioritizes student experiences and feedback and has partnered with a user-testing group organized by the Equity and Inclusion Office to ensure platform selection and content creation is accessible.

## Financial Affairs

### Strategic Procurement

During the 2020 year, Strategic Procurement has integrated AODA compliance language and commitments into the following areas:

- Updating the Strategic Procurement website within [the “External Links” section](#) to reflect AODA information (Ministry), including training requirements.
- Stand-alone AODA / accessibility procurement clauses have been added within RFX documents for posting (>\$100K). Please visit the [McMaster Procurement website](#) to access.
- Suppliers responding to RFX shall engage with QCSolver to ensure AODA compliance for goods and services/added clause is embedded in documentation.
- An updated End User checklist has been included into the Strategic Procurement process to include AODA awareness for Specialist roles when discussing procurement strategies.

### Hospitality Services

For the 2020 calendar year, Hospitality Services has moved accessibility forward in the following areas:

- The [Hospitality Services Website](#) has been upgraded to come into AODA compliance.
- Accessibility training was added to HS’s annual staff recall in August, in addition to new hire training.
- A braille menu has been made available at East Meets West Bistro

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- The location digital menu boards were updated to include larger font and stronger contrast
- A new location countertop in Peter George Centre for Living and Learning is AODA compliant

### Media Production Services (MPS)

This year, MPS has engaged with digital accessibility work in the following areas:

- MacSites Web Platform is a WCAG 2.0 Level AA web template system that provides content editors with a simple way to manage accessible content within their websites. There are 80+ McMaster sites now live on this system with many more in development.
- MPS has continued to collaborate with Student Accessibility Services in providing course materials in alternate formats in order to assist with the disability-related needs of students.
- Braille translation and printing services are now available for McMaster clients.
- Video captioning services are now available for McMaster Clients.

### Campus Store

The Campus Store has used 2020 to enhance accessibility in the following areas:

- The Campus Store website has come into AODA compliance.
- Course Materials Buyers at the Campus Store work closely with Student Accessibility Services to secure publisher content in a variety of alternate formats.
- The CS completed an AODA audit of the store to identify potential opportunities.
- Hardware was acquired to install customer-facing screens at checkout, but due to Covid the install of these screens has been delayed until our physical store reopens.
- Main aisleways are ensured to meet AODA guidelines.
- The layout of merchandise displayed has been reworked to present stock in a vertical as opposed to horizontal fashion.



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### Communication

#### Central Communications and Public Affairs (CAPA)

The Office of Communications and Public Affairs continues to work towards providing accessible, inclusive content in many ways, including:

- Ensuring that content and social media managers across campus have training in accessible content and social media posts through virtual training sessions.
- Captioning each of the videos they produce and post, and adding alt text to images on websites and social media.
- Remaining open to and eager for feedback, consultation and collaboration around issues of digital accessibility and inclusive content.

CAPA additionally continues to highlight stories on accessibility, disability, assistive technology and other relevant topics, including these recent articles:

- **Daily News**
  - [Teams with McMaster connections place first and third in international Digital Inclusion Challenge](#)
  - [Soldiers' letters home now available digitally, thanks to lockdown transcription project](#)
  - [Engineering startup, ImaginAble, to compete for \\$30K in LiONS LAIR competition](#)
  - ["No hard work is ever wasted"](#) (profile of electrical and biomedical engineering graduate Hisham Mohammed)
  - [Can't stop the music](#) (article about Hamilton Parkinson's Choir)
- **Brighter World**
  - [COVID-19 has isolated people with disabilities from family, love, sex](#)
  - [Children with disabilities face health risks, disruption and marginalization under coronavirus](#)

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### Accessibility and Disability Inclusion Update 2019-2020

The third annual Accessibility and Disability Inclusion Update 2019-2020 was published and released to the campus as [a Highlights Newsletter](#) on December 3, 2020, to commemorate the [International Day of Persons with Disabilities](#). Despite this year's shortened Call for Submissions period, McMaster's accessibility / disability inclusion communities banded together to submit close to 70 pieces across student, staff and faculty realms, many of which reflected the elevation of an accessibility focus within individual and collective areas of work and study as the McMaster community shifted to remote environments resulting from the ongoing COVID-19 pandemic.

This vibrant and colourful newsletter has to date received close to 600 views and downloads, demonstrating an ongoing awareness of and commitment to collective goals of accessibility and inclusion at the University. The full 40+ page version of the Update will be released to the McMaster community the first week of June 2021 to mark and celebrate [National Accessibility Week](#), and will be available from the [Inclusion Initiatives](#) section of McMaster's Accessibility Hub website. Heartfelt thanks to the campus community for banding together to submit to the Newsletter and Update within a sustainably reduced 6-week call for submission process, and sincere thanks to Nusrat Mir, AccessMac Peer Educator, for designing and compiling the Newsletter for campus-wide distribution; Victoria Kren, AccessMac Accessibility Projects Assistant, for editing and organizing the full version of the Update; and Emunah Woolf, AccessMac Placement Student, for final copy edits and revisions.

### Accessible Education

#### MacPherson Institute - Accessibility-Focused Educational Research and Development

##### Teaching and Learning Strategy

- Acting Vice-Provost, Kim Dej, with support from the MacPherson Institute Director, Lori Goff, and other project team members and under the guidance of a broad steering committee and advisory committee, led the development of the *Partnered in Teaching and Learning* Strategy for McMaster University and aligned it with the President's developing strategy
- Considerations for accessibility, equity, diversity and inclusion were built into and threaded through the *Partnered in Teaching and Learning* Strategy development and

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design from the start, creating synergies with the Equity Diversity and Inclusion (EDI) Strategy

- Broad consultations across campus and specifically with EIO, PACBIC, IEC helped to shape the strategy with a lens to supporting and fostering inclusive excellence in teaching and learning at McMaster.
- The strategy is in its final stages of development and will be launched in spring 2021

### Accessible Education Seminars and Events

- In summer 2020, the MacPherson Institute's annual Teaching Remotely: Shared Experiences virtual panel series hosted well-attended sessions on [Inclusive Spaces \(July 23\)](#) and [Accessible Teaching \(August 6\)](#).
- The MacPherson Institute and Equity and Inclusion Office also collaborated to host two webinars on [applying accessible education principles to online teaching and learning](#) in August 2020 (approximately 250 participants).
- The [September 2020 Annual Teaching & Learning Forum](#) for TAs and sessional instructors was re-developed and relaunched to a remote format this year, where accessible design was considered from the outset of event planning.
  - In addition to featured workshops on Accessibility and Accommodation and Teaching with a Disability, participants could participate asynchronously for the majority of workshops, with few options for synchronous engagement; live captioning was enabled through Teams and Zoom for synchronous participation; and professional stenographers were hired for sessions where audience participation was anticipated to draw audiences of persons with disabilities.

### IDEAS Grant Development 2020

- In a partnership between the Provost, the MacPherson Institute and the Equity and Inclusion Office, **\$38K** was provided to launch the [new IDEAS grants](#) for faculty to implement sustainable changes in their courses in the areas of Inclusion, Diversity, Equity, Accessibility and Sustainability. From May – December 2020 these funds were awarded to a total of **10 projects** across the Faculty of Health Sciences, Faculty of Humanities, Faculty of Science, Faculty of Social Science, as well as the Department of

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Intercession Learning and the Department of Community Engagement and Experiential Learning.

### Accessibility-Focused Educational Research and Development

- The development of a new module within McMaster's Accessible Education pedagogical training, [\*Forward with FLEXibility: A Teaching and Learning Resource on Accessibility and Inclusion\*](#), was drafted and approved for layout in 2020. The module is entitled *Accessibility in Online and Technology-Enabled Learning* and has been written in direct response to the COVID-19 pandemic and the need to support accessible course design and delivery for instructors working in remote and blended teaching and learning environments. The new module is currently available from the course's Avenue course shell, and will be officially "launched" early summer, 2021.
- [The Student Partners Program](#), supported by the MacPherson Institute, funded several educational research and development projects focusing on accessibility and equity in teaching and learning, including: disabled student experiences self-advocating for their learning needs; critical knowledge exchange of social justice teaching and learning scholarship; online mental health education for instructors; creating safety for marginalized students in social work pedagogy; the contribution of Mad student peer support to student learning experiences; and student desires for faculty diversity.
  - With funding from SSHRC, researchers affiliated with the MacPherson Institute have also been able to pilot an equity-focused stream of the Student Partners Program during the Winter and Fall 2020 terms. Several faculty/student pairs, including a number of students with disabilities, have enhanced attention to accessibility, disability inclusion, and mental health in the faculty member's course in a range of ways.
- Members of the Institutional Quality Assurance Process (IQAP) Team at MacPherson have also been working with departments under IQAP review to complete [section 3.4 of the Self Study document on Accessibility](#), upgrading the section to align with goals within McMaster's Equity, Diversity, and Inclusion Framework and Strategic Plan.

### Asynchronous Resources Developed

- A section on accessibility and accommodation was added to MacPherson's [New Instructor Handbook](#).

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- Collaboratively designed by the Equity and Inclusion Office and MacPherson Institute, [McMaster's Inclusive Teaching and Learning Guide](#) was launched in the summer of 2020.
- The MacPherson Institute collaborated with the Equity and Inclusion Office to develop supports for the [Teaching Remotely](#) website as well as to provide information for the Accessibility Hub's [COVID response web resource](#) for faculty. There is a comprehensive section on Accessibility in our [Teaching Remotely Guide](#) for educators.
- The self-enroll, asynchronous *Learning to Teach Online* course developed and available on Avenue to Learn for all educators includes a module on "Ensuring Inclusivity", which centers accessible teaching practices and UDL.

### Open Educational-Resources

- In a partnership between the Provost, the Library and the MacPherson Institute, **\$16K** in Open Educational grants were launched and helped to support instructors at McMaster. From May – December 2020 these funds were awarded to a total of **3 projects** across the Faculty of Health Sciences, Faculty of Science and Faculty of Social Science.
- McMaster's Open Educational Resources (OER) Committee, currently co-chaired by the Libraries and the MacPherson Institute, has worked over the past year to adapt and increase use of OER via McMaster's OER By Discipline Guide, numerous webinars, training sessions and asynchronous resources. These resources and development opportunities work to encourage and enhance the practice of open pedagogy, use of OER and Creative Commons licensing.

## Employment

### Advancing Accessibility for Employees with Disabilities

McMaster University is committed to removing barriers to employment for persons with disabilities and promoting inclusive workplaces. Human Resources Services, in collaboration with the McMaster Accessibility Council and the Equity and Inclusion Office, led the following programs and initiatives to advance employment equity for employees with disabilities:

- Focused heavily on digitization and education accessibility given the last 12 months of remote work and much of the University's activities moving online (e.g.

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teaching/research support, COVID-19, employee engagement efforts, mental health and well-being support, etc.)

- Continue to support and manage return to work and redeployment processes available for employees using accessibility principles in mind and in view of accommodation needs/barriers
- Continue to ensure that means of delivering important messages to employees are considerate of individual accommodation needs and accessibility best practices (e.g. accessible platforms, use of fonts / images in training and presentation material, etc.).
- Continue to develop Individual Accommodation Plans for employees requiring accommodation, as well as Individual Evacuation Plans for employees who may experience mobility limitations in exiting a building during an emergency
- Ongoing facilitation of focused accessibility discussions with staff and faculty on how to integrate accessibility into our day to day work responsibilities
- Ongoing facilitation of the Accessible Workplace Accommodation Training for staff and faculty, in collaboration with the AccessMac Program (Equity and Inclusion Office)
- Provide Equitable Recruitment and Selection Committee Training to search committees, to mitigate unconscious bias and ensure equitable outcomes in the search process
- Promote training for staff and faculty on accessible presentations 'Building Accessible Presentations' and 'Building Accessible Media: Accessible Word Documents'
- Provide ongoing recruitment support to Student Accessibility Services and other department and faculties across the institution
- Ongoing support to the Employee Accessibility Network

### **The Employee Accessibility Network (EAN)**

Established in 2017, the [Employee Accessibility Network \(EAN\)](#) was created for employees with disabilities at the University to connect, network and collaborate. The Network was also developed to act as one of the main accessibility consultative groups to the McMaster Accessibility Council, and the University at large, in areas of:

- Disability inclusion,

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- Accommodations,
- Accessibility compliance,
- Aspirational planning, and
- To offer a lens of lived experience to institutional work carried out which may disproportionately impact employees with disabilities in the absence of consultation.

**This past year, the Network has worked together to consult and provide feedback in several areas, including:**

- COVID-19 and the shift to remote environments impacts on employees with disabilities (feedback delivered to the AVP EI to share with the Return to Campus Oversight and Employment Committee).
- Completing a full-scale employee accessibility audit of McMaster's current [McMaster's AODA Compliance Plan 2012-2025](#).
- Additionally, the Coordinator of the Employee Network works continuously to report concerns and experiences to relevant McMaster staff and units that Network members have anonymously discussed during meetings.

**Discussion within the Network this year have included:**

- New barriers being experienced resulting from the pandemic, but also how some barriers have disappeared through the shift to remote environments;
- Considerations for Return to Campus from Disabled perspectives
- Embedding rigorous accessibility and accommodations processes and supports into McMaster's Recruitment and Hiring processes
- Continued inconsistency in the knowledge and implementation of workplace accommodations across the institution through all stages of an employee's career journey;
- Inconsistency around dissemination and take-up of obligations and responsibilities regarding accessibility / accommodation compliance within the McMaster learning and working environment.

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### Advocacy and Awareness Raising

#### December 3<sup>rd</sup> International Day of Persons with Disabilities Celebration

This year's [International Day of Persons with Disabilities](#) was subdued compared to previous years, as a result of the COVID-19 Pandemic shifting event planning to exclusively online spaces. However, the Equity and Inclusion Office was proud to present the [Accessibility and Disability Inclusion Newsletter 2019-2020](#) to the campus community, released the morning of December 3<sup>rd</sup>, 2020. A social media and email campaign accompanied this "slimmed down" version of the full Accessibility and Disability Inclusion Update, and as a result, the Newsletter has been viewed close to 600 times by McMaster community members.

### Moving Forward

This past year saw an additional change to the composition of the McMaster Accessibility Council, with the addition of a representative from the Faculty of Health Sciences. The new Director of Student Accessibility and Case Management is also now represented. The creation of the new role of Manager, Accessibility Program in the Equity & Inclusion Office, continues to create stability in the provision of accessibility oversight for the campus. The coming year will see the addition of a Web Accessibility Strategist jointly reporting to the EIO and UTS.

Finally, we anticipate the retirement of the current MAC Chair, Anne Pottier, who is a longstanding champion and resource for institutional accessibility and AODA compliance. Anne's dedication to accessibility work on-campus throughout the duration of her career at McMaster has provided foundational infrastructure and blueprints which have contributed significantly to the elevated accessibility focus that we've witnessed occurring in particular in 2020. Additionally, her mentorship and support of McMaster students, staff and faculty interested in this work has both directly and indirectly resulted in the development of a distributed and McMaster-grown accessibility and disability-focused expertise that sets the University apart in comparison to our contemporaries. We thank Anne Pottier sincerely for her immense contribution to accessibility work on-campus during her impactful career at McMaster, and wish her the best moving forward into retirement. The MAC will be looking to secure a new Chair for the following year.

The 2019-2020 academic year continued to see increased collaboration and communication around the many accessibility related initiatives which took place across campus, culminating in



## McMaster Accessibility Council 2020 Annual Accessibility Activity Report

the development of the 3rd annual Accessibility and Disability Inclusion Update. It was so wonderful to read the more than 70 submissions which came in from 40+ units and to reflect on what inspirational and creative work is being in this area across campus. And while these submission numbers have not marketedly increased from 2018-2019 to 2019-2020, what has been remarkable to note was how much participation we had from campus community members, despite 2020 being a pandemic year. Additionally notable has been the increase in submissions from McMaster's academic community – researchers, faculty, course instructors, course designers, and TAs – accounting for more than 1/3 of the entire 2019-2020 publication, across several Update categories.

The coming year will see the introduction of a new Accessibility and AODA Planning and Reporting Tool, the finalization of the University's Policy on Accessibility, and accelerated efforts to support Web Accessibility, which is highlighted in the new campus Web Strategy.

We anticipate the release of the new AODA Education Standard later this year and look forward to developing implementation plans related to this new legislation.

We continue to be excited looking ahead to how accessibility and disability-inclusion flourishes in 2021.

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### **Appendix A – 2020-2021 Campus Accessibility Action Plan Projects:**

#### **2020 Projects**

- ADL elevator addition project is in progress.
- JHE North washrooms on ground, second and third floor – New Universal Washrooms on ground floor and third floor, new barrier free single washroom on second floor, and barrier free stall in newly renovated washrooms on Ground floor, second floor and third floor
- **16 building accessibility audits completed**

#### **2021 Projects**

- Building Audits currently going on (8 buildings) – Applied Dynamics Lab, Kenneth Taylor Hall, Life Sciences Building, Communications Research Laboratory, DeGroote School of Business, Institute of Applied Health Sciences, Information Technology Building and Michael DeGroote School of Business, aim to complete them by April 2021.
- JHE South Washrooms – Currently proceeding with the design of new all gender barrier free washrooms on ground floor, second floor and third floor, as well as barrier free stalls in gang washrooms for men's and women's on the second floor.
- Additional accessible drinking water fountains and refilling stations will be installed at various campus buildings.

**Housing and Conference Services have allocated \$100,000 for various accessibility upgrades in HCS buildings in 2021/22. Project selection is currently underway.**

#### **Other CAAP Projects Currently Proceeding or Recently Completed:**

- University Hall Men's and Women's basement washroom upgrades to improve barrier free access
- BSB 148 Washroom – modifications to entrance to make it barrier free

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- Hamilton Hall washroom on Second, Third and Fourth Floors – modifications to the washroom and ADOs on the door
- Nuclear Research Building Washroom – modifications to the washroom and ADO on the door
- IWC washroom A113 – modifications to the washroom
- CNH B110 and B111 – modifications to the washrooms
- Upgrades to lifts on campus – Installing phone lines and card access control for all lifts on campus
- Thode library ADOs on main door
- David Braley Athletic Centre – 3 ADOs on washroom doors

### Appendix B – AccessMac Accessibility Program Consultation and Training (2019-2020 Reporting Year)

#### AccessMac Accessibility Program

##### Accessibility and Disability Support-Related Consultations (**Total**)

Type of Consultation	# of Consultations
<b>Accessibility and/or Disability Inclusion Consultations:</b> Broad campus community	141
<b>Support-Related Consultations / Referrals:</b> Persons with lived experience of disability	24

##### Accessibility and Disability Support-Related Consultations (**COVID-Related**)

Type of Consultation/Support	# of Consultations
<b>Accessibility and / or Disability Inclusion Consultations:</b> Broad campus community	59

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<b>Support-Related Consultations / Referrals:</b>	11
Persons with lived experience of disability	

### Top 3 Themes for COVID-Related Consultations:

1. Captioning and digital content accessibility
2. Integrating and enabling accessibility within online / virtual teaching and learning and work environments
3. Supporting persons with disabilities in the shift to remote work / learning environments online / virtual teaching and learning and work environments

### Education: Workshops, Presentations and Training

Type of Education	# of Sessions	# of Participants
Synchronous workshops and training	1) 25 in-person / synchronous	1) 1,200
Asynchronous workshops and training	1) 3 asynchronous Student Leadership Training course shells / sessions  2) 13 online sessions <a href="#">AODA and Human Rights Code</a>  3) 4 online <a href="#">Accessible Education</a> sessions (FLEX Forward)	1) 266 2) 2000 3) 650

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### Disability-Centric Events and Meetings

Type of Meeting / Events	# of Sessions / Meetings	# of Participants
International Day of Persons with Disabilities Commemorative Events	1) Launch Party and Publication of the <a href="#">2018-2019 Accessibility and Disability Inclusion Update</a>  2) Self-Advocacy and Disability Rights Disability Discussion	1) 50 2) 20
Employee Accessibility Network	8	120
Disability DIScussions	4	55
Engineering Design-Think Accessibility Workshop	1	50
Ross MacDonald School for the Blind McMaster Visit	1	30

### Highlights of Notable Successes and Opportunities

#### Training

- Co-development with MacPherson Institute: New chapter in the *FLEX Forward: Accessible Education* training for McMaster instructors and faculty on Accessibility in Online and Technology-Enhanced Learning.
- Co-development and launch with Faculty of Sciences: *Accessible Document Webinar* series with Faculty of Sciences; available asynchronously from [Microsoft Sway](#) and [MacVideo channels](#) and synchronously from the AccessMac Program.
- Development of fully asynchronous *Accessibility and Disability Inclusion Student Leadership* training (used by: Archway Program; McMaster Student Union Part-Time

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managers and volunteers; Wellness Centre's newly launched Caring Communities Network and McMaster Institute for Research on Aging (MIRA)).

- Redevelopment with Employee Health Services (HRS): *Accessible Accommodations for McMaster Managers* training for remote work / COVID context
- Co-development with Engineering Co-op Services: *Accessibility and Disability Inclusion Module* within the EDI Module series for Engineering Co-op students.

### Large Accessibility Consultations and Projects

- Redevelopment and re-drafting of the overarching University Policy on Accessibility (Spring 2020-ongoing).
- Collaboration with the McMaster Accessibility Council (MAC), and the Employee Accessibility Network (EAN) to audit and work toward redeveloping [McMaster's Accessibility Plan 2012-2025](#) (Fall 2019- Fall 2020).
- Establishment of the Barrier Free Standard Committee in collaboration with Facilities, the Libraries, Student Accessibility Services (SAS) and Residence Life (Fall 2019).
- Development and launch of the User Testing Pilot Program for website accessibility testing with funding from the (SSC) Career Access Professional Services (CAPS).
- Development, launch and communication of the [COVID-19 Response for Accessibility section](#) on the Accessibility Hub for Faculty, Staff and Students, including the McMaster online closed captioning protocol and accompanying resources (Spring 2020).
- Co-development of a cross-campus McMaster Captioning Strategy for Online Teaching and Learning in collaboration with the Libraries, SAS, MAC and McMaster Faculties (Spring 2020).
- Collaboration with the Faculty of Sciences to develop and hire Accessibility Digital Media Specialist within the Faculty (Spring 2020).
- Co-development and launch of the [IDEAS grant initiative](#) with the MacPherson Institute (Summer 2020-ongoing).



# 2021-2022 Consolidated Budget

University Planning Committee  
May 12, 2021

**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: **Santee Smith**  
President, Vice-Chancellor and Chair of the Senate: **Dr. David Farrar**  
Provost and Vice-President Academic: Dr. **Susan Tighe**

## McMaster Model

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

## Degrees Granted (in 2019/20)

**7,861**

## Student Enrolment Headcount (as of fall 2020)

Undergraduate: **31,533**  
Graduate: **4,917**  
Domestic: **30,710**  
International: **5,740**

## Average Entering Grade (in fall 2020)

**90.04%**

## Faculties

**6** (DeGroote School of Business, Faculty of Engineering, Faculty of Health Sciences, Faculty of Humanities, Faculty of Science, Faculty of Social Sciences)

## Full-Time Faculty (excluding Clinicians, 2019)

**888**

## Staff (2020)

**11,862**

## Alumni (2020)

**205,810**

## Research Funding

**\$353.5 million** awarded in research funding in 2019/20 (McMaster and affiliated hospitals)

## World Ranking

Shanghai Ranking (2020): **98<sup>th</sup>**

Times Higher Education (2020): **69<sup>th</sup>**

QS World Ranking (2020): **144<sup>th</sup>**

Times Higher Education Global Impact Rankings (2021): **14<sup>th</sup>**, including:

**1<sup>st</sup>** in Canada for Good Health and Well-being, Decent Work and Economic Growth and Partnerships for the Sustainable Development Goals

**2<sup>nd</sup>** in Canada for Working to Reduce Inequality

**2020** – Canada's most research-intensive university – Research Infosource Rankings

## Campus

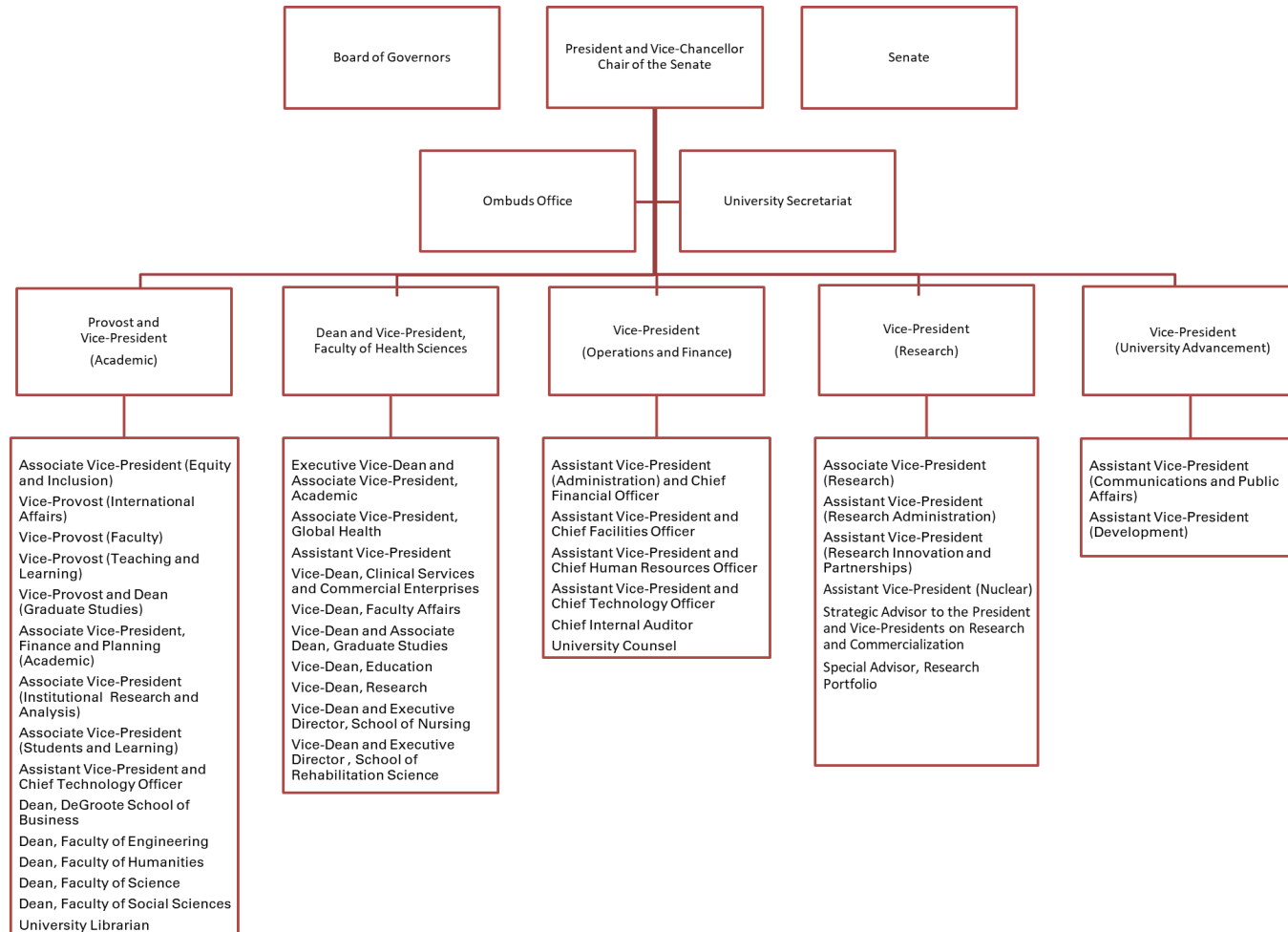
**152.4** hectares of property

**4** libraries, **13** residence buildings, **1** athletic complex

Nuclear Reactor, WJ McCallion Planetarium, McMaster Museum of Art

**5** campuses (Main campus in West Hamilton, and 4 additional campuses)

## 2 ORGANIZATIONAL CHART



### 3 MESSAGE FROM THE PRESIDENT



I am pleased to present McMaster's consolidated budget for 2021/22. Over the last year we have demonstrated our ability as a university and a community to respond to the pandemic, and pivot our approaches to deliver programs and courses in a largely virtual environment. McMaster's longstanding financial resilience has been a great asset during the pandemic and our enrolment figures indicate that the University continues to be attractive to both domestic and international students. While we cannot say with certainty what the next year will hold, McMaster will continue to be innovative and thoughtful in our programming and approach to campus life, and responsive to the health and safety needs of our campus community.

The consolidated budget is structurally balanced, which enables the University to look to the future and invest in strategic priorities. Throughout 2020 I engaged in a broad consultative process to understand the aspirations and goals of our McMaster community. This led to the development of our refreshed vision statement, which indicates the depth of our collective desire for positive societal impact: **Impact, ambition, and transformation through excellence, inclusion and community: advancing human and societal health and well-being.**

Additionally, the following five strategic priorities will focus McMaster's strategic spending during 2021/22 and for the following two planning years:

- **Inclusive Excellence** – aspire to embed an inclusive approach that intentionally engages and respects a diversity of peoples, perspectives, and ways of knowing, in everything we do.
- **Teaching and Learning** – further advance and support innovation in teaching and learning, within and beyond the classroom, and across disciplines and Faculties, to elevate teaching as a professional discipline, and equip our students with the knowledge and skills needed to make a transformative impact on our world.
- **Research and Scholarship** – be the go-to place for world-class researchers and collaborators who share our values and commitment to working together across disciplines, sectors, and borders to develop knowledge, tackle global issues, and advance human understanding.
- **Engaging Local, National, Indigenous, and Global Communities** – further develop and expand our network of longstanding and respectful partnerships with communities, partners, research collaborators, and supporters for the benefit of all.
- **Operational Excellence** – enable the administrative operations of the University to most effectively support the institutional vision and aspirations of our community of researchers, scholars, teachers, and learners.

I would like to acknowledge and thank each department and unit for their extraordinary work and contributions during these unprecedented and challenging times. Despite the difficulties we continue to face, I am optimistic about the future and look forward to working with the University community over the coming years to focus on the opportunities ahead. I have no doubt that we can accomplish great things together.

Sincerely,

David Farrar

President and Vice-Chancellor

## 4 MESSAGE FROM THE PROVOST



I am very pleased to present McMaster University's 2021/22 budget to the University community. The budget supports our mission to advance discovery, innovation, impact, and dissemination of knowledge while considering strategic priorities.

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 fostering opportunities for experiential, work-integrated, reflective, self-directed, and active 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.

Strengthening the excellence of our research, our graduate education and training through opportunities to integrate research more purposefully into our academic mission. We strive 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. Our graduate training is central to sustain our research intensity; we are committed to equipping graduate students in all programs with the practical skills, experiential knowledge and ethically informed judgment that will enable them to translate their academic achievements into success after graduation.

Enhancing the connections between McMaster and the communities we serve, locally, provincially, nationally and around the globe. We do this by fostering ongoing collaborations across the University, but also with many external partners. This provides a platform for the McMaster community 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.

Under the current enrolment corridor mandated by the Ministry of Colleges and Universities, McMaster has exceeded the upper limit for enrolment of domestic undergraduate and graduate students. Therefore, increases in enrolment will come from an intensified and diversified international recruitment, which is not limited by the Ministry's funding cap. 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. The ongoing COVID-19 pandemic stands to impact McMaster University and all Ontario universities given the uncertainty of in-person capacity as the vaccine rollout continues to unfold.

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.

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,  
Susan Tighe  
Provost and Vice-President (Academic)



## 5 EXECUTIVE SUMMARY

The 2021/22 consolidated budget is structurally balanced with a \$78.8 million surplus. The operating fund is structurally balanced with a \$42.3 million surplus before one-time expenditures of \$47.1 million planned to advance McMaster's refreshed vision and strategic plan. The ancillary funds have been impacted the most by the pandemic due to campus closures with an opening deficit of \$8.2 million. After cost mitigation efforts, the ancillaries 2021/22 budgeted net surplus is \$2.7 million based on a hybrid fall opening.

The budget holds operating grant revenues flat and close to 2016/17 levels and domestic tuition is budgeted without any inflation. The province announced its domestic tuition framework extension for 2021/22 which may lead to some in-year financial adjustments, with up to 3% inflation allowed for out of province domestic students. International participation reached over 16% in 2019/20 and is projected to grow up to 20% with increased diversification over the next decade. International growth budgeted is reflective of past years realized growth, however application offers are behind past years confirmation rates. This trend is being monitored with low risk to the net budgeted results due in part to the delay flexibility around one-time capital investments driven from Faculty level initiatives.

Approved capital projects, such as the expansion of the student's athletics facilities, the McLean Centre for Collaborative Discovery, research commercialization space, and two public-private partnership residences are continuing as planned with a net capital expenditure of \$90 million in 2021/22. Capital initiatives to support the strategic plan, such as Global Nexus, and other local Faculty projects to support student experiential learning are included in the budget and planning years. Capital transfers from the operating fund are included as one-time budgeted allocations confirmed each April following the fall and winter academic year when final enrolments and annual results are known.

The consolidated budget includes additional debt financing of \$150 million to support capital and strategic initiatives associated with McMaster's strategic plan. The annual interest costs are budgeted and included in the financial metrics tracked in the Annual Financial Report and reporting to the Board of Governors. With the additional debt McMaster continues to hold very strong financial health metrics and is rated above the province as AA stable by DBRS and S&P credit rating agencies.

In 2020/21 one Ontario university entered creditor protection due to many factors. The financial health of this university declined over several years evidenced by the financial metrics tracked and reported to the province. While the circumstances around this university are very different from the operations of McMaster, the sectoral impact associated with one university entering creditor protection is not yet clear. The province has assigned a supervisor and substantial expense cuts have been publicly announced for this one university. Any further sectoral implications are not yet known. However, the Ontario universities have offered the province financial health metric thresholds to assist in future monitoring of each university and to aid in the early detection of financial erosion.

McMaster's enrolment demand has remained strong despite the pandemic. Global reputation and rankings have continued to assist in attracting the best and brightest students. McMaster has been instrumental in COVID-19 and personal protective equipment research. Overall, our evidence-based approach to medicine and the advancement of knowledge supporting health and societal issues, including mental-health, remain a key strength to the student-centered research-intensive experience McMaster uniquely offers. This budget and planning years are supported by McMaster's strength.

Figure 1: Operating Fund Outlook

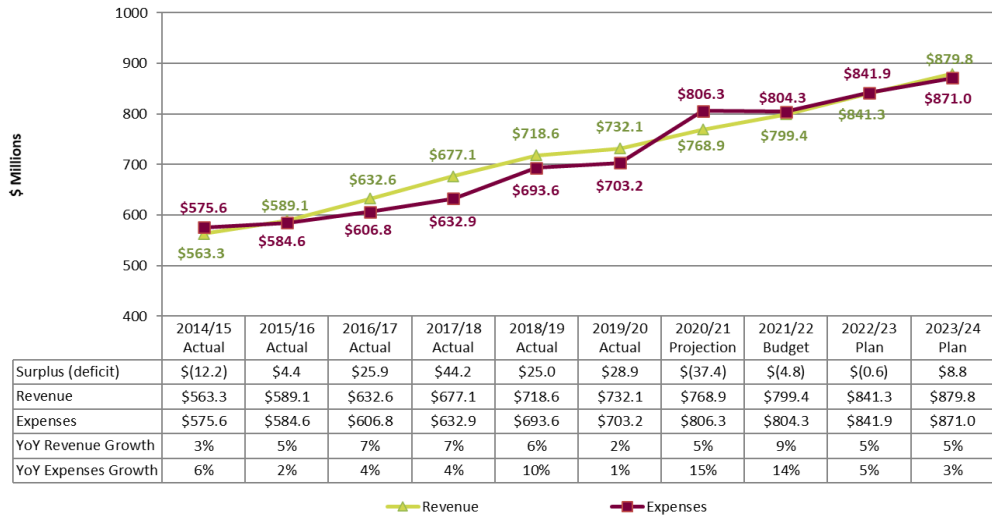


Figure 2: Operating Fund Appropriations

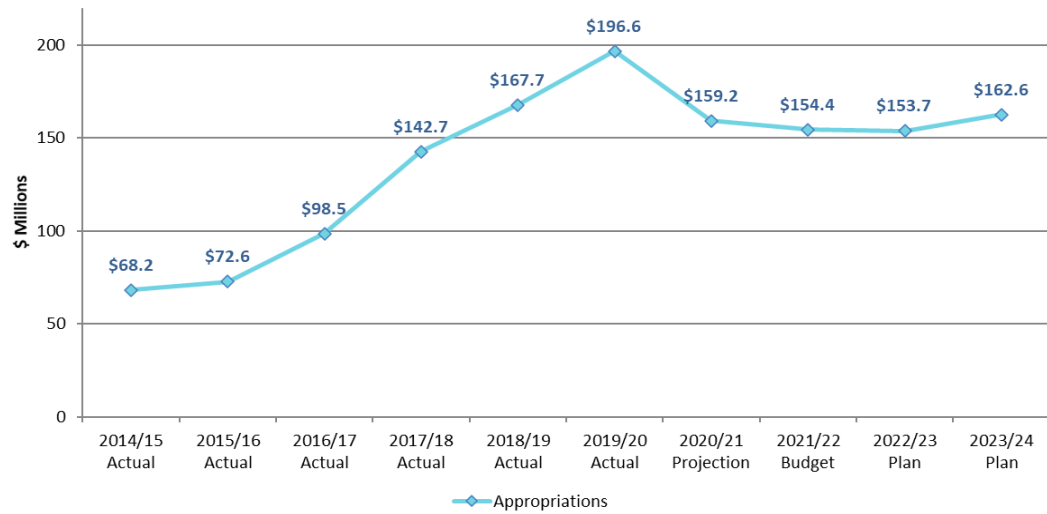
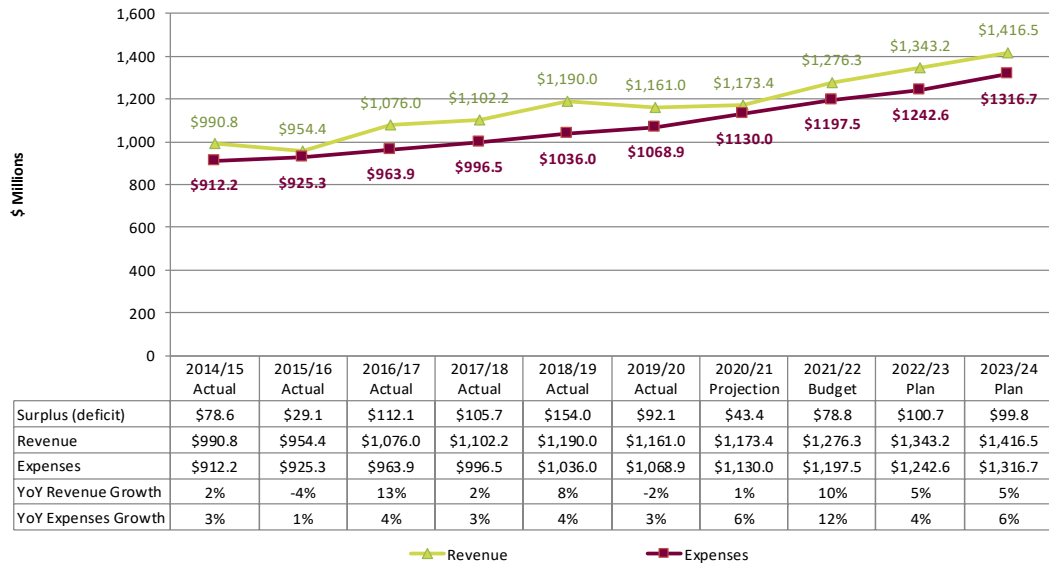


Figure 3: Consolidated Outlook



## 6 McMASTER'S KEY STRATEGIC HIGHLIGHTS

### 6.1 REFRESHED VISION STATEMENT AND STRATEGIC PLAN

As noted in the President's message, McMaster's refreshed vision statement and new strategic plan capture McMaster's collective aspirations and desire for positive impact, as well as our University commitment to inclusive excellence and serving the global community to advance human and societal health and well-being. Our vision is to use our collective skills, knowledge, and understanding to improve the world, addressing issues ranging from climate change to global sustainability and equity. The vision statement and strategic plan were developed following several months of consultations and discussions across the McMaster community. Five clear institutional priorities emerged that will shape strategic spending in the budget and planning in the years ahead.

### 6.2 STRATEGIC MANDATE AGREEMENT

The Strategic Mandate Agreement (SMA3) captures McMaster's areas of strength, growth, and direction and as such aligns well to the refreshed vision and strategic plan. The SMA3 is an agreement between McMaster University and the Ministry of Colleges and Universities (MCU) that includes key metrics or targets covering May 1, 2020 to April 30, 2025. The achievement of SMA3 metrics within acceptable ranges will affect future funding allocations beginning in 2022/23, reflecting a two-year pandemic-driven delay to any funding implications. This delay enables McMaster to have funding certainty on its operating grant budget for 2020/21 and 2021/22. Planning years assume McMaster will achieve its targets required to retain current operating grant levels, which are materially reflective of the 2016/17 grant.

The budget process engages all Faculties and support units to develop a structurally balanced budget that highlights how resources are invested to deliver McMaster's strategic priorities and SMA3 metrics. The MCU has extended the domestic tuition framework into 2021/22 but allowing up to 3% inflation for out of province students; for conservatism domestic tuition has been held flat (0% increases). Annual international tuition rate increases of 6% to 10% remain in place, along with growing diversified international student participation in 2021/22 and beyond to approximately 20% international participation.

### 6.3 RESEARCH

The *Research for a Brighter World — Strategic Plan for Research 2018-2023* (BWRI) is embedded within McMaster's Strategic Plan setting out research objectives to further advance human and societal health and well-being. BWRI 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 future initiatives of local, national, and global importance. BWRI will help deliver on McMaster's refreshed vision by building on our strengths and ensuring our knowledge reaches those who can put it to its best use, through translation and mobilization, technology transfer, and commercialization.

The pandemic has brought sharp focus to the importance of research innovation and the need for interdisciplinary approaches to solve the biggest problems facing society. McMaster is world-renowned for its evidence-based transformative approach to medicine and can deliver positive wide-ranging impact in areas of physical and mental health, pandemic preparedness, climate change, social

justice, Indigenous Ways of Knowing, and advanced manufacturing, to name a few. McMaster will draw on its research strengths to enable a more equitable and sustainable future for everyone.

A key area of focus for McMaster is the impacts we can make through our research and scholarship, particularly as it relates to the United Nations' (UN) 17 Sustainable Development Goals. McMaster's initial focus aims to deliver Canada's Global Nexus for Pandemics and Biological Threats, which is a truly interdisciplinary facility engaging all six Faculties and providing undergraduate learning opportunities to support the next generation of professionals needed to tackle the world's greatest problems driven by population growth, drug resistance, and more. Nexus provides a path to deliver global impact drawing upon the work undertaken across labs, libraries and offices in collaboration with partners while growing diversified revenues to further invest in research that tackles key societal challenges.

## 6.4 CAPITAL MASTER PLAN

McMaster's current capital master plan (2017-2022) is a key planning document guiding priority-setting and planning of capital projects in support of McMaster's mission, vision and strategic plan. In 2021/22, McMaster will undertake a consultative approach to update the capital master plan. The objective of the master plan update will be to directly link the five-year outlook to the most impactful priorities in support of the updated strategic plan, with a focus on learnings from the pandemic, sustainability, climate change and resiliency, carbon neutrality by 2050, land reconciliation, and a healthy campus and community interrelationship.

The consolidated budget includes capital plan priorities that are informed by academic enrolment plans and strategic priorities. The annual capital plan is integrated into the University's multi-year projections summarized into an annual Debt Strategy Report. The debt strategy determines the University's financial capacity to fund key priorities and examines whether internal and/or additional external financing is needed. In 2021/22 the budget includes additional debt financing of \$150 million (see Section 12) to support the strategic plan and its capital priorities.

Additional supplementary plans, such as the Campus Master Plan, the Campus Capacity Study, the Asset Management Plan, the Campus Accessibility Action Plan, and the Energy Management Plan are available on the Facilities Services web pages<sup>1</sup>.

## 6.5 ENTERPRISE RISK MANAGEMENT (ERM)

The Enterprise Risk Management Program involves a collaborative approach to identifying opportunities and risks associated with McMaster's mission, vision, and strategic plans. The opportunities and risks are reviewed annually by the Enterprise Risk Steering Committee, which comprises the President and Vice-Presidents. The review ensures the University's risk register remains current and major risk mitigation strategies are updated and summarized by risk leaders.

There are nineteen key risks based on net residual risk. The 2021 key risks are:

Geopolitical

Change Readiness

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<sup>1</sup> <https://facilities.mcmaster.ca/>

Government Policy	Physical Infrastructure
Mental Wellness	Leadership
Research	Undergraduate Student Enrolment
Research Infrastructure	Technology
Partnership	Financial
Pandemic	Attract Graduate Students
Information Security	Student Experience, Satisfaction & Retention
Reputation and Brand	Information Availability & Quality
People	

Multi-year financial projections used to produce the consolidated budget examine key material risk scenarios converging financial planning with risk management. Key material risk scenarios associated with government policy, pandemic, physical infrastructure (climate-related risks), information security, and geopolitical (international participation) are run for presentation to Provost's Council, the President and Vice-Presidents, and Board governance committees. This approach reflects an integrated reporting framework that aligns with McMaster's adoption of the Task Force Recommendations on Climate-Related Financial Disclosures which requires an annual assessment of climate-related risks.

## 7 CONTEXT

### 7.1 COVID-19

The COVID-19 pandemic had widespread impacts across the University campus and on the operations of the University, which have materially affected financial projections. Several adjustments were made to revise the 2020/21 consolidated budget, approved in November 2020. The 2021/22 consolidated budget reflects a hybrid return approach beginning fall 2021. While most staff and students working remotely has resulted in lower expenses, new expenses have emerged to support these remote activities. Ancillary student support operations remain the most severely impacted by the campus closures, resulting in significantly lower revenues and associated labour changes. McMaster has supported its ancillaries with some temporary rent relief while other deficits remaining in the ancillaries will be addressed when operations resume.

### 7.2 FINANCIAL CONTEXT

The financial health of McMaster going into the pandemic has contributed to its financial resiliency throughout this unprecedented period. The same is not equally true across all Ontario higher education institutions. Universities that have a reliance on an annual inflation-linked tuition frameworks and special purpose grants, with lower international participation, less appropriations, and that are highly leveraged (debt-financed) have struggled far more, with one Ontario university entering creditor protection in early 2021. While universities with the profile described above are at greater risk than others, it is unclear what the system-wide consequences might be across Ontario higher education.

McMaster is optimistic that independent credit ratings and strong institutional internal control frameworks can be drawn upon to provide assurance to MCU and other stakeholders in their differentiation assessments across universities. McMaster is financially resilient and sound, undertaking financial scenario planning and routinely monitoring financial metrics. Further, McMaster reconciles and reports restricted funds to Board governance and even though funds are co-mingled across cash and investments, restricted funds remain in liquid assets and are used only for intended purposes.

### 7.3 REVENUE GENERATION ENVIRONMENT

#### 7.3.1 ENROLMENT TRENDS

Provincial grants for domestic enrolment make up 30% of the Operating Fund's budgeted revenues (or 19% of the consolidated budget). Domestic tuition accounts for another 24% of the Operating Fund budgeted revenue (or 15% of the consolidated budget). Domestic grant growth has been limited over recent years due in part to the corridor funding model introduced in 2017/18, which maintains 2016/17 funding levels except for graduate expansion allowances up to 2019/20. In addition, domestic tuition was reduced by 10% in 2019/20 (a negative impact of \$22.3 million) and held at flat for 2020/21. The tuition framework was extended into 2021/22 and for budget planning purposes a flat or 0% increase assumption has been used. Without any form of domestic inflationary funding McMaster has focused on its revenue diversification and alternative revenue generation initiatives to keep total revenues at pace with annual expense inflation and necessary investments.

McMaster has increased international enrolment across certain programs over recent years to address provincial funding constraints. Despite the pandemic, domestic and international demand for McMaster's programs remains strong. The 2021/22 international enrolment confirmations are behind progress to date in prior years due in part to Canada's national vaccination position, however McMaster is confident that planned enrolments will materialize (see also Section 8.6.1). In 2020/21 domestic enrolment rose above the funded corridor ceiling resulting in approximately \$22 million in unfunded grants for domestic participation. In 2021/22 McMaster's objective is to achieve traditional funded domestic and international targeted growth enrolment figures.

McMaster's application growth for 2021/22 (as at April 2021) is domestically 13.8% over prior year (exceeding the census university-age population growth rate which is just under 1%). International application growth for this same period is 2.6% higher than at this time last year. Application demand suggests that budgeted enrolment plans are achievable and aligns with the capacity-enabling infrastructure initiatives such as the Peter George Centre for Living and Learning (opened in 2019), the McLean Centre for Collaborative Discovery at the DeGroote School of Business (opening 2023), and two additional public-private partnership projects to provide approximately 2,000 additional student residence beds.

### 7.3.2 PROVINCIAL GRANT FUNDING

The Ministry's corridor funding model caps provide 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 for each eligible domestic student is based on weighted grant units (WGU) by program limited to the enrolment corridor mechanism<sup>2</sup>.
2. Differentiation (or performance- or outcomes-based) funding is the portion of grant linked to the achievement of SMA3 metrics. This funding focuses on differentiation across the higher-education sector, student success, and strengthening existing areas of excellence.
3. Special purpose grants are based on government or system priorities, such as improving access for Indigenous learners, francophone students, and students with disabilities.

The University's performance-based funding is currently 25% of overall grant revenue, however this will grow to approximately 60% during the SMA3 period ending in 2025 with the offset reducing enrolment-based funding (proportional reductions to WGU per student enrolled). MCU has delayed metric funding impacts until 2022/23 due to the pandemic. The delay provides grant funding certainty for 2021/22. Future budgets will be based upon metric targets and achievement within reasonable boundaries (also referred to as bands of tolerance). Failure to meet metric target ranges will result in funding reductions and redistribution to other universities meeting metric targets. McMaster expects to meet SMA targets and has not factored in any operating grant funding increases to its planning years, nor any reductions.

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<sup>2</sup> 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 for the SMA3 is set at the 2016/17 level plus the addition of Funded Graduate Expansion Spaces over the 2016/17 base.



Finally, a Student Choice Initiative introduced by MCU in 2019/20 required universities and student organizations to allow an opt-out process for non-essential fees. The Ontario Divisional Court reversed this requirement in November 2019 after its implementation. The Student Choice Initiative has since been in an appeal process between MCU and the Ontario Court of Appeal and a decision is pending. If the appeal is successful and the initiative is reinstated, students will have the option to opt out of non-essential fees paid to student organizations. In 2019/20 when the SCI was implemented, a minority of students opted out. Although there is no direct impact on the university, these organizations contribute to the student experience and provide services that may need to be assumed by the university if reduced.

### 7.3.3 TUITION

As covered in earlier sections, the domestic tuition framework for 2021/22 extended the freeze, but allows up to 3% inflation for out of province domestic students. The consolidated budget and planning years have assumed a 0% or flat framework for all domestic. As the tuition framework allows for modest inflation there will be a small favourable budget implication.

International tuition rates increase based on demand and market conditions associated with each program. Rate increases range between 6% to 10% and are monitored relative to McMaster's key peers.<sup>3</sup> International tuition covers costs covered domestically by the combined grant and tuition. For each international student enrolled McMaster's operating grant is taxed \$750.

## 7.4 INVESTMENT RETURNS

McMaster is a signatory to the United Nations' Principles for Responsible Investing, and in April 2018 a decarbonization strategy was initiated to reduce carbon emissions and increase green investments. Further, in 2020 McMaster set an objective to lower carbon intensity by 45% by 2030. Progress to date:

- Weighted average carbon intensity of the investment pool is 33% lower at April 2020.
- Invested assets in the Carbon Underground 200 (CU200), representing the top 100 oil and top 100 coal reserve holding companies, is lower by 53% reducing CU200 from 4.5% of the portfolio to 2.1% of the portfolio at April 2020. The 2021/22 budget year aims to reduce CU200 to under 1%.
- Growing clean technology investments, which represent 24% of invested assets at April 2020 to over 30% in 2021/22. Clean technology investments include energy efficiency, alternative energy, sustainable water, pollution prevention, and green buildings.

Beyond these strategies all invested assets, including pensions, integrate environmental, social, and governance considerations in hiring investment managers and monitoring quarterly performance reports. During the 2021/22 budget cycle McMaster's decarbonization strategy will further integrate a fossil fuel divestment approach aligned with McMaster's vision and strategic plan. The divestment

<sup>3</sup> 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.

initiative will serve to advance McMaster's clean technology investments while also delivering on the United Nations call to all organizations globally to accelerate the clean energy and sustainable economy transition.

The investment strategies have not compromised performance. Budgeted investment returns after inflation remains at 5.6%. The \$1.4 billion investment pool holds funds associated with endowments and internal reserves established to settle future obligations. Annual income and losses flow through McMaster's consolidated results in accordance with the accounting policies in Appendix 5. For each plus or minus 1% difference from the 5.6% return budgeted, the Statement of Operations and Statement of Financial Position are each affected by a \$6.2 million financial impact.

McMaster's financial strategies to address market volatility and preserve spending commitments include:

- Annual investment income and losses on internal reserves are allocated to a specific purpose reserve, which can be drawn upon to maintain spending levels during extraordinary times.
- The Operating Fund is allocated a fixed \$9.5 million per year from the specific purpose reserve regardless of returns related to the two supporting trusts (refer to Section 10.1.1.4 for details).
- Annual endowment spending approximates \$19 million per year, based on achieving 4% per year on five-year average market returns. Additionally, the specific purpose reserve preserves two years' annual spending requirements that can be utilized to maintain support during periods of prolonged market downturn for trusts that do not allow for encroachment on the original balance.

McMaster also manages pension plan assets of over \$2.2 billion, which are offset against the pension obligations and reported on a net basis. Strategies for funding the pension plans are discussed in Section 7.9.

## 7.5 RESEARCH FUNDING

On April 19, 2021, the federal government released Budget 2021. This document contained funding commitments for a wide range of research and innovation. The centrepiece of these commitments is \$2.2 billion over seven years towards growing the domestic life science sector via the Strategic Innovation Fund, with a focus on biomanufacturing. This includes support for the bioscience capital and infrastructure needs of post-secondary institutions and research hospitals, a new Tri-Agency biomedical research fund, support for commercialization in the life sciences sector, research into stem cell and regenerative medicine, renewal of the Strategic Innovation Fund to be targeted toward promising domestic life sciences and biomanufacturing firms, and an increase to clinical research capacity.

McMaster is well-positioned to advance the federal government's efforts to strengthen Canada's biomanufacturing capacity. Recently, the Centre for Commercialization of Regenerative Medicine (CCRM), a leader in developing and commercializing regenerative medicine-based technologies and cell and gene therapies, and McMaster Innovation Park (MIP), announced their intent to partner in the development of a biomanufacturing campus at MIP. The partnership, focused on regenerative medicine-based technologies and cell and gene therapies, builds on McMaster's research expertise, facilities and strong innovation culture in applied research and development in life sciences and biotechnology.

The overall commitment for the Strategic Innovation Fund will also include funding to support projects in the automotive, aerospace, and agriculture sectors, as well as the Net Zero Accelerator. This will scale up support for projects to help decarbonize heavy industry, support clean technologies and help accelerate domestic greenhouse gas emissions reductions by 2030.

Beyond the Strategic Innovation Fund, the federal government has committed funding for Mitacs, the Tri-Agencies and the Canada Foundation for Innovation, including expanding the Industrial Research Assistance Program, mental health supports, and the environment and clean technology programs. Of particular importance to McMaster is the ongoing allocation to help address antimicrobial resistance. Investments will support efforts to prevent the inappropriate use of antimicrobials and expand efforts to monitor the emergence of antimicrobial resistance in Canada.

As outlined in our equity, diversity and inclusion (EDI) strategy, *Towards Inclusive Excellence*, McMaster is committed to excellence in research and training for the benefit of Canadians. Achieving a more equitable, diverse, and inclusive research enterprise is essential to creating the excellent, innovative and impactful research necessary to seize opportunities and to respond to global challenges. McMaster was one of the first postsecondary institutions in the country to endorse *Dimensions: Equity, Diversity and Inclusion Canada*, a pilot program from the Government of Canada designed to transform research culture by strengthening EDI. Dimensions seeks to foster EDI within the research communities of Canadian universities and colleges by promoting and recognizing institutional efforts to identify and eliminate obstacles and inequities, support equitable access to funding opportunities, increase equitable and inclusive participation, and embed EDI-related considerations in research design and practices. In alignment with this initiative, the Canada Research Chairs (CRC) program recently introduced EDI requirements which must be satisfied if participating institutions are to continue submitting new CRC nominations. As a result of McMaster's ongoing efforts to promote EDI principles and practices, we continue to submit new nominations and are developing a truly diverse complement of Chairholders whose perspectives and leadership strengthen our research enterprise.

In response to the COVID-19 pandemic, both the Government of Canada and the Province of Ontario have strongly supported efforts to fight the disease, mitigate the impacts on individuals, families and businesses, and rebuild the economy. Building on the University's internationally recognized strength in infectious disease and antimicrobial resistance research, McMaster has established Canada's Global Nexus for Pandemics and Biological Threats, an international network of researchers, government, industry, health care and other partners with the shared goal of working together to find solutions to the current pandemic, while preparing for future global health threats like antimicrobial resistance. Since the beginning of the COVID-19 pandemic, our federal, provincial and industry partners have invested \$55 million to support more than 150 research projects across our campus. These investments include \$1 million from the federal government to support the McMaster-led COVID-19 Evidence Network. The Network will bring together experts to collaborate and rapidly synthesize the latest research on COVID-19 public health measures, clinical management, health-system arrangements, and economic and social impacts, to provide policymakers with the evidence they require to make informed decisions regarding the health and well-being of Canadians.

In 2020, the Province of Ontario invested \$50 million in the Ontario Together Fund to support innovative efforts to improve our understanding of COVID-19 and strengthen the capacity of Ontarians to respond to the disease. Investments from the Ontario Together Fund include \$1.2 million for McMaster's Centre of Excellence in Protective Equipment and Materials (CEPEM), Canada's first and only research hub dedicated to developing, testing and validating personal protective equipment

(PPE). Through the CEPPEM, more than 100 faculty, technical staff and students are collaborating with regional manufacturers and government agencies to design, develop and test PPE and thereby strengthen Canada's supply chain.

Ontario Budget 2021 saw a long-term commitment to research and infrastructure with an investment of \$500 million to the Ontario Research Fund over the next 10 years. The investment will leverage an additional \$700 million in funding from other jurisdictions and the private sector. The budget also committed \$1.5 million in intellectual property (IP) expertise and policy development, signaling the government's recognition of the essential role of Ontario's universities in commercialization outcomes. As Canada's leading university in corporate research income (Research Infosource 2019), McMaster looks forward to working with the province to expand upon the academic and extracurricular IP education and awareness programs recently initiated by the University and to strengthen the efforts of the McMaster Industry Liaison Office to incorporate best practices and policies.

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. In 2020/21, these federal and provincial grants to McMaster are projected to total \$15 million and \$3 million, respectively. Although actual indirect costs exceed 40%, in 2020/21 the federal Research Support Fund (RSF), including the new Incremental Project Grant (IPG) program, paid indirect costs to McMaster and its affiliated hospital partners at 21.7% of all eligible Tri-Agency receipts, a slight increase from 2019/20. 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.

## 7.6 FACULTY RENEWAL

The Faculty budget plans, taken together, include an 11% overall increase in faculty complement over the next three years to address the growth in student-to-faculty ratios and additional programming. 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 forecast within the existing complement. In 2020/21, renewal of 8% of existing faculty occurred through retirements/lapses and an additional 5% is planned for 2021/22.

## 7.7 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. 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

effects 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 0.7%, broadly in line with Canada in 2020. The Bank of Canada targeted inflation for Canada at 2% in 2020, prior to the impacts of COVID-19 on the Canadian economy. Following a decline in real GDP of 5.5% in 2020, the Bank is projecting the economy to grow by 4% in 2021, and inflation to return to the 2% target level.

In 2019/20, McMaster launched an e-procurement shopping cart project aimed at delivering savings by increasing pre-negotiated contract buying. The project, MacBuy, has delivered savings of \$11.3 million to date accruing to the research units, Faculties, and departments using this system. The MacBuy results are tracked and reported as a key performance indicator on the Financial Affairs website<sup>4</sup>. This project assists in defraying some inflationary pressures.

Brand, reputation, and ranking improvements are driving some cost inflation affecting books and academic journals. Higher rankings often include higher-tiered pricing, pressuring library budgets. Competition among publishers has declined and monopolies control key academic journals. The average acquisition costs for books and journals inflates by over 5% annually, with some individual titles increasing even more.

Utility prices also remain volatile. The largest cost pressure is any increase in electricity rates, which are affected by the Global Adjustment for provincial infrastructure and changes to the electricity market. Facility Services is investigating options to mitigate electricity costs escalations, however due to the pandemic-driven campus closures the 2021/22 budget is expected to be favourable. Utility-driven project priorities include a peak shaver project to reduce cogeneration hours from over 8,000 per year to under 500 hours per year, which will contribute to a 40% reduction in campus carbon emissions and assist in managing utility costs associated with the federal Output-Based Pricing System (OBPS), which adds a \$0.04 tax to a cubic meter of gas consumed each year (2019 to 2022). The City of Hamilton is also planning water rate increases.

Construction has seen unprecedented cost increases in the past year where COVID-19 impacted supply chains and the material costs remain volatile. Based on "Commodity Markets Outlook" report, material prices for steel have gone up 25% in Q3 2020 and have increased by up to 15% for several major materials. Costs have continued to rise due to the duration of the pandemic and high demand in the market. The cumulative effect of these factors on construction costs has been up to 25% in increased cost and remains a risk going forward.

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 to meet higher costs.

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<sup>4</sup> <https://financial-affairs.mcmaster.ca/>

## 7.8 CURRENCY EXCHANGE RATES

McMaster's imported goods and services are in US dollars (USD). The Canadian dollar has fluctuated in value over the past several years, from trading at par in January 2013 to \$0.80 USD at end of March 2021. To mitigate the financial impacts of currency exchange Financial Affairs retains USD deposits to settle USD expenditures minimizing exchange risk. Deposit accounting for research projects or departmental accounts in USD are given the Canadian equivalent using a daily exchange rate. Restricted funds are reconciled against cash, receivables, and invested assets routinely to ensure co-mingled deposits have all restricted funding available with appropriate liquidity for use. Co-mingled deposits with appropriate internal controls enable fee savings, exchange risk management, and transactional efficiency.

For some areas of the University, such as the library expenditures, the exchange rate is fixed at \$1.25 CDN for \$1 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. Pandemic recovery paces will differ between nations. As the global economy improves, or if the US Federal Reserve raises interest rates at a faster pace than the Bank of Canada, the Canadian dollar will weaken.

## 7.9 PENSION AND POST-RETIREMENT BENEFITS

To protect the University from adverse fluctuations associated with market volatility, McMaster uses a five-year smoothing approach to measure the pension and post-retirement benefit assets versus liabilities, measured using actuarial interest and discount rates. To fund the gap between assets and liabilities of the benefit plans, the University manages a benefit reserve that stabilizes the Faculty and department employer benefit charge-out rate over a ten-year planning horizon. As a result of this approach, the benefit reserve may be temporarily negative during the ten-year cycle. These approaches promote stability in budgeting for compensation costs at the unit level.

The budget assumes a continued use of the funding valuation approach to measure pension and non-pension obligations each April 30 year-end. In 2022, generally accepted accounting principles require an accounting valuation approach for obligations not managed using a third-party asset trust unless a funding valuation is required by employer-employee plan text. The accounting changes might impact the post-retirement benefits since McMaster uses an internal reserve with funds managed within the investment pool, rather than third-party trust. The funding valuation approach for the post-retirement plan is used to establish the employee-employer benefit rates approved by the Budget Committee each cycle. In the event McMaster must revert to an accounting valuation the ten-year provincial bond interest rates will be used to assess asset/liability gaps instead of the interest rates earned by the investment pool over the matching duration of the liability. The accounting valuation will reduce interest rates and increase the obligation resulting in additional funding requirements.

### 7.9.1 PENSION PLANS

McMaster University maintains defined benefit (DB) and group Registered Retirement Savings Plan (RRSP) pension plans for full-time employees. The valuation of the pension obligation and related funding requirements considers interest rates, funding rules, and valuation timing. The current low interest rate environment materially increases estimated liabilities compared to plan assets. Benefit rates are set annually using a ten-year horizon to smooth impacts of interest rate fluctuations.

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 several years. Employee cost sharing through contribution increases help plan sustainability and are one of the key reasons that the plans have qualified for previous provincial temporary solvency relief measures. The employer's share of pension costs is allocated to departments as a percentage of employee contributions, budgeted at 125% for 2021/22 and future years, which is adequate to meet current funding requirements.

The Ontario Pension Benefits Act (PBA) and regulations require McMaster University to submit actuarial valuations 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 Plans"), as well as the Contributory Pension Plan for Hourly-Rated Employees of McMaster University Including McMaster Divinity College ("the Hourly Plan") no later than every three years. The Salaried Plans were last filed in 2018 and are due to be measured on July 1, 2021. The smaller Hourly Plan was measured on January 1, 2020, with the next required filing date on January 1, 2023.

The PBA rules require plans with solvency ratios below 85% to file annual actuarial valuations, and any solvency deficiency under 85% must be funded over five years. The July 1, 2018 filing for the Salaried Plans reported solvency ratios over 85%. The Hourly Plan solvency ratio at the July 1, 2019 was under 85%, resulting in an employer special one-time payment from the benefit reserve to increase the ratio above 85%, along with an early filing election on January 1, 2020. The funded status of the pension plans is monitored quarterly and actions are taken to maintain the solvency ratio above 85% and transfer ratio above 0.9.

The PBA rules also require a new Provision for Adverse Deviation (PfAD) to be funded, which is based on the plan's open or closed status and the plans' invested-asset mix. The initial regulations identified the Plan 2000 as closed, however the status definitions have been amended and Plan 2000 now qualifies as an open plan, which will reduce the PfAD liability during the next valuation in July 2021. The budget includes the anticipated reduction for Plan 2000 and lowers the departmental charge-out rate beginning in 2021/22.

Funding requirements associated with pension plans remain challenging as employee contributions never fully reach 50% of the current service costs despite increased contributions levels, due to other changes such as improved mortality. The table below shows the funded position of both Plan 2000 and the Hourly Plan on a going-concern basis<sup>5</sup> and a solvency basis<sup>6</sup> as of the last valuation date.

<sup>5</sup> 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.

<sup>6</sup> 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.

Table 1: Pension Plan Status

\$ millions	Plan 2000		Hourly Plan	
	Valuation date		Valuation date	
	July 1, 2018		January 1, 2020	
Going concern surplus (deficit)	\$	(143.4)	\$	3.0
Solvency surplus (deficit)	\$	(197.2)	\$	(8.1)
Solvency ratio		91%		90%

### 7.9.2 NON-PENSION EMPLOYEE FUTURE BENEFITS

McMaster offers non-pension retirement benefits (PRB) including extended health, dental and life insurance for many of its full-time employees. In 2011/12, the University worked with its actuaries to quantify the impact of plan changes on the unfunded liability<sup>7</sup>. Since that time, employee groups have agreed to changes that have significantly mitigated the growth of the liability.

In addition, a PRB reserve has been established to fund the liability. This internally restricted reserve is funded by a 0.25% surcharge included in employer benefit costs, an annual Operating Fund allocation of \$7.9 million, and investment returns on the balance as part of the long-term investment pool. The reserve initially held only 1% of the net present value of the cash payments, however funding initiatives adopted in 2011/12 have resulted in an internal reserve sufficient to cover 44% of the projected costs and projections suggesting the plan will be fully funded by 2035. The PRB reserve continues to be reviewed annually based on updated actuarial valuations and future expected investment returns. Strategies to ensure this obligation is settled 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
- Contribution of any additional surpluses from the Operating Fund, University Benefits Reserve or Specific Purpose Reserve.

## 7.10 FACILITIES

### 7.10.1 CAPACITY

Physical capacity on McMaster's main campus is largely determined by geographic limitations and physical structure, which contains well-established streets and natural features. The Campus Master Plan identifies capacity for new development is approximately 3 million gross square feet of ground area. This means capacity planning must begin to consider height optimization opportunities that are reasonable in context of the surrounding community.

The Peter George Centre for Living and Learning opened in September 2019, the first new residence on campus in 15 years, and provided a 36% increase in classroom space to address enrolment demand. Despite over 500 new residence beds, spaces still fall short in accommodating all first-year

<sup>7</sup> As of April 30, 2020, the liability for non-pension employee future benefits is estimated at \$277.2 million, with reserves of \$116.2 million.



students. In McMaster's most recent Campus Capacity Study further critical needs included 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 continue to address capacity issues, including 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 are funded by the MCU 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.

### 7.10.2 DEFERRED MAINTENANCE

A total of 70% (46 of 66) of McMaster buildings are over 40 years old with 44 of them above 50 years old. The current deferred maintenance backlog totals \$713.9 million. Deferred maintenance on academic buildings and infrastructure (excluding residences and McMaster University Medical Centre) is estimated at \$419.8 million. The deferred maintenance backlog of critical building systems is estimated at \$308.7 million. The 2021/22 budget for these costs is \$17.0 million, which includes the \$10.6 million base allocation, along with \$5.1 million from the Ministry of Colleges and Universities for deferred maintenance needs, \$1.0 million in additional operating funding within Facilities Services and \$337,000 of Campus Accessibility upgrade funding. The backlog of critical priorities is forecast to increase by about 12% from the current position of \$308.7 million to approximately \$346.7 million over the next ten years (based on 2020 data). Residence deferred maintenance is funded by Housing and Conference Services (H&CS) with approximately \$2 million per year allocated. The Bates residence will require significant renovations estimated at over \$25 million; H&CS had been saving for this initiative however the pandemic has eliminated savings to date.

McMaster's deferred maintenance backlog has increased substantially from two years ago due in part to measurement methodology harmonization approach across Ontario universities. The changes ensure more accurate building component replacement costs and soft costs are included in the measure. Higher future deferred maintenance costs are expected as McMaster continues to apply the new assessment approach to 20% of McMaster's infrastructure per year.

## 8 BUDGET CREATION

### 8.1 ACCOUNTABILITY

The effective management of the budget is a responsibility of the President assigned by the Board of Governors and defined in the 1976 McMaster University Act. 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. The operating and ancillary funds together account for two thirds of McMaster's annual expenditures. The Budget Committee recommends 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

The 2021/22 budget and following two-year plans are developed using principles and priorities aligned to our refreshed vision 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 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.
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



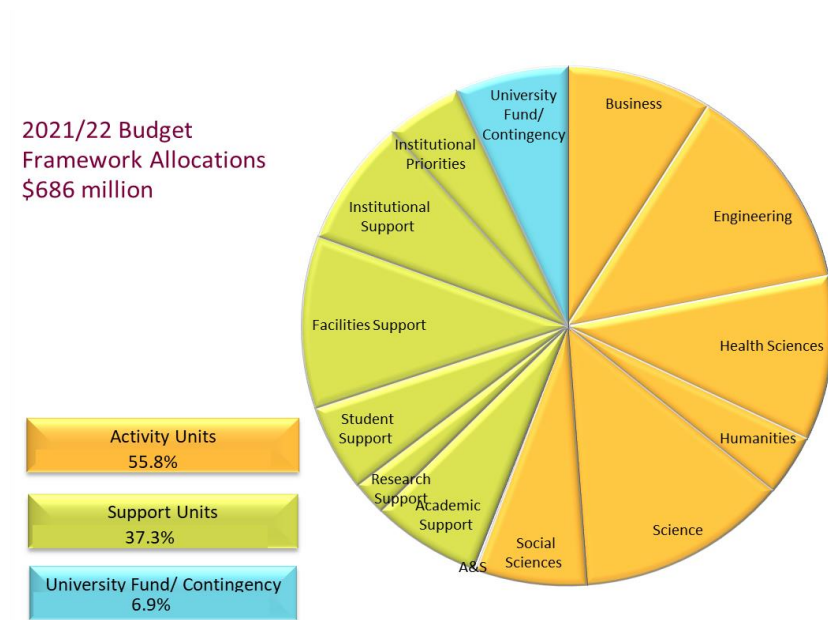
All central revenue streams are allocated to Faculties based on activities (such as student enrolment and teaching) as earned. The model mostly matches provincial funding flows. However, two strategic envelopes are created as a percentage of Operating Fund revenue: i) the Research Discretionary Fund to be used by the Vice-President (Research) for strategic research initiatives, and ii) the University Fund to be allocated by the Provost to support the University's mission, vision, and strategic priorities.

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 revenues to support the most research-intensive Faculties. Additionally, occupancy costs are charged out to a research host Faculty using an overall average cost 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 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 2020/21 Budget Framework Allocations by Area



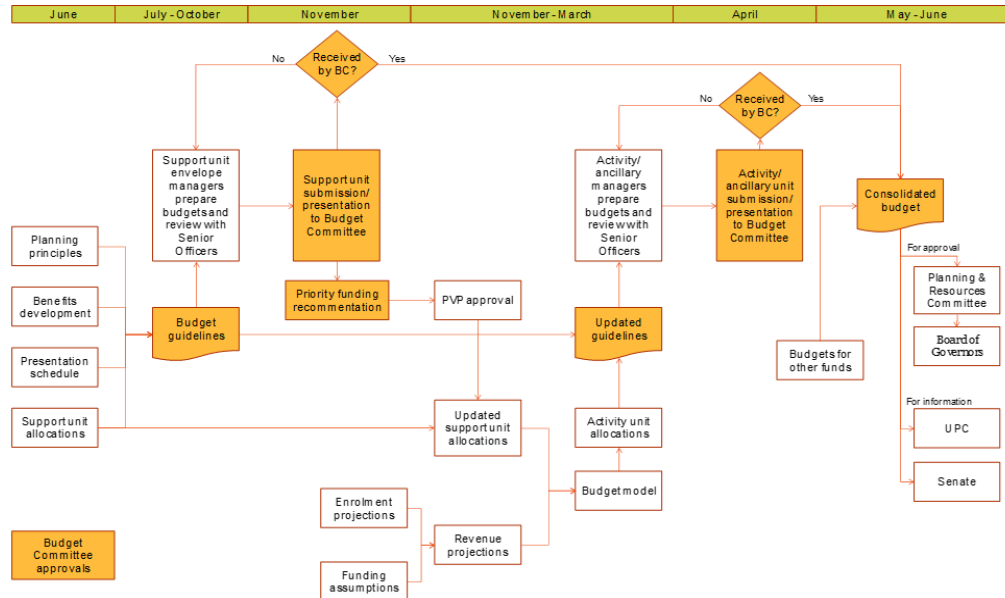
The budget approach has been continually assessed and evaluated both internally and externally, the latter involving the sharing of best practices with other Canadian and U.S. universities, as well as participating in research undertaken by the Education Advisory Board.

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 full 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.

The funding linked to SMA3 metrics beginning in 2022/23 might warrant some further refinements to the budget model in future years to ensure incentives are optimally aligned. Additional information on the budget model is available at <http://budgetmodel.mcmaster.ca/>.

## 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 the vision 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

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 specific 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, 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.

## 8.6 REVENUE ASSUMPTIONS

### 8.6.1 ENROLMENT

The University responded to the potential negative revenue impacts of the pandemic by focusing on adjusting cut-offs for acceptance and issuing more offers than targets, assuming that due to the pandemic acceptance rates would be lower. Acceptance rates for 2020/21 remained at similar levels to past years and that combined with grade inflation in the high school system resulted in more

eligibility. McMaster's domestic enrolment is above the funded corridor, while objectives aim to bring this over-enrolment down in the budget and planning years. International enrolment surpassed targets last year, and despite strong numbers of applications for 2021/22 confirmations are behind prior years. Overall, the enrolment baseline is projected to increase in accordance with the Strategic Mandate Agreement and the enrolment management targets, enabled by the capacity enabling projects noted in Section 7.10.1.

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 historical three-year 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: With the 2020/21 level 1 intake being impacted by the COVID-19, the higher of the 2019/20 level 1 intake (i.e. as of November 1, 2019) and the 2020/21 level 1 intake (i.e. as of November 1, 2020) is applied as the anticipated level 1 intake from 2021/22 to 2024/25, 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 historical three-year 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 FTEs, headcount and WGU counts by Faculty, level, registration status, immigration status, and fee category.

**Table 2: Enrolment Assumptions**

		2020/21 Budget	2020/21 Projection	2021/22 Budget	2022/23 Plan	2023/24 Plan	
Enrolment	Undergraduate FTEs	Domestic	23,759 -0.9%	25,882 +7.5%	26,264 +1.5%	26,571 +1.2%	26,712 +0.5%
		International	3,296 -6.2%	4,200 +18.9%	4,451 +6.0%	4,754 +6.8%	5,116 +7.6%
		Total	27,055 -1.6%	30,082 +9.0%	30,715 +2.1%	31,324 +2.0%	31,828 +1.6%
		Domestic	3,061 -2.1%	3,218 +2.5%	3,306 +2.7%	3,451 +4.4%	3,526 +2.2%
		International	1,087 -17.4%	1,114 -15.6%	1,145 +2.8%	1,259 +9.9%	1,287 +2.3%
		Total	4,148 -6.6%	4,332 -2.9%	4,451 +2.7%	4,709 +5.8%	4,813 +2.2%

## 8.6.2 TUITION RATES

The domestic tuition rate increase is budgeted as flat or 0%, however it will match any inflation the MCU tuition fee framework model allows. International tuition rates include market inflation and demand considerations. Rates are budgeted 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. For 2023/24, international rates are assumed to increased by 6% for level 1 and 4% for level 2 and above. Note that international PhD tuition will mirror that of the domestic PhD in accordance with McMaster's decision to harmonize the international and domestic PhD tuition starting 2018/19 (Table 3).



**Table 3: Tuition Rate Assumptions**

			2020/21 Budget		2020/21 Projection		2021/22 Budget		2022/23 Plan		2023/24 Plan	
			Level 1	Level 2 +	Level 1	Level 2 +	Level 1	Level 2 +	Level 1	Level 2 +	Level 1	Level 2 +
Domestic	Undergraduate	Arts & Science or other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Professional	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Graduate	Research (with thesis component)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Professional (course work only)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
International	Undergraduate	Arts & Science or other	10%	6%	10%	6%	10%	6%	10%	6%	6%	4%
		Professional	10%	6%	10%	6%	10%	6%	10%	6%	6%	4%
	Graduate	Research (with thesis component)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Professional (course work only)	10%	6%	10%	6%	10%	6%	10%	6%	6%	4%

### 8.6.3 OPERATING GRANTS

Operating grants are held flat with adjustments for graduate expansion achieved in 2019/20. Despite fixed grant figures for 2021/22 a net decline in the operating grant is budgeted to account for the incremental \$750 per international student tax charged to universities.

**Table 4: Operating Grant Assumptions**

		2020/21 Budget	2020/21 Projection	2021/22 Budget	2022/23 Plan	2023/24 Plan
Core Operating Grant (COG)		\$2,355/WGU based on WGU midpoint 2019/20	Flat	\$2,017/WGU based on WGU midpoint 2019/20	\$1,679/WGU based on WGU midpoint 2019/20	\$1,342/WGU based on WGU midpoint 2019/20
Differentiation Grant	Performance Based	Up to 25% of Total Operating Grants	Flat	Up to 35% of Total Operating Grants	Up to 45% of Total Operating Grants	Up to 55% of Total Operating Grants
	Other DE	Remaining funds from the result of reduced WGU value in excess of 25%	Flat	Remaining funds from the result of reduced WGU value in excess of 35%	Remaining funds from the result of reduced WGU value in excess of 45%	Remaining funds from the result of reduced WGU value in excess of 55%
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<sup>8</sup> 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. Revenue and expense adjustments related to COVID-19 were funded from appropriations in 2020/21, unless a specific request for funding was made to Budget Committee in the 2021/22 cycle.

The budget process provides a transparent means of prioritizing incremental funding for strategic investments or unavoidable costs in support units. For the 2021/22 budget, additional allocations have been made for:

- Further investment in the libraries for journal inflation
- The McMaster Okanagan Committee
- Support to the core research operations reducing the reliance on royalties revenues
- Further research administration support
- Support services to international students
- International student aid

<sup>8</sup> 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.

- International student recruitment
- Action plan support following review of the black student-athlete experience and Marauders Athletics climate
- President's new strategic support fund
- Archway (online student community initiative) coach funding
- Facilities services to offset Ancillary rent waivers provided to alleviate the impacts of the COVID-19 pandemic
- Further branding and marketing strategy investment

In addition to the above, several smaller base or one-time investments have been made in the 2021/22 budget and planning years. 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. A total of 55 universities have participated over the past ten years. There are currently 38 participating post-secondary institutions worldwide – 14 universities in Australia and New Zealand, 14 in the United Kingdom and now 7 others in Canada. Several institutions in the UK and Australia chose not to collect data during the pandemic (2020) but are still members and are expected to collect in the post-pandemic cycle.

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. Several IT projects have been prioritized, developed, and approved in the budget or planning years applying the new framework and plan.

The Research-Finance Review in 2018 brought together a team of internal and external researchers and administrators to evaluate the 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 have resulted in changes to policies; introduced a transactional support hub in the Faculty of Health Sciences; modified Mosaic interfaces affecting budget checking, voucher approvals, and workflows; and resulted in the successful launch of MacBill (an accounts receivable module) and MacBuy (a new procurement tool). All key recommendations of the review were completed in 2020/21. In 2021/22, automation changes to procurement card reconciliation, automation and streamlined research account opening, and other UniForum-linked projects are planned.

A Human Resources Review was launched in the fall of 2018, concluding in the fall of 2019. This was an aspirational and functional review of all HR activities across the University. The review reached several recommendations which are being addressed around 4 core themes. The theme areas are payroll process improvements, standardize and simplify processes, Integrated service model, structure & accountability, and recruitment improvements.

Specific activities contributing to achieving the University's mission and vision 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:

- Expansion or introduction of new programs, including -
  - The separate BComm stream where students that successfully secure a placement are enrolled in this plan that has the internship placement as a degree requirement.
  - The Computer Sciences program expansion.
  - Department of Psychiatry started a new program of MSc Psychotherapy in the fall of 2020 and international enrolment expansion will be targeted for this program.
  - New Bachelor of Arts and Technology program, collaboration between the Faculty of Engineering, the Faculty of Humanities, and the Community Engagement Office.
  - An interdisciplinary MA in Public Policy in Digital Society, the Faculty of Social Sciences' first professional program (outside Social Work) was introduced this year, and a second program in the area of mental health is being explored.
  - Proposal from School of Rehabilitation Science for a new undergraduate interdisciplinary degree in Humanities and Rehabilitation in collaboration with the Faculty of Humanities.
  - The Arts & Science Program continues to administer the McMaster Spring Intersession, a three-year pilot project (2019 to 2022), developing the partnership to provide an academic home for the Inspire courses and Intersession Program Administrator.
  - The new Integrated Arts (iArts) program has been approved by Quality Council and awaits provincial approval. This undergraduate program, which will replace three existing programs, will offer students the chance to learn and create across disciplinary boundaries, undertaking the sorts of projects and collaborations that exist for those working in the creative arts industries.
  - Partnership between Science, Humanities and Health Sciences in the development of an interdisciplinary graduate program in science communication and companion microcredentials.
- Implementation of Slate system for timely and transparent admission processing.

- Conversion of the Indigenous Studies Program into an academic department, expansion of the undergraduate Indigenous Studies Program, and the development of a graduate program in Indigenous Studies.
- Pivoting to effective delivery of remote student services and virtual student events.
- Implementation of a virtual chat assistant on the Student Success Centre website adhering to the principles of 'disarming and discover' from the Appreciative Advising model.
- Implementation of a new first-year student portal for McMaster Welcome Week (WW) as a one-stop place for all WW events and programs (over 230 events shared on the website across Faculties, programs and departments).
- Graduate Admissions project aimed at easing the application process for potential students and reducing the workload for program administrators.
- Improved partnerships and communication to encourage reporting to Security Services. Focus on mental health and wellness, substance use and abuse, sexual assault and violence, and anti-racism.
- Building of the McLean Centre and 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

Innovation in teaching and learning excellence will help McMaster to maintain high student demand for programs. Key initiatives include:

- Further integrating into Levels 2 and 3 the transformational shift in Engineering to encourage design thinking, creativity, reflection and integrated learning called The Pivot. The Pivot is the first program of its kind to intensely focus on our engineering students and their learning, not the specific projects they will tackle.
- The McLean Centre for Collaborative Discovery facilitating curriculum changes in a way that ensures students will learn from, and with, other students and faculty across the University, as well as partners in the community. Through discovery-based learning projects, they'll actively engage in real-world business challenges in the McLean Centre's interconnected, learning "hubs" or "labs".
- A new Faculty of Engineering building envisioned as an interdisciplinary, open-design, multi-floor teaching, research and innovation hub. The proposed design provides significant space for multidisciplinary interaction and collaboration, as well as open space available to other faculties and units.
- Implementation of chatbot systems in a number of University areas, including Engineering's advising office and the Registrar's office, will enable quicker handling and directing of student enquiries.
- Continuing to enhance remote teaching supports in order to be responsive to the unique needs of the Faculties and instructors.

- Increasing the involvement of Indigenous Elders and Knowledge Keepers within Indigenous Student Services (ISS).
- Continuing the Student Proposals for Intellectual Community Engaged Scholarships (SPICES) program to provide leadership opportunities for graduate students to develop/deliver innovative and creative programs for their peers and the broader community.
- Collaboration between the MacPherson Institute for Teaching and Learning, Humanities Media and Computing, and the University Library, and with support from University Technology Services, for the development of a course outline portal with goals of creating consistent course outlines in line with University policies, creating efficiencies in communications and support among campus support units and instructors, and offering opportunities for integrated data management and records keeping processes.
- Partnership between University Library, Health Sciences Library, Research and High-Performance Computing Support, Institutional Research and Analysis, and Communications and Public Affairs to explore a new program to support the effective and ethical use of bibliometric data across all disciplines.
- Continuing 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.

### 8.7.3 ACCESS AND EQUITY

Access and equity are key pillars of McMaster's vision and values. Key initiatives include:

- Increasing the Library's collection 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.
- Continuing COVID-19 crisis response and action planning.
- Indigenous Student Services (ISS) continuing to increase the profile of McMaster University as the University of choice for Indigenous learners, while improving Indigenous governance and policy development to maximize the student experience and success of Indigenous students.
- McMaster Museum of Art De-colonization Program, a staff-led strategy to raise awareness, examine strategies, provide direction for the institution and staff in de-colonialization.
- Continuing 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.
- Further improving partnerships and communication to encourage reporting to Security. Focus on mental health and wellness, substance use and abuse, and sexual assault and violence to improve the security and safety throughout the university community.

- Creating an “Inclusive Dining Hall” concept in 2021/22 (delayed from 2020/21 due to the COVID-19 pandemic) which will be unique to the university world, supporting and promoting inclusivity by providing dedicated dining stations for allergen-free, local, halal, cultural foods, and vegan and vegetarian. Food security initiatives will also be implemented from the location to support students with financial restrictions.
- Continuing implementation of the employment equity strategy and action planning.
- Initiating temporary part-time parking permit program to accommodate a part-time on campus schedule for staff and faculty during the transitional return to work on campus and new hybrid working models.

#### 8.7.4 RESEARCH EXCELLENCE AND IMPACT

McMaster’s commitment to world-class research is one of the key differentiating factors contributing to its global reputation. Key initiatives include:

- Continuation of the Brighter World Research Initiative.
- McMaster COVID-19 Research Fund, designed to support a broad range of research which will benefit society in dealing with pandemics in the immediate and longer term.
- Conducting an environmental scan across McMaster to identify the range of ways faculty and staff understand systematic inquiry, engage with scholarly literature, and are motivated to engage in research on teaching and learning.
- Continuation of the “MacLIMS” Laboratory Information Management System assisting researchers with management of research laboratories.
- Implementation in the Faculty of Health Sciences of highly multiplexed immunohistochemistry using multiplex ion beam imaging (MIBI) and support for this infrastructure as a core facility. This will be established as a core facility to support the broadest spectrum of faculty members and is expected to be funded by cost recovery for services. This is the only MIBI that is in Canada and McMaster researchers will be leaders in this field with the use of images from this equipment.
- Creation of an Assistant Vice-President, Nuclear to advance the University's strategic research plan by seeking out and establishing partnerships related to the nuclear operations and facilities with public and private stakeholders, foster these external partnerships on behalf of the University, identify opportunities for interdisciplinary collaborations, and promote and support institutional commercialization and entrepreneurship efforts related to the Nuclear Operations and Facilities (NOF).
- Investment in Spark, a centre for social research innovation, which sponsors seminars, workshops and related forum to advance interdisciplinary research approaches.
- The Community Research Platform, which connects researchers and community organizations to further community-engaged research on issues of importance to the community.

- The “Global Science” research initiative, paused in the last year, will re-start and act as a platform to enable and promote international activity including undergraduate and graduate educational programs, and collaborative research projects with international partners.
- Continuing to centralize McMaster’s research information in Experts (McMaster Experts) and integrate it with other campus systems for seamless reuse. Independently and with the McMaster Data Sharing Service, develop solutions that streamline creation of academic reports (CVs, McMaster CV, and Annual Record of Activities) and updating of the Common CV.
- A Research grant application project to automate grant applications process for researchers.
- Continuing research commercialization of McMaster researchers by developing spaces for research spin-off companies at the McMaster Innovation Park enabling the relocation of new 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.
- Re-imagining of the Campus Store business model as physical locations re-open, blending the physical and the virtual.

#### 8.7.5 INNOVATION, ECONOMIC DEVELOPMENT AND COMMUNITY ENGAGEMENT

McMaster is a major contributor to the local, provincial, national and global communities. Key initiatives include:

- 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. First, the McLean Centre for Collaborative Discovery a nine-storey expansion on top of Innis Library for multi-disciplinary problem-based learning, an undergraduate residence<sup>9</sup> along Main Street West expanding McMaster’s main campus, and a graduate residence in downtown Hamilton adjacent to the David Braley Health Sciences Centre.
- Strengthening relationships with a diversity of racialized communities/groups in the City, to enhance support/service.
- Building on and accelerating the culture of commercialization and entrepreneurship in the faculty and student community through creation of a McMaster investment fund for seed or

<sup>9</sup> 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.

prototype development. This will support the translation of research discoveries to products on the market via a start-up company.

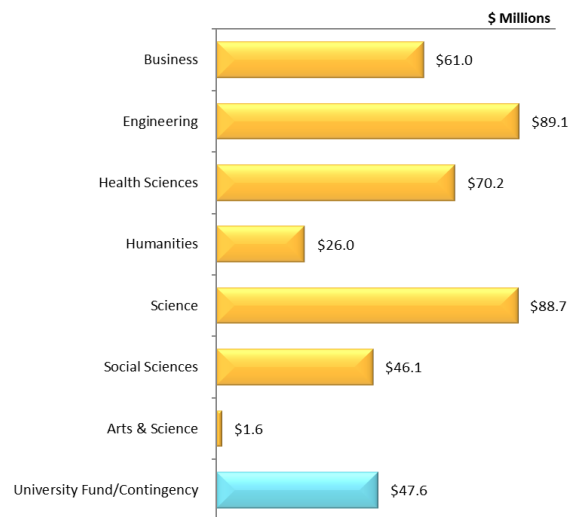
- Energy management plan initiatives in various buildings, including:
  - Demand Control ventilation.
  - Water system retrofits in the Life Sciences fish tank room.
  - Strobic fan upgrades.
- The McMaster Museum of Art is partnering with Nia Centre for the Arts (a Toronto centre for the appreciation of arts from the African Diaspora) and the Aboriginal Curatorial Collective on the Black, Indigenous and People of Colour (BIPOC) Cultural Administrators Mentorship Program, the first of its kind in Canada.
- Design and implementation of Indigenous knowledge stewardship strategy in partnership with Indigenous health leaders on campus and the community.
- Re-imagining partnerships with campus groups sharing common expertise and interest in health information management.
- Progressing initiatives related to the carbon footprint reduction strategy.
- Partnership between Student Success Centre, the Centre for Continuing Education, Alumni Association and local small/medium-sized employers to implement a program where grads of spring 2021 will take on the following training: digital skills, career resiliency and eight months of experiential learning with local employers. This program is targeting 50 young alumni from the Liberal Arts programs.
- Planning to increase cycling education for McMaster students through grant received for Bike Buddies.
- Supporting Faculty information technology teams with a data sharing service project that will improve data integrations and automation between systems of record and other systems.
- Education through Art offered community-wide and on campus.
- School of Nursing is collaborating with Government of Nunavut's Department of Health and St. Joseph's Healthcare Hamilton to develop a nursing residency program to address the increasing need for nurses in Nunavut.
- Re-launching "Everything McMaster", the Campus Store initiative, which leverages the University brand, unit marks/logos, and more, to strengthen brand recognition and life-long belonging that extends to alumni and broader community.
- Continuing 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.



## 9 ENVELOPE HIGHLIGHTS

### 9.1 ACTIVITY UNITS (FACULTIES)

Figure 7: Operating Fund 2021/22 Budget Activity Unit Allocations



#### 9.1.1 FACULTY OF HUMANITIES

The education provided by the Faculty of Humanities prioritizes the skills that many employers in the region already seek in their employees: “communication, collaboration, and critical thinking.” [RBC study, Humans Wanted]. New initiatives to expand career-planning activities and experiential education opportunities are already underway, as are several proposals for new interdisciplinary programming, which McMaster highlighted as a strength in SMA3.

Humanities will continue to face considerable revenue risk, given the reduction in tuition and the cap on domestic undergraduate student enrolments. While some growth is expected in the international student body, the Faculty also plays a major role in the University’s international strategy by providing McMaster’s highly successful English Language Development (MELD) programs. There is a degree of risk as the program remains dependent on students from a very small number of countries and unforeseen crises can restrict student mobility. Greater recruitment efforts are needed to expand the list of countries from which students are drawn, while maintaining the position where our reputation is already strong.

The Faculty of Humanities looks forward to participating in the Brighter World Research Initiative and assisting the President in achieving his vision for McMaster. In partnership with University Advancement, the Faculty is expanding the Faculty communications and development teams to raise the Faculty’s profile and expand its donor base. Research and educational portfolios are growing increasingly connected to the rest of the institution, demonstrating the value of Humanities to McMaster and to the many communities served by McMaster.

### 9.1.2 FACULTY OF BUSINESS

The faculty and staff deserve enormous credit for the success of the DeGroote School of Business in the face of considerable challenges related to the global pandemic. Because of their commitment, the Faculty is meeting obligations to students and meeting targets under SMA3. In fall 2020, the Faculty reached a new steady state with the Blended Learning Part-Time MBA program and Commerce Integrated Business and Humanities programs populating all cohorts. Also successfully launching the new highly experiential Student Experience and Development course for Commerce students. All plans are fully aligned with the Strategic Mandate Agreement, and existing programs are tracking well against McMaster's goals.

The School's financial position is strong. At the end of this fiscal year, both the minimum fundraising target and the contribution committed from operating funds towards the new McLean Center for Collaborative Discovery have been exceeded. The School is in a strong position to welcome its new Dean in July and continue the School's forward momentum. The risk to the operating budget, and McMaster generally, is the ability to meet international enrolment targets. However, demand for programs is high. The course of the pandemic and of public policy are both uncertain currently.

DeGroote's new Dean will have the opportunity to lead the School in an exciting redevelopment of the Commerce program and lead a significant expansion of the faculty. Academic programming will begin development this coming year and continue through to the opening of the McLean Centre. Throughout this past year, the talent and dedication of both faculty and staff have been exemplary, and it is this same dedication that will assure success.

### 9.1.3 FACULTY OF HEALTH SCIENCES

There is an ongoing need for health professionals, and graduates of the Faculty of Health Sciences (FHS) are practically fully employed with comfortable salaries at graduation. Health professional education is, by nature, experiential as more than half of students' training is in clinical situations. Experiential opportunities are also built into other FHS programs such as Biomedical Discovery and Commercialization and in graduate programs which also have high success rates. Most of the Bachelor of Health Sciences (Honours) graduates continue to further professional or graduate education. McMaster remains Canada's top university for attracting industry funding, and the Faculty of Health Sciences continues to be a driver, bringing in 57% of the University's research funding annually. Nimbleness was demonstrated with the pandemic, as FHS researchers brought in almost \$50 million in specific pandemic research funding.

The Faculty of Health Sciences continues to lead in education and research despite facing declining operating revenues. Other income resources such as hospitals are also fragile, and the Faculty remains dependent on the support of clinical faculty and the revenues they provide that sustain its operations. Support of research infrastructure is also a costly concern.

The Faculty of Health Sciences has redeveloped its internal budget model, to ensure support of research. Reviews of administrative departments are being completed to find efficiencies at the same time as growing effectiveness. Opportunities for enrolment growth are limited by provincial restraints on health professional seats, however the BHSc and nursing programs are recruiting international students, and new programs such as a Masters in Psychotherapy and a PhD in Global Health are attracting highly qualified candidates.

#### 9.1.4 FACULTY OF ENGINEERING

McMaster Engineering continues to invest in areas that support the University's Strategic Mandate Agreement. The Faculty also continues to implement the elements of The Pivot. A new integrated experiential learning course will bring Engineering disciplines together to apply their skills and knowledge to real world problems. Another new initiative, a Bachelor of Arts and Technology program, is being planned jointly with the Faculty of Humanities and the Office of Community Engagement. This interdisciplinary program will provide students with the knowledge, acumen, and skills to develop innovative technological solutions within an increasingly complex labour market characterized by profound social, economic, and technological change. It is also increasing faculty complement with a view to reducing the student-to-faculty ratio providing opportunities to be more engaged with students.

Engineering is continuing with the planned growth in the Computer Science Program. In addition, the Faculty continues to invest in growing international enrolment. Engineering's retention rate continues to increase. All these factors help to bring Engineering into a strong financial position, allowing it to invest heavily in retrofitting outdated areas and to address the need for additional significant experiential program space. The Faculty also recognizes the need to grow the faculty complement and wants to do this carefully given the continuing uncertainty around international enrolment.

Engineering's most significant constraint is space, and the Faculty plans to address this by using appropriations, as well as raising funds and partnering with other University units to build a structure between the John Hodgins Engineering Building and the Burke Science Building. This structure is initially referred to as the McMaster Bridge to Impact. Additionally, included in the budget are funds to improve some of Engineering's current spaces, particularly in JHE.

#### 9.1.5 FACULTY OF SOCIAL SCIENCES

Faculty of Social Sciences (FSS) is engaged in improving skills and job outcomes for students and will be investing in key initiatives to enhance support for experiential education and develop career readiness programming. The Faculty is focused on growing enrolment in priority areas, such as international students and health programs, and developing interdisciplinary programming, including a new professional MA and programming in social innovation. The FSS is also working to enhance retention rates by investing in a student experience coordinator to improve support for students in Social Sciences. Community and Economic Impact continues to be a priority for the Faculty, and initiatives such as increased support to community engagement, through the community research platform, and research activities will assist in moving this priority forward.

After a period of decline, enrolments in Social Sciences have stabilized and are expected to grow over the coming years. However, uncertainty regarding future funding, dependence on international enrolment and tuition growth rates, and compensation increases for faculty and staff create challenges for making necessary investments in strategic research, educational and support areas.

The Faculty is taking action on both revenues and expenditures by continuing to invest in international recruitment activities to expand and diversify international enrolment, while reviewing opportunities to streamline processes and build capacity to better support and advance the core educational and research mission.

### 9.1.6 FACULTY OF SCIENCE

The Faculty of Science is continuing to make strategic investments in faculty, staff and infrastructure that will continue to be a focus in the coming years. This will have a positive impact on goals related to the student experience, metrics of success of graduates, excellence in teaching and learning, research excellence and impact, innovation, economic development, and community engagement. It will permit the Faculty to increase diversity in staff and faculty complement and support high impact practices in learning, discovery, and engagement.

The main challenges relate to the uncertainty in future revenue projections in all categories of domestic tuition, government grants, international student tuition, research revenue and fundraising capacity. As a result, the Faculty has tried to balance desire for innovation and investment with a conservative approach to renewal and reinvigoration of resources while ensuring that all plans are closely aligned with strategic plans at the Faculty and University level.

The Faculty has collaborated to use data and information to address top priorities that directly link to the SMA3 while also aligning with the Faculty of Science strategic plan 2020 for the learning, discovery and engagement pillars. Investing in capacity for unique academic programming, excellence in all spheres, advancement, innovation, commercialization and in an international strategy must continue to mitigate risk and facilitate the Faculty's mission and vision.

### 9.1.7 ARTS & SCIENCE PROGRAM

Consistent priorities include creative development of student research and experiential learning opportunities, ongoing offering of the McMaster Discovery Program, and innovative developments in McMaster Intersession collaboration. A key initiative is to increase the involvement of Arts & Science alumni in promotion of the program and to engage them in offering learning opportunities for current students within a culture of scholarly challenge and social responsibility.

Essential to the success of the Arts & Science Program is a strong, well-planned, and sustainable faculty complement, which entails the negotiation of teaching release agreements with the Faculties of Humanities, Science, and Social Sciences.

Teaching secondments continue to be negotiated successfully. Of particular note, succession planning for the long-serving incumbent Director of Arts & Science, retiring next year, is currently a key activity to ensure an ongoing successful program.

### 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 allocated for specific purposes with the intention that successful innovations will be funded permanently by 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.

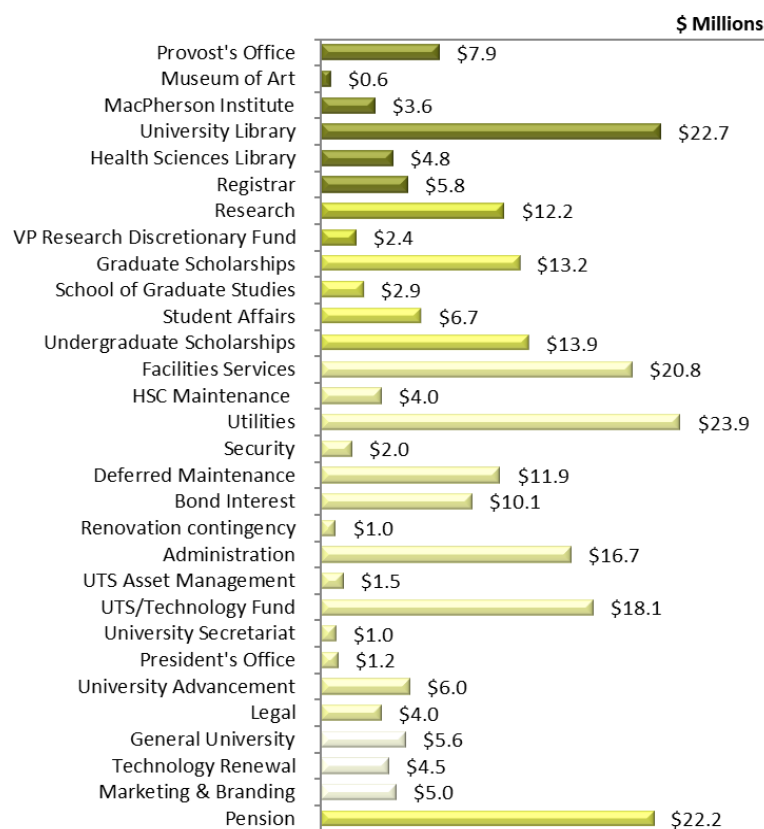
The Office of the Provost is responsible for developing appropriate mechanisms to control and use the University Fund as a strategic tool for the University. This fund is used to support unforeseen or unfunded priorities and to seed new strategic initiatives. A significant portion of the Fund is now 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 strategic initiatives and is providing funding from the University Fund to enable innovative projects that support the University's mission. Many existing ongoing commitments have been shifted to permanent allocations in the relevant areas as intended, and the Provost will continue to apply this lens to all future projects.

## 9.2 SUPPORT UNITS

Figure 8: Operating Fund 2021/22 Budget Support Unit Allocations



### 9.2.1 STUDENT AFFAIRS

The pandemic has resulted in the rapid adaptation of student services and programs to a virtual environment. There remains a focus on initiatives that will drive internationalization, and innovation and 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 from abroad and/or for students who are studying remotely. 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.

Athletics and Recreation (A&R) remains the biggest challenge due to indefinite facility closures and the associated reduction in fees and elimination of several revenue streams. In addition, several other key priorities related to innovation, internationalization, health and well-being, and inclusivity 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 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.

Program and staff reductions in A&R have mitigated some of the lost fee and other revenue. Additional strategies and action may be required dependent on the pandemic and the impact on A&R operations over the next year. The pursuit of major gift fundraising efforts in partnership with Advancement aims to offset financial obligations normally met through University operating allocations.

### 9.2.2 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 Health Sciences Library focuses on activities that ensure both local and distributed users have access to high-calibre health research content and information management, knowledge synthesis, and publishing support services. This commitment to providing online content and virtual services has served users well during the pandemic requiring very few adjustments to service delivery upon lockdown.

The University libraries continue to face the ongoing problem of journal cost inflation. Researchers need access to elite journals; most serial subscriptions are bundled consortially as part of binding, multi-year contracts in US dollars. Costs for journal subscriptions are linked to McMaster's research intensity and thus McMaster pays higher prices than some of our counterparts.

The University libraries have implemented several cost-saving measures including complement review; where possible trimming print material and low impact, low use journal subscriptions; and implementing centrally mitigated exchange rate impacts. However, closer consideration of the full impact of research and educational programming on the library is required to avoid drastic cuts to research collections and further reducing library hours.

### 9.2.3 OFFICE OF THE REGISTRAR

The Registrar's Office supports the Strategic Mandate agreement in several ways. The most direct is in the support of student administrative needs and support of the teaching mission of the University. The Registrar's Office drives recruitment and admissions activities and manages student registrations. In the upcoming year, the Registrar's Office will be focused on a number of new initiatives including: 1) the Slate recruitment and admissions project 2) the stop-gap pink folder admissions project 3) student services support software including online chat 4) Aid and Awards' AwardSpring software implementation 5) a reinvention of all recruitment activity to virtual programming while achieving increasing international student recruitment goals, and 6) space planning for the upcoming physical relocations of the Registrar's Office.

The most significant pressure facing the Office of the Registrar continues to be working with existing staffing resources to continue to deliver on expectations in the face of rising costs of salaries and benefits; increased resource pressures to support, maintain, enhance, and upgrade systems; and increased resource demands to support an increasing student population. Additionally, the COVID-19 pandemic has put further pressures on the department to reinvent current business processes to deliver services remotely.

The Office of the Registrar continues to review how it provides the best service in the most effective way and to look for other cost-saving measures to meet budget constraints. The most effective actions are improvements to student self-service options which both improves the student experience and allows the redeployment of resources to more complex work. The increased use of virtual delivery in recruitment also saves significant travel and logistics time allowing recruitment officers more time to interact with students and guidance counsellors. Managers also work collaboratively to support each other during peak activity periods as the unit is working toward building a talented, flexible and efficient work group that responds quickly and effectively in serving the University Mission.

#### **9.2.4 SCHOOL OF GRADUATE STUDIES**

The School of Graduate Studies works in concert with the Faculties to achieve their strategic priorities by assisting in recruiting activities, scholarship administration and the development of new graduate programs and skills development opportunities.

The fixed Graduate Scholarship envelope is an ongoing challenge given a growing graduate student population. Staffing has been a challenge with the many changes introduced by COVID-19 requiring out-of-the-box thinking for thesis defense meetings, recruitment, and communications.

A critical evaluation and assessment are required as staff vacancies arise to determine if the role, responsibilities, and functions performed still add value for graduate students and the University. The implementation of the Slate admissions software will significantly alleviate staffing pressures and time lag related to adjudicating applications and onboarding new students.

#### **9.2.5 PAUL R. MACPHERSON INSTITUTE FOR LEADERSHIP, INNOVATION AND EXCELLENCE IN TEACHING**

In pivoting to support remote instruction, the MacPherson Institute expanded its faculty liaison model and developed new resources, that contributed to the strategic goal of Innovations in Teaching and Learning. The Institute delivered on core elements of its strategic plan tied to Access and Equity, as well as Research Excellence and Impact in the development of inclusive teaching resources and continued international leadership in student partnership. For Student Experience it grew the successful Educational Developer Fellow program in size and scope to support remote teaching, while continuing exemplary work in supporting the academic program review process.

License costs for institutionally hosted technology tools that are under-utilized are being reviewed in order to alleviate resources allowing more focus enhanced pedagogical training and support of tools that are used broadly across the University.

Since COVID-19 the Institute has and will continue to emphasize the importance of digital pedagogies. It expanded the Faculty Liaison model to deliver teaching development supports in direct response to

Faculty-specific needs and the Institute will strive to continue focus efforts on providing educational technology supports in accordance with our mandate.

### **9.2.6 RESEARCH ENVELOPE (INCLUDES NUCLEAR OPERATIONS AND FACILITIES)**

Support provided by the Vice President Research (VPR) envelope is critical to meeting the research metrics in SMA3. Research Office for Administration and Development Support (ROADS) personnel increased Tri-Agency funding by increasing the competitiveness of McMaster's grant applications and supporting researchers' efforts to bring in more funds. The McMaster Research Ethics Board, Biosafety, Health Physics and Research Finance ensure that McMaster meets the requirements of the Tri-Agencies and other funders regarding compliance, financial oversight, and protection of researchers, highly qualified personnel and research subjects. The McMaster Industry Liaison Office (MILO), in its support of private sector partnerships, protection of intellectual property, licensing, patents and start-ups, is critical to McMaster's efforts to meet the SMA3 metric of increased research funding from the private sector and invention disclosures. New initiatives, such as increased support for core research facilities, ensures that infrastructure is available for use by researchers and industry thus enhancing partnerships and attracting additional revenue.

The VPR envelope has avoided any resourcing cuts and allowed for additional new initiatives, which include increased support for grant development and management, prizes and awards, business development and support for commercialization, innovation and for start-up companies; for developing and fostering national and international partnerships; and for celebrating and communicating McMaster's research success to enhance our reputation and the reach of our impact research.

As Canada's sole major neutron source, the McMaster Nuclear Reactor (MNR) makes McMaster the only university in Canada capable of hosting several types of research facilities, including the Small Angle Neutron Scattering Facility (SANS), which relies on the neutrons present in the MNR, and the McMaster Intense Positron Beam Facility (MIPBF), which utilizes the high gamma ray fields in the reactor core. Nuclear Operations and Facilities (NOF) will continue to enable nuclear research in support of McMaster researchers and the Canadian research community; while planned expansion will facilitate greater research and development and commercial opportunities around medical isotopes.

The VPR operation teams will continue to work to attract further Tri-Agency and private sector funding, increase commercialization and knowledge translation activities, and develop collaborations both nationally and internationally – enhancing our brand on the global stage and strengthening our reputation as a trusted and reliable partner. With a strategic institutional focus on McMaster's nuclear capabilities, expanded NOF operations will bring increased research activity across all nuclear fields and allow McMaster to capitalize on our radiopharmaceutical research capabilities, increasing opportunities for commercialization and spin-off success. While this pandemic year was unprecedented, it highlighted the importance of being able to pivot our attention to emerging opportunities while maintaining excellence in attracting more traditional funding opportunities.



### 9.2.7 UNIVERSITY TECHNOLOGY SERVICES (UTS)

The McMaster IT Strategic Plan was implemented in 2019 and continues to deliver on the aspirational goals and priorities outlined therein. The focus of the IT strategic plan is on creating a stable and secure technology environment while implementing desired systems, technologies, and processes to improve and support the teaching, learning and research activities of the institution and to improve the student experience, as well as those of staff, instructors, researchers.

There are always finite dollars balanced against almost infinite IT needs and enhancements. In addition to funding an asset maintenance and renewal envelope, the institution has committed to fund numerous initiatives that are advancing the capabilities of the campus through technology and systems. Continued investments will be necessary to continue to address infrastructure needs and new systems to improve automation and capabilities across campus.

UTS 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 partnerships 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.

### 9.2.8 ADMINISTRATION AND FACILITY SERVICES

There is broad acceptance that continued improvement in service effectiveness is dependent on integrated planning and execution of cross-campus initiatives. McMaster has the most cost-effective administration among the Canadian universities in UniForum, but it is equally clear that there is substantial opportunity to improve in comparison to other top-tier universities in Australia, New Zealand, and the United Kingdom, and in the opinions of our users. To make progress in cost-effectiveness, the University may need to increase up-front investment for longer-term gain. The President's strategic focus on operational excellence will allow us as a campus to address this challenge.

The 2021/22 budget includes further substantial investment in the HR Review action planning such that appropriations will be fully expended. As efficiency initiatives play out in HR and Finance in particular, a revised understanding of the optimal organizational approach will emerge which will inform future budgets. It is probable that further investment will be required in 2022/23 and later years to facilitate delivery of the service models we seek to achieve across the campus.

Plans are in place for progress of the following Facility Services initiatives:

- Strategic Plan
- Energy Management Plan
- Capital Plan
- Asset Management Plan
- Project Management Methodology
- Space Management Plan
- Campus Accessibility Plan
- Campus Plan
- Campus Capacity Study

Facilities Services continues to look at new ways to improve the day-to-day operation. Custodial Services is participating in a pilot through the UniForum project to determine if there are effective ways to reduce cost or improve satisfaction. As deferred maintenance continues to grow, maintenance staff are increasingly challenged to work on tasks outside the Priority 1 items identified.

### **9.2.9 UNIVERSITY ADVANCEMENT (UA)**

For the coming year, the Strategic Mandate Agreement will continue to be a guide for ongoing priorities for UA, as will a strong emphasis on the strategic priorities of Inclusive Excellence, Student Learning, Research and Scholarship, Community Engagement, Commercialization, International Engagement and Operational Excellence. The needs of the research enterprise will have a special focus through the Brighter World Research Initiative (BWRI). As a support unit for the University, UA works to enable the priorities of the broader University and our performance goals are focused on serving and supporting these goals. Given our service and support for institutional priorities, our activities touch on all areas outlined in SMA3, and our achievements and goals cut across the numerous categories laid out with the SMA3 document.

UA is using strategic savings to seed positions and resources for the BWRI in partnership with our Faculties and units. We continue to focus on our key success factors for building McMaster's relationships, reputation, and resources. 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 SMA3. UA will continue to play a lead role in the University's marketing and branding initiative 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. The activities of Public Affairs (formerly Government Relations) continue 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 senior leaders from across the University, in the planning and implementation of the BWRI to bring more revenue into the University's research enterprise.

### **9.2.10 UNIVERSITY BRANDING AND MARKETING**

The marketing initiative has taken great strides over the past four years as McMaster's reputation continues to trend upwards. Our marketing commitment to advancing human and societal health and well-being via our Brighter World brand platform is expanding to achieve goals and effectively integrate with new opportunities including the UN Sustainable Development Goals. Differentiating McMaster in an increasingly competitive national and international environment underpins the evidence-based marketing strategy. New websites, advertising campaign, focus on strengthening McMaster's international ranking results, role in supporting international recruitment and response to the COVID-19 pandemic support the development of McMaster's reputation as a world-class research and teaching university.

The University has made a strong commitment to the marketing program for several years, which has allowed McMaster to reposition itself and develop new marketing infrastructure. The full scope of work that will be required over time to support the University's goals and align McMaster with its competitors has been acknowledged this year with an ongoing commitment for the general marketing budget and a one-time budget allocation to support marketing's role in advancing international recruitment goals. While the current focus is on priority goals in the plan, areas across the University will benefit from increased assistance in developing comprehensive and analytically supported

marketing approaches to enhance competition for students and faculty, to help influence government, and to attract other funding sources.

The marketing program will continue to support the priorities established by the Marketing Steering Committee and to support Faculty priorities and initiatives to achieve both short- and long-term objectives. The program is focused on delivering an efficient, effective, and innovative marketing discipline for McMaster. Time will be spent with the Steering Committee over the next year to create alignment with university goals and the stewardship of funding and future needs to deliver the strategy to the University.

## 10 BUDGET BY FUND

### 10.1 OPERATING FUND

Table 5: Operating Fund Summary

(\$ thousands)							
	2020/21 Budget	2020/21 Projection	2020/21 Variance		2021/22 Budget	2022/23 Plan	2023/24 Plan
<b>Revenues</b>							
Provincial grants	235,540	236,355	815	0.3%	236,158	235,863	235,585
Tuition	337,244	398,233	60,989	18.1%	418,215	456,282	492,998
Research overhead income	28,993	28,032	(961)	-3.3%	28,459	28,285	28,280
Investment income	9,467	10,467	1,000	10.6%	9,467	9,467	9,467
Other income	109,508	95,813	(13,695)	-12.5%	107,132	111,393	113,442
<b>Total revenues</b>	<b>720,753</b>	<b>768,900</b>	<b>48,147</b>	<b>6.7%</b>	<b>799,431</b>	<b>841,290</b>	<b>879,772</b>
<b>Expenses</b>							
Salaries, wages and benefits	522,608	509,688	12,919	2.5%	531,369	552,334	576,459
Utilities and maintenance	43,051	39,716	3,335	7.7%	45,066	47,958	47,783
Equipment and renovations	62,021	122,872	(60,851)	-98.1%	68,157	76,037	72,818
Scholarships, bursaries and work study	34,737	32,536	2,201	6.3%	31,619	31,286	31,285
Library acquisitions	14,253	15,116	(863)	-6.1%	15,193	15,681	16,031
Debt and financing charges	18,448	18,410	37	0.2%	26,401	25,539	24,893
All other expenses	79,495	67,944	11,551	14.5%	86,447	93,086	101,694
<b>Total expenses</b>	<b>774,612</b>	<b>806,283</b>	<b>(31,671)</b>	<b>-4.1%</b>	<b>804,253</b>	<b>841,920</b>	<b>870,963</b>
<b>Excess of revenues over expenses</b>	<b>(53,859)</b>	<b>(37,383)</b>	<b>16,476</b>	<b>30.6%</b>	<b>(4,822)</b>	<b>(630)</b>	<b>8,809</b>
Fund balance, beginning of year	157,672	196,580	38,908	24.7%	159,197	154,375	153,745
<b>Fund balance, end of year</b>	<b>103,812</b>	<b>159,197</b>	<b>55,384</b>	<b>53.4%</b>	<b>154,375</b>	<b>153,745</b>	<b>162,554</b>

The 2020/21 Operating Fund projected deficit is smaller than budgeted and includes capital fund transfers for future projects associated with Engineering and Science projects. The Operating Fund is structurally balanced in 2021/22 and planning years, one-time permanent allocations to the Capital Fund have increased to support McMaster's vision and strategic plan priorities. Details of the variances between the 2020/21 budget and projection are available in Appendix 1. The revenue trend table that follows in the next section is not adjusted for inflation, so where revenues remain flat or fixed over time the actual purchasing power of those funds is decreasing by approximately 2% per year (long-term average of Ontario consumer price index inflation).

## 10.1.1 REVENUE

Figure 9: Operating Fund Revenue Trend

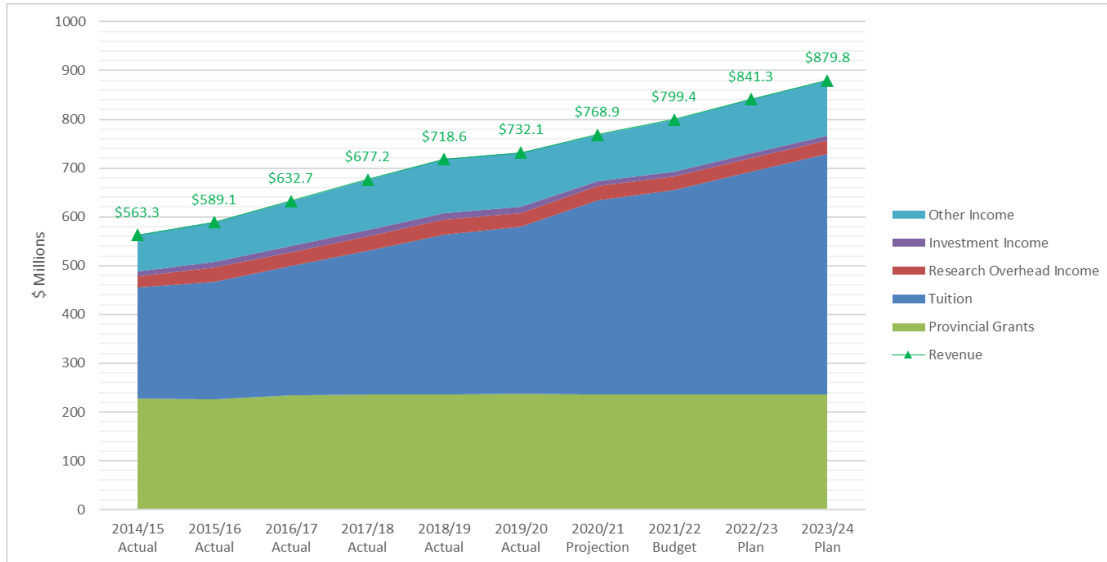


Figure 10: Operating Fund 2021/22 Budget Revenue by Type

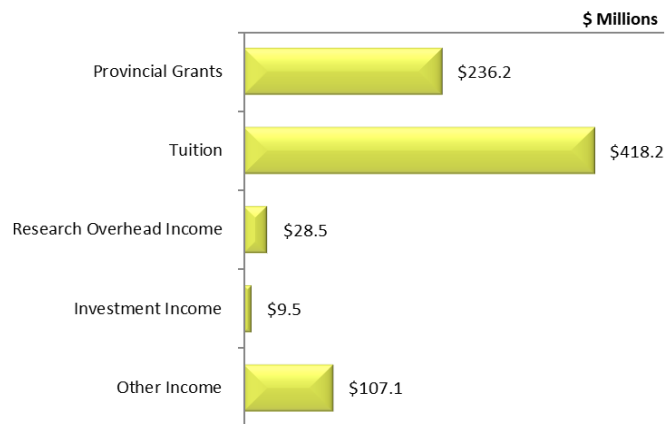
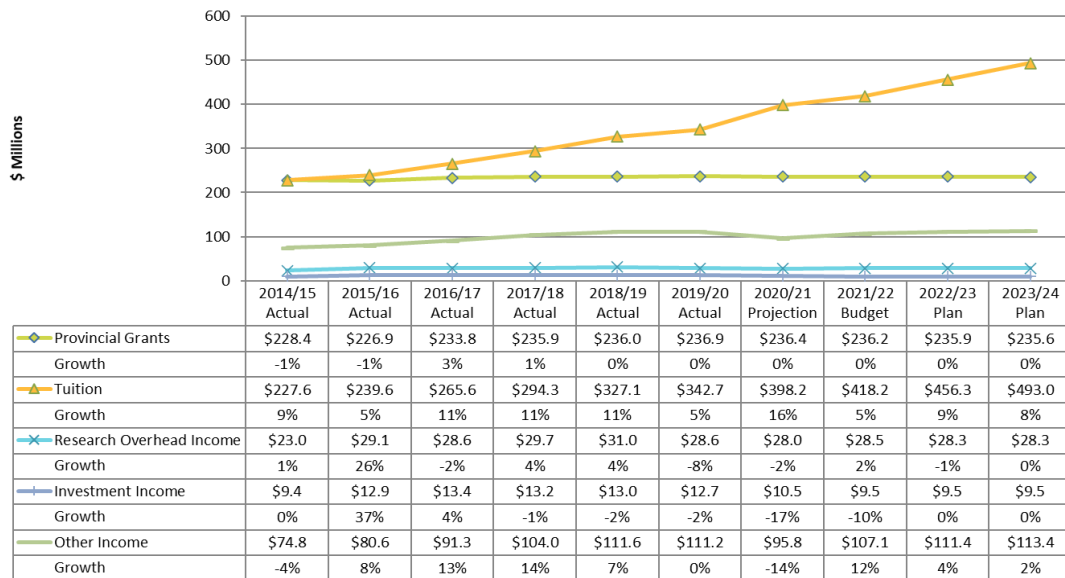


Figure 11: Operating Fund Budget Revenue Trend by Type



#### 10.1.1.1 PROVINCIAL GRANTS

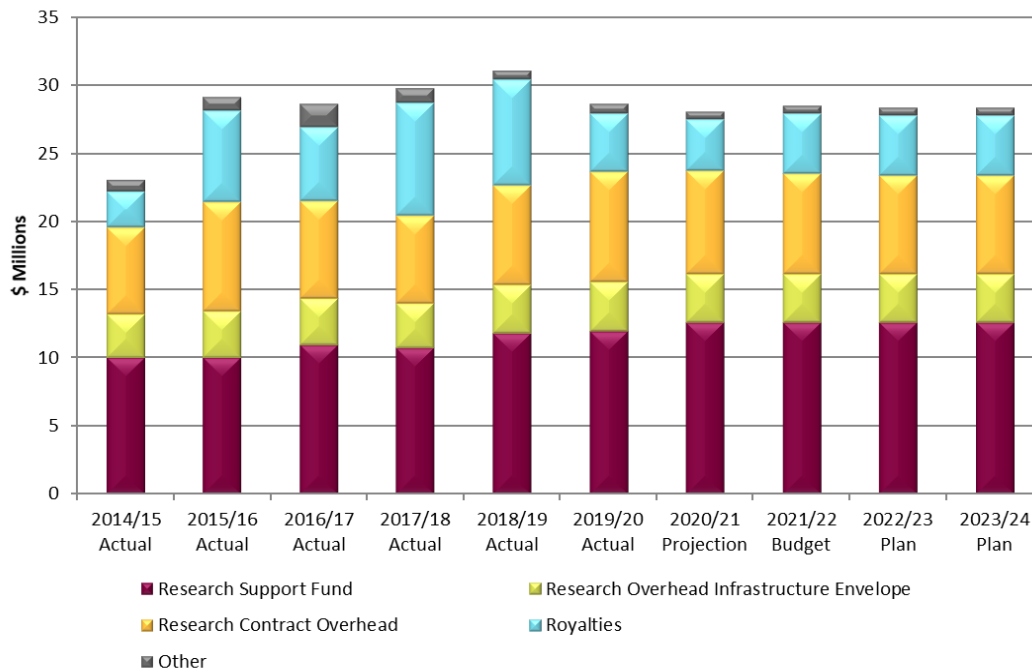
Both the Core Operating Grant and Performance/Student Success Grant are projected to remain flat over the planning horizon. With the funding for graduate enrolment growth now captured in the corridor funding with a new base year of 2019/20 this now remains flat as well, with slight reductions to provincial grant funding caused by the International Student Reduction (\$750 tax per international student enrolled) as international enrolment increases.

#### 10.1.1.2 TUITION

Based on the enrolment targets outlined previously and the assumed flat tuition framework, 2021/22 net overall tuition income is projected to increase by \$20.0 million (+5.0%) from the 2020/21 projection. This increase is a result of the planned international enrolment growth.

### 10.1.1.3 RESEARCH OVERHEAD INCOME

Figure 12: Operating Fund Research Overhead Income Trend



Research overhead income is 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-Agency research funding the University receives. As a result of the incremental investment in Tri-Agency 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 2020/21 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, therefore 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 linked to research discoveries. Like 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.

Budget by Fund

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 is allocated \$9.5 million per year from 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 pension surplus payout in 2003. Annual interest from these two funds at the smoothed expected long-term return rate approximates \$5 million per year. The difference is funded from the specific purpose reserve as an approach to stabilize interest revenues allocated to Faculties through the budget model framework.

In 2020/21 and ongoing, Faculties will make permanent transfers for future capital projects from the Operating Fund into the Capital Fund. These allocations will be included in the budget model interest allocation of the \$9.5 million annually.

In 2020/21, the specific purpose reserve has made an additional \$1.0 million one-time contribution, totaling a \$10.5 million transfer, to support the President’s Strategic Support Fund.

#### 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

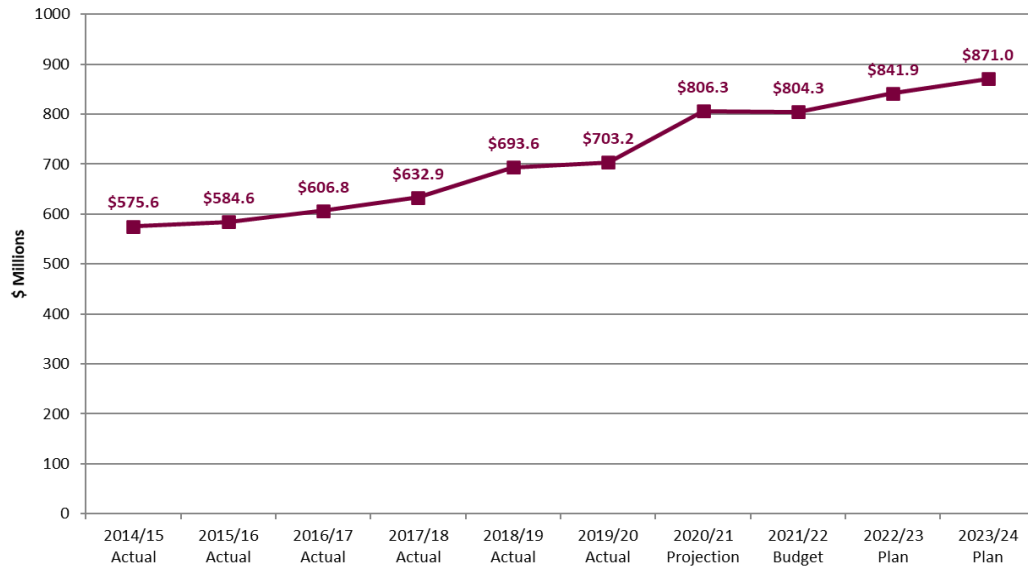


Figure 14: Operating Fund 2021/22 Budget Expense by Type

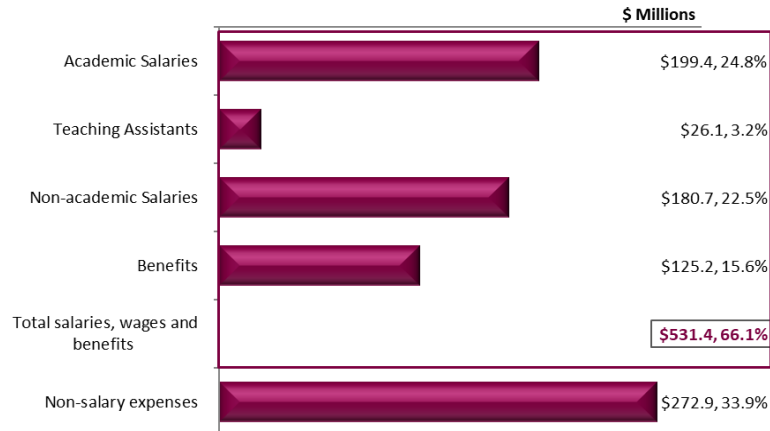
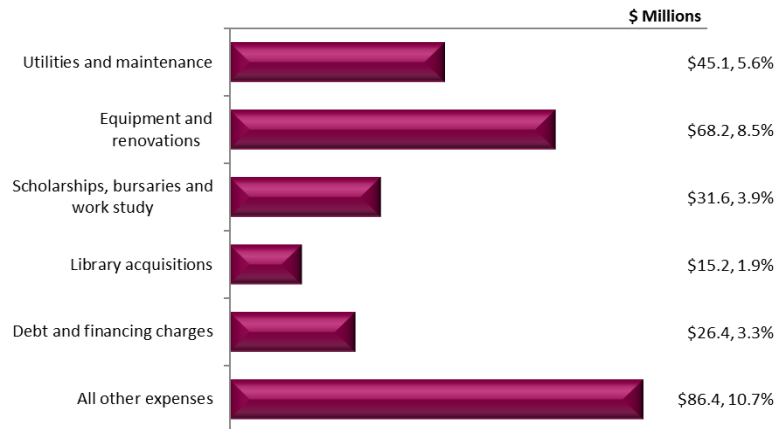


Figure 15: Operating Fund 2021/22 Budget Non-salary Expenses by Type



#### 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 continued focus on staff processes, 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 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 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 rates 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 dropped from 150% of employee contributions for 2020/21 to 125% of employee contributions for 2021/22 for all funds including ancillary.
- 2022/23 and 2023/24 high-level planning assumes 125% for the departmental and ancillary rate.

Taking these factors into account, the increase in total compensation costs approximates just under 4% per annum over the planning horizon.

The pension plan expenses are not immediately affected by pandemic-related economic impacts. The Salaried Plan valuations will occur July 1, 2021, however no material expense increases are anticipated with the updated filing. The Hourly Plan valuation is not due until 2023. No changes are budgeted to benefit charge-out rates for 2021/22 and the planning years.

#### 10.1.2.2 UTILITIES AND MAINTENANCE

Utilities and maintenance represent 5.6% of the operating budget, including annual contributions of \$11.9 million to deferred maintenance. These costs increased in 2020/21 as the Peter George Centre for Living and Learning opened in the fall of 2019.

Costs for utilities can be volatile, subject to market rates, weather fluctuation, unplanned maintenance failures, and campus behavior. McMaster is the backup for the hospital's energy, which can also lead to increased costs due to unforeseen utility requirements during high-cost 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 \$0.15 for 2021/22 following the end of the Ontario Rebate for Electricity Consumers and Ontario Electricity Rebate. An investment in peak shaving generators is one activity that has been planned to mitigate the expected increase as Facilities Services continuously looks for potential strategies to lower electricity rates and while being mindful of lowering carbon emissions.

McMaster tracks the Ontario Association of Physical Plant Administrators (OAPPA) numbers for benchmarking purposes. Although there is a defined reporting method it is questionable if all members are following the methodology, and due to this McMaster continues to report and track this data but does not rely on it to make decisions. The most recent OAPPA G6 benchmark average for energy was \$2.47 per square foot (/SF). McMaster University Medical Centre and Michael DeGroote Centre for Learning and Discovery have a significantly higher energy cost index at \$4.90/SF due to the energy-intensive nature of health research and the heating/cooling requirements of the hospital with in-patient beds and emergency rooms/operating rooms. Excluding these two facilities, the energy cost index for the McMaster campus was \$1.89/SF.

### 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. Physical and technical infrastructure maintenance 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 an average of \$53 million per year for new and upgraded physical facilities, including new community spaces. Transfers to capital are considered one-time repeating transfers made by choice and from a governance perspective these are permanent holds for capital with spending still based on Board by-laws. 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:

- Transfer to Capital for the McLean Centre for Collaborative Discovery
- Science space improvements
- Systems to improve the student experience, including Visual Schedule Builder, document management, and customer relationship management
- Continued expansion of the wireless network

### 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 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.

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.

#### 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 generates more research dollars.

Several actions have been taken to contain costs. An analysis of cost per use data was 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. Options are limited by the University's need for access to the world's most high-profile and high-impact journals.

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 and 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. The principal will be repaid using a separate internal reserve or sinking fund approach similar to the one described above.

The Board has approved a new debt call for an additional \$150 million in spring of 2021. Additional annual expenses of \$4.5 million has been budgeted for interest payments, and a sinking fund will be established to ensure repayment of the principal at the end of the term. See Section 12 Overall Borrowing and Debt Position for additional details.

### 10.1.2.7 ALL OTHER EXPENSES

This line represents 10.7% 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 \$4.8 million, Operating Fund appropriations are expected to decline to \$154.4 million, or 19.3% of operating revenue, by the end of 2021/22. 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 increase slightly during the planning horizon, while dropping in terms of percentage of revenue to 18.5%.

### 10.1.4 ONE-TIME EXPENDITURES

Table 6: Operating Fund Ongoing and One-time Summary

(\$ thousands)							
	2020/21 Budget	2020/21 Projection	2020/21 Variance		2021/22 Budget	2022/23 Plan	2023/24 Plan
<b>Ongoing:</b>							
Allocated income	604,266	666,726	62,460	10.3%	686,443	721,168	761,403
Other income	115,957	100,296	(15,661)	-13.5%	112,639	119,772	118,020
Total revenues	720,223	767,022	46,799	6.5%	799,082	840,940	879,423
Expenses	743,676	705,289	38,387	5.2%	756,762	786,629	812,587
Excess of revenues over expenses	(23,453)	61,733	85,186	-363.2%	42,320	54,312	66,836
% of revenue	-3.3%	8.0%			5.3%	6.5%	7.6%
<b>One-time:</b>							
Allocated income	-	(500)	(500)	n/a	(0)	-	-
Other income	530	2,378	1,848	349.1%	350	350	350
Total revenues	530	1,878	1,348	254.7%	349	350	350
Expenses	30,936	100,994	(70,058)	-226.5%	47,491	55,291	58,376
Excess of revenues over expenses	(30,406)	(99,116)	(68,710)	226.0%	(47,141)	(54,942)	(58,027)
<b>Excess of revenues over expenses</b>	<b>(53,859)</b>	<b>(37,383)</b>	<b>16,476</b>	<b>-30.6%</b>	<b>(4,822)</b>	<b>(630)</b>	<b>8,809</b>
Fund balance, beginning of year	157,672	196,580	38,908	24.7%	159,197	154,375	153,745
<b>Fund balance, end of year</b>	<b>103,812</b>	<b>159,197</b>	<b>55,384</b>	<b>53.4%</b>	<b>154,375</b>	<b>153,745</b>	<b>162,554</b>

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 in the budget include:

- \$24.4 million renovation and expansion of facilities
- \$10.0 million for undetermined strategic investments from the University Fund likely to include:
  - Expenses related to COVID-19

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- New IT commitments
- Investment in rejuvenating core research platforms and research commercialization
- Incentives and impact minimization of internal and external policy changes
- New opportunities for capital renewal and expansion
- \$2.0 million for branding and marketing activities
- \$1.4 million for operational initiatives including the HR digitization project and business process redesigns
- \$1.0 million wireless network expansion and other existing IT initiatives

#### 10.1.5 OPERATING FUND BUDGET CONCLUSIONS

This budget includes plans to support the refreshed vision and strategic plan priorities associated with inclusive excellence, learning and teaching, research and scholarship, engaging local, national, Indigenous, and global communities, and operational excellence. The 2021/22 Operating Fund is structurally based with a \$42.3 million surplus. One-time expenditures of \$47.1 million include strategic and capital priorities resulting in a net deficit of \$4.8 million. The structural surplus is driven by international enrolment growth and flow-through of the growth of domestic enrolment achieved in 2020/21. The Operating Fund is also supporting some of the shortfall related to existing contractual commitments for capital projects underway, which were planned to be funded by the MD or Graduate Expansion Grant cancelled by MCU in 2019.

## 10.2 RESEARCH FUND

Table 7: Research Fund Summary

(\$ thousands)						
	2020/21 Budget	2020/21 Projection	2020/21 Variance	2021/22 Budget	2022/23 Plan	2023/24 Plan
<b>Revenues</b>						
Research grants and contracts	153,000	237,000	84,000	186,000	188,000	190,000
<b>Total revenues</b>	<b>153,000</b>	<b>237,000</b>	<b>84,000</b>	<b>186,000</b>	<b>188,000</b>	<b>190,000</b>
<b>Expenses</b>						
Salaries, wages and benefits	86,000	117,000	(31,000)	119,000	121,000	123,000
All other expenses*	65,000	63,000	2,000	63,000	63,000	63,000
Transfers to (from) other funds	(15,566)	(19,340)	3,774	(16,414)	(14,698)	(14,745)
<b>Total expenses</b>	<b>135,434</b>	<b>160,660</b>	<b>(25,226)</b>	<b>165,586</b>	<b>169,302</b>	<b>171,255</b>
<b>Excess of revenues over expenses</b>	<b>17,566</b>	<b>76,340</b>	<b>58,774</b>	<b>20,414</b>	<b>18,698</b>	<b>18,745</b>
Fund balance, beginning of year	242,660	226,036	(16,624)	302,376	322,790	341,488
<b>Fund balance, end of year</b>	<b>260,226</b>	<b>302,376</b>	<b>42,150</b>	<b>322,790</b>	<b>341,488</b>	<b>360,233</b>

\*Including transfers to capital

The 2019/20 Research Fund revenue projection is \$237.0 million, which is based on research revenue receipted, including revenue received for future periods, net of hospital research. The projection is \$84.0 million higher than the original budget due in large part to the award of several research grants and contracts related to COVID-19 and other government support programs.

It is anticipated that research revenue related to COVID-19 will diminish in 2021/22 compared to 2020/21. Expenditures are expected to be maintained at 2020/21 levels as those projects are continuing. Modest growth in research revenue not related to COVID-19 is anticipated but may be sector-specific and will depend on recovery of the general economy.

The plan years of 2022/23 and 2023/24 show modest growth in research revenue and expenses connected to continuing research into COVID-19.



### 10.3 CAPITAL FUND

Table 8: Capital Fund Summary

(\$ thousands)						
	2020/21 Budget	2020/21 Projection	2020/21 Variance	2021/22 Budget	2022/23 Plan	2023/24 Plan
<b>Revenues</b>						
Operating grants	3,290	5,061	1,771	5,000	5,970	5,330
Other revenues	11,620	9,585	(2,035)	22,610	92,835	148,710
<b>Total revenues</b>	<b>14,910</b>	<b>14,646</b>	<b>(264)</b>	<b>27,610</b>	<b>98,805</b>	<b>154,040</b>
<b>Expenses</b>						
All other expenses, including capital	170,149	72,596	97,553	164,487	265,894	257,923
Transfers to (from) other funds	(37,715)	(76,755)	39,039	(35,655)	(49,225)	(48,594)
Debt and financing charges	(12,645)	(9,350)	(3,295)	(11,058)	(16,569)	(18,740)
<b>Total expenses</b>	<b>119,789</b>	<b>(13,509)</b>	<b>133,297</b>	<b>117,774</b>	<b>200,100</b>	<b>190,589</b>
<b>Excess of revenues over expenses</b>	<b>(104,879)</b>	<b>28,154</b>	<b>133,033</b>	<b>(90,164)</b>	<b>(101,295)</b>	<b>(36,549)</b>
Fund balance, beginning of year	23,401	63,242	39,841	91,396	1,232	(100,063)
<b>Fund balance, end of year</b>	<b>(81,478)</b>	<b>91,396</b>	<b>172,874</b>	<b>1,232</b>	<b>(100,063)</b>	<b>(136,612)</b>

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 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.<sup>10</sup>

Table 9 below summarizes the total expected capital funding and spending by project for fiscal 2019/20 to 2022/23. The updated capital projection (\$72.6 million) is significantly lower than the original budget (\$170.1 million) due to slower than expected spending on some key projects such as the McLean Center for Collaborative Discovery, the Athletics and Recreation expansion, and the Research Commercialization Project, largely due to COVID-19. For 2021/22, spending on capital projects is expected to resume at pre-pandemic levels.

<sup>10</sup> 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%.

**Table 9: Capital Spending by Project**

(\$ thousands)

	2020/21 Budget	2020/21 Projection	2020/21 Variance	2021/22 Plan	2022/23 Plan	2023/24 Plan
<b>Approved projects</b>						
ABB 5th Floor Fit Out	-	2,435	(2,435)	273	-	-
Advanced Manufacturing Centre - PVP Approved	-	340	(340)	5,000	3,450	-
Athletic and Recreation - Pulse and Student Space Expansion	30,110	16,600	13,510	24,000	8,092	-
CCEM CALM Lab Renovation	3,400	2,300	1,100	1,394	-	-
CFI 2017	-	4,378	(4,378)	-	-	-
Classroom Reconfiguration Plan	2,000	2,000	-	2,938	-	-
Deferred Maintenance Projects	13,020	15,113	(2,093)	16,654	16,593	16,593
Energy Management Projects and Sustainability	-	1,654	(1,654)	-	-	-
Greenhouse and LSB Phase One	10,000	200	9,800	10,000	10,000	1,662
Innovation Hub - The Clinic	1,492	972	520	-	-	-
Lot K Parking Structure	7,000	-	7,000	10,000	7,000	-
McLean Center For Collaborative Discovery	29,726	3,515	26,211	25,000	30,000	28,446
One-Stop Shop	6,000	400	5,600	2,329	-	-
Parking and Security Relocation	2,300	1,020	1,280	1,242	-	-
PeakShavers and Boilers	-	-	-	5,000	22,000	2,000
Peter George Center for Living and Learning	8,104	6,274	1,830	-	-	-
Research Commercialization Project	9,980	6,900	3,080	24,000	14,782	-
Residence Renewal Program	2,000	-	2,000	2,000	2,000	2,000
Strategic Property Acquisitions	11,100	7,000	4,100	-	-	(1,925)
Other	13,744	1,496	12,248	737	737	737
<b>Total approved projects</b>	<b>149,976</b>	<b>72,596</b>	<b>77,380</b>	<b>130,567</b>	<b>114,654</b>	<b>49,513</b>
<b>Estimate of planned projects - not yet approved</b>	<b>20,173</b>	<b>-</b>	<b>20,173</b>	<b>33,920</b>	<b>151,240</b>	<b>208,410</b>
<b>Total capital spending</b>	<b>170,149</b>	<b>72,596</b>	<b>97,553</b>	<b>164,487</b>	<b>265,894</b>	<b>257,923</b>

The table above includes capital projects that are approved, as well as an estimate of projects in the planning phase. The unapproved projects are currently being reviewed by senior management. If these planned projects are pursued, a business case will be created including stress testing for varying income adjustments. 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)						
	2020/21 Budget	2020/21 Projection	2020/21 Variance	2021/22 Budget	2022/23 Plan	2023/24 Plan
<b>Revenues</b>						
Other revenues	2,787	2,787	-	2,637	2,559	4,000
Investment income (loss)	15,781	26,657	10,876	26,995	27,306	27,617
<b>Total revenues</b>	<b>18,568</b>	<b>29,444</b>	<b>10,876</b>	<b>29,632</b>	<b>29,865</b>	<b>31,617</b>
<b>Expenses</b>						
All other expenses	1,869	2,535	(666)	4,820	3,768	3,662
Transfers to (from) other funds	20,718	20,867	(149)	19,270	20,531	20,734
<b>Total expenses</b>	<b>22,587</b>	<b>23,402</b>	<b>(815)</b>	<b>24,090</b>	<b>24,299</b>	<b>24,396</b>
<b>Excess of revenues over expenses</b>	<b>(4,019)</b>	<b>6,042</b>	<b>10,061</b>	<b>5,542</b>	<b>5,566</b>	<b>7,221</b>
Fund balance, beginning of year	394,520	476,018	81,498	482,060	487,601	493,167
<b>Fund balance, end of year</b>	<b>390,501</b>	<b>482,060</b>	<b>91,559</b>	<b>487,601</b>	<b>493,167</b>	<b>500,388</b>

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 rate of return on endowed trust funds for all planning years is projected achieve the long-term rate of 5.6% net of investment management fees, an improvement on the previous assumptions for planning years 2020/21 through 2022/23 of 4.0%, 5.4% and 5.6% respectively. In addition, the investment loss in 2019/20 was significantly less than expected, resulting in a favourable fund balance at the beginning of 2020/21.

In order to protect the capital value of external endowments and ensure that spending allocations can increase over time with inflation, an endowment capital protection policy limits the amount of investment income allocated for spending and administration<sup>11</sup>. The policy requires the reinvestment of excess income earned (interest, dividends, realized and unrealized gains, net of expenses) to protect the capital value of the endowment from inflation.

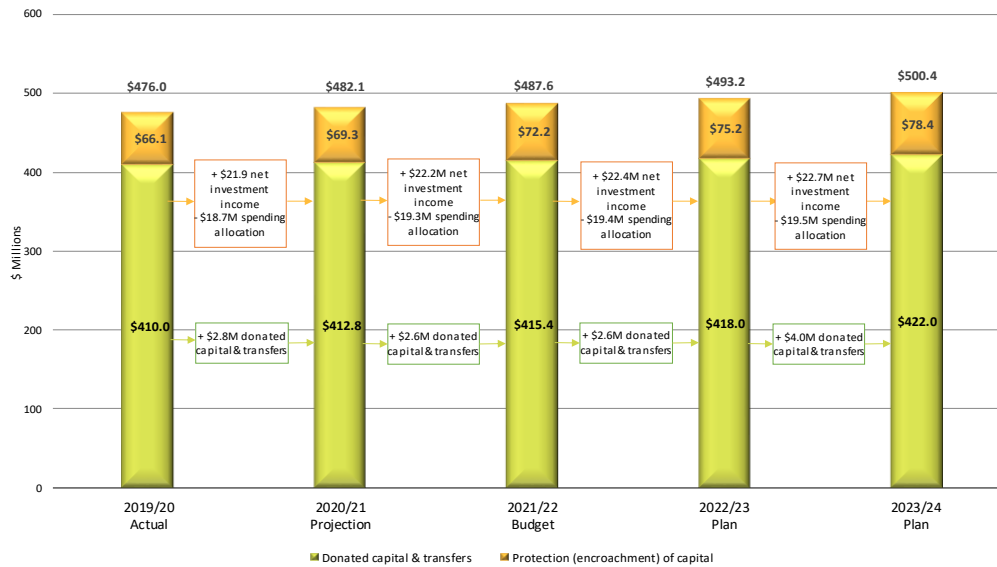
Following the market downturn in 2008, several policies were implemented to smooth the spending allocation spend despite volatility.

- The spending allocation is calculated based on the monthly market value of the capital balance of each trust fund over the last five years. The impact of temporary losses is moderated by the longer-term market values.
- In years where investment returns are less than the spending allocation, the policy allows temporary encroachment of reinvested income.

<sup>11</sup> The current spending limit is 5% (4% for spending and 1% for administration).

In the event of a more severe downturn, the specific purpose reserve may be used as a backstop to allow spending to continue.

**Figure 16: External Endowment Fund Balance Trend**



At April 30, 2020, the University's external endowment was \$476.0 million, including a protection of capital amount of \$66.1 million, reflecting an erosion due to the market downturn at the end of the fiscal year. Using the projected 5.6% rate of return which is above the spending limit, the preservation of capital will continue to increase. Underwater trusts, where the market value is below the original capital, will continue to be regularly monitored and appropriation action taken.

## 10.5 INTERNAL ENDOWMENT

**Table 11: Internal Endowment Summary**

(\$ thousands)						
	2020/21 Budget	2020/21 Projection	2020/21 Variance	2021/22 Budget	2022/23 Plan	2023/24 Plan
<b>Revenues</b>						
Other revenues	100	100	-	100	100	101
Investment income (loss)	4,673	7,915	3,242	8,007	8,095	8,188
Investment income transfer	(5,507)	(5,489)	18	(5,631)	(5,631)	(5,631)
<b>Total revenues</b>	<b>(734)</b>	<b>2,526</b>	<b>3,260</b>	<b>2,476</b>	<b>2,564</b>	<b>2,658</b>
<b>Expenses</b>						
All other expenses	-	182	(182)	160	169	173
Transfers to (from) other funds	584	707	(123)	715	723	731
<b>Total expenses</b>	<b>584</b>	<b>889</b>	<b>(305)</b>	<b>875</b>	<b>892</b>	<b>904</b>
<b>Excess of revenues over expenses</b>	<b>(1,318)</b>	<b>1,637</b>	<b>2,955</b>	<b>1,601</b>	<b>1,672</b>	<b>1,754</b>
Fund balance, beginning of year	116,823	141,333	24,510	142,970	144,571	146,243
<b>Fund balance, end of year</b>	<b>115,505</b>	<b>142,970</b>	<b>27,465</b>	<b>144,571</b>	<b>146,243</b>	<b>147,997</b>

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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. Like the external endowment, the internal endowment is projected to achieve the long-term investment return rate of 5.6% net of investment fees, and the investment loss in 2019/20 was significantly less than expected, resulting in a favourable fund balance at the beginning of 2020/21.

The largest endowment is the Dr. H. L. Hooker Endowment, which is a bequest restricted for use to advance the University's mission. An annual allocation from this internal endowment is made to the Operating Fund and distributed to Faculties through the budget model. In 2021/22 the allocation amounts to \$5.6 million (within the \$9.5 million annual Operating Fund transfer).

## 10.6 ANCILLARY FUND

Table 12: Ancillary Fund Summary

(\$ thousands)						
	2020/21 Budget	2020/21 Projection	2020/21 Variance	2021/22 Budget	2022/23 Plan	2023/24 Plan
<b>Revenues</b>						
Ancillary sales and services	55,172	19,309	(35,863)	78,182	93,259	103,791
<b>Total revenues</b>	<b>55,172</b>	<b>19,309</b>	<b>(35,863)</b>	<b>78,182</b>	<b>93,259</b>	<b>103,791</b>
<b>Expenses</b>						
Salaries, wages and benefits	23,009	25,244	(2,235)	30,494	32,877	35,102
All other expenses	27,237	14,854	12,383	30,637	33,473	36,061
Transfers to (from) other funds*	16,199	(7,488)	23,687	7,968	10,906	16,878
Debt and financing charges	8,093	5,243	2,850	6,347	7,603	9,417
<b>Total expenses</b>	<b>74,538</b>	<b>37,854</b>	<b>36,685</b>	<b>75,446</b>	<b>84,859</b>	<b>97,459</b>
<b>Excess of revenues over expenses</b>	<b>(19,367)</b>	<b>(18,545)</b>	<b>822</b>	<b>2,736</b>	<b>8,400</b>	<b>6,332</b>
Fund balance, beginning of year	(2,357)	10,300	12,657	(8,245)	(5,508)	2,892
<b>Fund balance, end of year</b>	<b>(21,723)</b>	<b>(8,245)</b>	<b>13,479</b>	<b>(5,508)</b>	<b>2,892</b>	<b>9,224</b>

\*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.

The decision to close the campus due to the pandemic has had significant financial implications on the non-academic ancillaries, while the Centre for Continuing Education (CCE) has had to rapidly pivot to a full offering of online courses.

The 2020/21 original budget included a contingency reduction in revenues and related salaries, benefits, and cost of sales, assuming the full campus physical closure would end in September 2020, to account for the potential impact of COVID-19 of lower student numbers and events on campus. The revised projection for ancillaries reflects the extended campus closure for the fall and winter terms in 2020/21. This results in a temporary deficit fund balance for the Ancillary Fund at the end of 2020/21 of \$8.3 million.

Ancillaries have taken extraordinary steps to provide core services while shutting down units and, in some cases, laying off casual, full-time, and part-time staff. Despite best efforts to mitigate losses,

each non-academic ancillary (Campus Store, Hospitality Services, Housing and Conference Services, Media Production Services, and Parking Services) has a projected loss, which when combined totals \$19.3 million.

The 2021/22 budget is built on the assumption that campus begins to open up and students are on site in some form in fall 2022, allowing more ancillaries to generate revenue. This results in a small surplus for the Ancillary Fund and a return to a positive reserve balance within the planning period. The analysis and planning to return each unit to break-even is ongoing and will be solidified when campus re-opening plans are further defined.

### 10.6.1 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 can 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 resource content providers.

With the rise in online learning and growth of dynamic content and ebooks, the unit sales of print materials continue to decline. The sale of course materials will not generate enough revenue to offset expenses, and the general book department within the Campus Store also operates at a loss. The store continues to sell general reference materials, alumni and faculty publications as well as general reading materials by offsetting this loss through the sale of crested merchandise

The Campus Store will be focused on outreach and community engagement, working with community partners to move current objectives forward while exploring new business opportunities.

### 10.6.2 McMASTER CONTINUING EDUCATION (MCE)

McMaster Continuing Education is well aligned with the University's Strategic Mandate Agreement given its delivery of career-focused education to adult learners. At present, the unit serves just under 5,000 learners annually. Increasingly, adult learners from newcomer backgrounds who reside in the Hamilton region as well as international learners from around the world are studying through MCE. The unit also serves undergraduates who choose to blend their degree work with career-focused studies. Graduates of academic certificate and diploma programs are advantaged in careers related to five main areas: 1) business, accounting, and human resources management; 2) communications and marketing; 3) health and social services; 4) data and emerging technologies; and 5) metallurgy. A new Certificate of Professional Learning provides adult learners a compressed pathway to new knowledge and skills while the piloting of micro-credentials and delivery of not-for-credit professional development offerings benefit adults needing workplace-sensitive learning. MCE is actively increasing the career development services it offers students and enhancing its relationship with the City of Hamilton in the data and technology sector.

Budget challenges center around staff costs related to the design, delivery, and marketing of excellent online programs, which require a greater staff complement than more traditional approaches to teaching and learning. Recent increases in enrolments are also affecting staffing costs and increasing the need for more instructors with strong industry expertise and online teaching experience. While

continuing education is well established in the online education sector, there are additional costs as new educational technologies emerge. Continuing Education is presently embarked on three large systems projects: completion of the implementation of a new customer relations management system; completion of a new web site; and discovery work and initial implementation work for a registration system that will better support non-traditional students. While all three initiatives involve substantive financial, time, and human resource investments.

The unit's current strategic plan is ending, so this year will focus on the development of a new strategic plan, beginning with a review of pillars from the present plan which may be extended. A careful review and consultation process will inform all stages of the development of the plan. MCE will continue to deepen its relationships with internal units and external partners in the region, and with the adult and professional education sectors more broadly. Should MCE and its partners be successful on submissions made to Ontario's Virtual Learning Strategy competition, carrying out these projects will take place in 2021/22. Research and innovation in contemporary approaches to adult, online, and virtual education and in relation to micro-learning and alternate digital credentials are likewise planned for the upcoming year.

### 10.6.3 HOSPITALITY SERVICES

Each Hospitality Services location plays a critical support role in McMaster's ongoing pursuit of excellence and enhancing the student experience. Ensuring a focus on efficiency, flexibility and adaptability allows the unit to contribute to McMaster's mission and the core operating budget. The Hospitality Services three-year strategic plan was developed within the framework of the key business objectives of the department that align with the Strategic Mandate Agreement and the Administration Division strategy. Hospitality Services has developed a strong direction for achieving financial stability, operational growth and improving the student experience to ensure long-term relevance in supporting McMaster's overall strategy and vision. Technology, nutrition, and the internationalization of our menus will guide the department as we provide a more in-depth food service experience for students and integrate ourselves deeper into the community through business and volunteer partnerships. Hospitality is also committed to the further enrichment of program elements in the areas of community, wellness and sustainability as a means of furthering our alignment with the Okanagan Charter

McMaster University continues to operate a highly respected Hospitality department – a reputation built on quality and value. Providing this based on some of the lowest meal plan pricing among our peers is a testament to the resourcefulness and the innovation of the department. 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, remaining competitive in our market, and continuing the current level of quality and reputation. In addition to these pricing challenges, increased University operating costs and volatile food inflationary costs will pose financial challenges to the department. Hospitality Services currently projects that the negative financial impact of the pandemic on departmental reserves will be resolved within the three-year window of this planning period.

While the pressures of cost and pricing create budget challenges, we are committed to diligently work to assess and validate our approach and take corrective actions that will 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 reviews of meal plan and retail pricing, increased internationalized menu offerings that support our diverse cultural student needs, continued review/implementation of trending and innovative concepts, social media marketing, and collaboration with internal partners to develop an integrated technology options. Operational efficiencies will be driven through a streamlined, compliant purchasing approach, a continual operational loss analysis of units, and a review of inventory and management carrying costs highlighted during the pandemic.

#### **10.6.4 HOUSING AND CONFERENCE SERVICES (HCS)**

Housing and Conference Services directly supports the University's goal of advancing human and societal well-being and the overriding vision of educating for capability. Specifically, HCS 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 is a critical and proven factor in assisting with our SMA3 metric of retaining students between Year 1 and Year 2. Expansion plans, including a graduate residence, support the undergraduate and graduate student experience in alignment with SMA3 metrics.

The decision to transition fall and winter courses to virtual learning during the pandemic and the limited use of residences to support students in exceptional circumstances will result in a large operating deficit in 2020/21. HCS contained our operational deficit by redirecting \$13.6 million in savings for the Bates Residence redevelopment project against the revenue shortfall, ultimately limiting the deficit and allowing for an accelerated financial recovery over the planning period. Plans for 2021/22 focus on re-establishing operations at approximately 60% capacity in alignment with Public Health guidelines, while trying to mitigate continuing COVID-19 cost pressures (i.e. custodial costs, cleaning supplies, personal protective equipment, improved ventilation, etc).

#### **10.6.5 MEDIA PRODUCTION SERVICES (MPS)**

Media Production Services will continue to provide printing and creative services in support of McMaster's academic mission with the goal of maintaining levels of customer satisfaction (currently 95%). In order to assist the University in achieving its web compliance requirements, MPS will continue work on improving and promoting the free self-serve MacSites option. The new management information system will offer additional efficiencies and an improved customer experience.

The COVID-19 pandemic has fundamentally altered projections for 2020/21 and beyond. MPS, like all ancillaries, relies heavily on serving faculty and staff on campus to generate revenue. The loss of fleet revenue has had the largest single impact on the MPS budget. However other revenue streams, such as exam production, optical mark recognition marking, and custom courseware are likely to be negatively impacted on an ongoing basis. Assuming regular business resumes on campus by fall 2021, it is expected that MPS revenues will return over time. MPS has a proven track record of rising to tough challenges.

MPS will re-examine how best to serve the University by assessing our services, product offerings, and resources. A departmental restructure will be undertaken, including a review of roles, redistribution of work and reassignment of responsibilities.



### 10.6.6 PARKING SERVICES

Parking Services will continue to invest in physical space on campus in line with the new Campus Master Plan and maintain existing parking infrastructure. The unit will be managing parking demands for the graduate student residence (GSR) when it is completed in 2023, while continuing to support undergraduate and graduate students on campus by designating a lot for student parking only and by providing them with employment opportunities to support their education where possible.

The unit will be taking an additional loan in 2021/22 for the Peter George Center for Living and Learning underground lot with the GSR and Lot K loan payments starting in the following year. The department will continue to incur revenue losses associated with the pandemic and removal of the charge for monthly parking. Although charging for monthly rates will resume in September 2021, it is difficult to determine how long the loss associated with the pandemic will continue. Loan payments along with continued revenue losses will considerably constrain the parking budget leaving minimal funds available for maintenance and capital projects. Construction on campus will continue to impact parking by taking over parking spaces for the duration of construction. Although the loss of space due to construction is temporary, multiple projects taking place simultaneously create significant challenges for parking management.

A new parking strategy will be developed in 2021 in line with the new Campus Master Plan. Parking capacity constraint issues may be addressed by increasing density in existing parking lots instead of creating new lots. Consideration may also be given to improving parking access for visitors and special event guests.

## 10.7 SPECIFICALLY EXTERNALLY FUNDED

Table 13: Specifically Externally Funded Summary

(\$ thousands)						
	2020/21 Budget	2020/21 Projection	2020/21 Variance	2021/22 Budget	2022/23 Plan	2023/24 Plan
<b>Revenues</b>						
Other revenues	33,481	32,845	(636)	31,980	32,864	32,148
<b>Total revenues</b>	<b>33,481</b>	<b>32,845</b>	<b>(636)</b>	<b>31,980</b>	<b>32,864</b>	<b>32,148</b>
<b>Expenses</b>						
Salaries, wages and benefits	23,534	22,903	631	22,730	22,854	23,059
All other expenses	10,463	10,051	413	9,822	10,303	9,412
Transfers to (from) other funds	(165)	6	(171)	(179)	(187)	(193)
<b>Total expenses</b>	<b>33,833</b>	<b>32,960</b>	<b>873</b>	<b>32,372</b>	<b>32,970</b>	<b>32,279</b>
<b>Excess of revenues over expenses</b>	<b>(352)</b>	<b>(115)</b>	<b>237</b>	<b>(393)</b>	<b>(106)</b>	<b>(131)</b>
Fund balance, beginning of year	6,846	6,672	(174)	6,557	6,164	6,058
<b>Fund balance, end of year</b>	<b>6,494</b>	<b>6,557</b>	<b>63</b>	<b>6,164</b>	<b>6,058</b>	<b>5,927</b>

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.

## 10.8 INTERNAL RESERVES

There are other critical internal reserves created to settle future obligations associated with current faculty, staff or other activities. The balance in 2020/21 is projected to be \$102.4 million, growing to \$201.0 million in 2021/22 with the issuance of new debt, and returning below \$200.0 million in 2022/23 and future years as the financing is deployed to strategic projects.

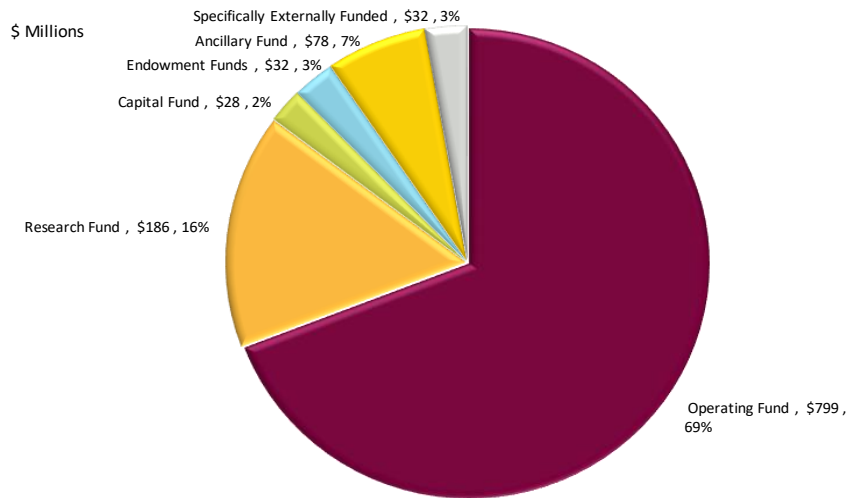
Internal reserves include two categories of funding. First, Operating and Ancillary Fund reserves are balances carried forward into future years. Faculties and departments are required to develop structurally balanced budgets each year and additionally are expected to save reserves for new capital investments or renovations or other large strategic initiatives. Combined Operating and Ancillary Fund reserves are projected to be \$151.0 million in 2020/21, falling to \$148.9 million in 2021/22 due to the planned use of reserves for strategic projects, before increasing to \$156.6 million in 2022/23 and \$171.8 million in 2023/24 as ancillary operations recover from COVID-19 losses.

The second component of internal reserves relates to future obligation settlement needs. The settlement-related balances appear as part of 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 by 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. All these 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 grown to 44% 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. The reserve strategies have proved to be a prudent set aside of University resources following the 2008/09 economic crisis and have served the University well to mitigate COVID-19 impacts.

## 11 CONSOLIDATED RESULTS

Figure 17: Consolidated 2021/22 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 5 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.

Table 14: Reconciliation of Operating Fund Budget to Accrual-Based Budget

(\$ thousands)						
	2020/21 Budget	2020/21 Projection	2020/21 Variance	2021/22 Budget	2022/23 Plan	2023/24 Plan
Excess (deficiency) of Operating Fund revenues over expenses	(53,859)	(37,383)	16,476	(4,822)	(630)	8,809
Capital expenditures net of amortization	96,215	14,951	(81,264)	79,538	89,646	82,709
Investment income (loss) on internal endowments	(1,318)	1,637	2,955	1,600	1,673	1,754
Pension and non-pension adjustments	13,638	11,676	(1,962)	13,714	14,797	15,197
Changes in other reserves	(67,664)	52,516	120,180	(11,191)	(4,817)	(8,659)
<b>Total accrual adjustment</b>	<b>40,871</b>	<b>80,781</b>	<b>39,910</b>	<b>83,661</b>	<b>101,299</b>	<b>91,002</b>
<b>Excess (deficiency) of revenues over expenses</b>	<b>(12,988)</b>	<b>43,398</b>	<b>56,386</b>	<b>78,839</b>	<b>100,669</b>	<b>99,811</b>

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.

The large favourable variance in other reserves in 2020/21 reflects the anticipated impacts of lower international enrolment on non-operating funds that did not occur, as well as lower capital expenditures decreasing the need for drawing funding from reserves.

## 11.1 STATEMENT OF OPERATIONS

Table 15: Consolidated Statement of Operations (Accrual Basis)

(\$ thousands)	2020/21 Budget	2020/21 Projection	2020/21 Variance	2021/22 Budget	2022/23 Plan	2023/24 Plan
<b>Revenues</b>						
Operating grants	273,794	278,603	4,809	278,248	277,778	277,399
Research grants and contracts	183,403	176,326	(7,077)	178,971	183,445	188,031
Tuition fees	349,130	416,153	67,024	432,852	472,252	510,253
Ancillary sales and services	55,172	19,309	(35,863)	78,182	93,259	103,791
Other revenues	211,017	182,504	(28,512)	202,647	206,700	220,102
Investment income (net)	48,131	60,891	12,760	66,716	70,773	71,903
Amortization of deferred capital contributions	45,033	39,650	(5,384)	38,719	39,037	44,989
<b>Total revenues</b>	<b>1,165,679</b>	<b>1,173,436</b>	<b>7,757</b>	<b>1,276,335</b>	<b>1,343,245</b>	<b>1,416,468</b>
<b>Expenses</b>						
Salaries and wages	558,181	546,106	12,075	594,709	618,497	655,607
Employee benefits	129,187	133,106	(3,919)	144,953	146,402	149,330
Supplies and services	384,703	357,022	27,680	359,812	373,718	402,180
Interest on long-term debt	13,155	13,151	3	15,358	17,564	17,517
Amortization of capital assets	93,441	80,652	12,789	82,664	86,395	92,022
<b>Total expenses</b>	<b>1,178,667</b>	<b>1,130,038</b>	<b>48,629</b>	<b>1,197,496</b>	<b>1,242,576</b>	<b>1,316,657</b>
<b>Excess of revenues over expenses</b>	<b>(12,988)</b>	<b>43,398</b>	<b>56,386</b>	<b>78,839</b>	<b>100,669</b>	<b>99,811</b>

McMaster's objective is to achieve a 10% excess of revenues over expenses to generate sufficient internal reserves to cover future obligations. The excess is currently less than 10% of consolidated revenues in all years, averaging approximately 7%. Both revenue and expenses are expected to increase in 2021/22 with the increase in in-person learning, returning to pre-pandemic levels by 2022/23.

## 11.2 STATEMENT OF FINANCIAL POSITION

Table 16: Consolidated Statement of Financial Position

(\$ thousands)						
	2020/21 Budget	2020/21 Projection	2020/21 Variance	2021/22 Budget	2022/23 Plan	2023/24 Plan
<b>Assets</b>						
Cash	33,224	17,223	(16,000)	18,317	19,053	20,203
Short-term investments	166,118	195,100	28,982	206,953	215,341	228,413
Investments	990,848	1,317,138	326,290	1,411,559	1,388,895	1,442,056
Capital assets	1,354,513	1,235,399	(119,114)	1,352,221	1,566,720	1,767,621
Other assets	164,689	232,127	67,438	252,950	258,009	263,169
<b>Total assets</b>	<b>2,709,391</b>	<b>2,996,987</b>	<b>287,596</b>	<b>3,241,998</b>	<b>3,448,019</b>	<b>3,721,461</b>
<b>Liabilities and deferred contributions</b>						
Current liabilities	197,207	176,373	(20,835)	179,911	183,521	187,204
Deferred contributions for future expenses	854,336	859,308	4,972	871,512	953,727	1,086,034
Long-term debt	267,654	267,201	(453)	417,691	418,247	418,876
Employee future benefits and pension	346,214	457,415	111,201	466,563	475,894	485,412
<b>Total liabilities and deferred contributions</b>	<b>1,665,412</b>	<b>1,760,296</b>	<b>94,885</b>	<b>1,935,678</b>	<b>2,031,391</b>	<b>2,177,527</b>
<b>Net assets</b>						
Unrestricted	10,755	-	(10,755)	-	-	-
Internally restricted reserves	(91,900)	102,350	194,250	201,052	162,456	186,373
Equity in capital assets	619,119	502,893	(116,225)	466,441	607,846	685,754
Endowments			-			
Internal	115,505	142,970	27,466	144,571	146,243	147,997
External	390,501	488,477	97,976	494,256	500,082	523,811
<b>Total net assets</b>	<b>1,043,979</b>	<b>1,236,691</b>	<b>192,711</b>	<b>1,306,320</b>	<b>1,416,628</b>	<b>1,543,935</b>
<b>Total liabilities and net assets</b>	<b>2,709,391</b>	<b>2,996,987</b>	<b>287,596</b>	<b>3,241,998</b>	<b>3,448,019</b>	<b>3,721,461</b>

The Statement of Financial Position is the University's consolidated balance sheet.

Cash and short-term investments reflect funds held for current spending. The investments line includes medium-term funds in longer durations approximating 36 to 48 months, as well as long-term investments 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 5). Other assets include grants and other accounts receivable, prepaid expenses, inventories and investments in McMaster Innovation Park, Halton McMaster Family Health Centre, and public-private partnership investments.

Deferred contributions for future expenses reflect funding received for specific purposes, primarily research and capital, 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 neutral impact to the Statement of Operations. The long-term debt obligation relates primarily to bonds raised in 2002 and 2015 for capital investments, with additional debt of \$150 million approved for issuance in 2021/22 as outlined in Section 12 Overall Borrowing and Debt Position. All bond obligations will have an internally restricted sinking fund reserve to settle the future \$390 million in balloon payments. Long-term debt includes the liability for decommissioning the nuclear reactor as determined by the Canadian Nuclear Safety Commission. An offsetting internally restricted reserve has been created to fund this obligation when it becomes due. The liability for employee future benefits and pension is determined by the University's third-party actuary for each plan the University has with its faculty and staff. For costs associated with the variable pension expenses and future post-retirement benefits, internally restricted reserves are used.

Finally, net assets are made up of internally restricted reserves, equity in capital assets, and internal and external endowments. Details of internally restricted reserves and the two endowments are provided in sections 10.8, 10.4 and 10.5 respectively. Equity in capital assets reflects accrual-basis adjustments that increase with new University-funded capital investments, and decrease with amortization over the assets' useful life.

### 11.3 STATEMENT OF CASH FLOWS

Table 17: Consolidated Statement of Cash Flows

(\$ thousands)						
	2020/21 Budget	2020/21 Projection	2020/21 Variance	2021/22 Budget	2022/23 Plan	2023/24 Plan
Excess of revenues over expenses	(12,888)	43,398	56,286	78,839	100,669	99,811
<b>Adjustments for non-cash items:</b>						
Amortization of deferred capital contributions	(45,033)	(39,650)	5,384	(38,719)	(39,037)	(44,989)
Amortization of capital assets	93,441	80,652	(12,789)	82,664	86,395	92,022
Employee future benefits	(1,998)	(5,600)	(3,602)	(15,089)	3,713	3,668
Change in decommissioning obligation	1,138	1,107	(30)	1,193	1,285	1,384
Net change in deferred contributions	19,180	30,684	11,503	42,763	129,109	185,309
<b>Financing and investing activities:</b>						
Purchase of capital assets	(200,149)	(107,596)	92,553	(199,487)	(300,894)	(292,923)
Net change in investments	152,978	(15,030)	(168,009)	(106,273)	14,274	(66,232)
Net change in external endowments	(4,020)	12,559	16,578	5,879	5,926	23,828
Issuance of long-term debt	-	-	-	150,000	-	-
Principal repayments on long-term obligations	(654)	(709)	(55)	(678)	(703)	(728)
<b>Increase/(decrease) in cash</b>	<b>1,996</b>	<b>(184)</b>	<b>(2,180)</b>	<b>1,093</b>	<b>736</b>	<b>1,150</b>
Cash, beginning of year	31,228	17,408	(13,820)	17,224	18,317	19,053
<b>Cash, end of year</b>	<b>33,224</b>	<b>17,224</b>	<b>(16,000)</b>	<b>18,317</b>	<b>19,053</b>	<b>20,204</b>

### 11.4 DEBT MANAGEMENT RATIOS

Table 18: Debt Management Ratios

	2020/21 Budget	2020/21 Projection	2020/21 Variance	2021/22 Budget	2022/23 Plan	2023/24 Plan
<b>Debt Management Policy Ratios</b>						
Expendable Net Assets to Debt (Target > 1.0x)	1.1	2.2	1.1	1.6	1.5	1.5
Interest Burden (Target < 4.0%)	1.2%	1.2%	0.0%	1.4%	1.5%	1.4%
Debt per FTE (Target < \$12,000)	\$8,731	\$7,920	\$811	\$11,999	\$11,690	\$11,476
<b>Debt Management Monitoring Ratios</b>						
Net Income/(Loss) Ratio (McMaster Target > 1.0%)	-1.1%	3.7%	4.8%	6.1%	7.4%	7.0%
Net Operating Revenues (McMaster Target > 2.0%) <sup>1</sup>	2.0%	7.0%	5.0%	10.0%	12.0%	12.0%
Primary Reserves Ratio (McMaster Target > 91 days) <sup>2</sup>	91	190	99	204	183	175
Viability Ratio (McMaster Target > 1.0) <sup>3</sup>	1.1	2.2	1.1	1.6	1.5	1.5

<sup>1</sup> Measures cash flow from operating activities as a proportion of revenues

<sup>2</sup> Measures the number of days University reserves can cover operating expenses

<sup>3</sup> Measures the proportion of long-term debt that could be settled using unrestricted assets

Since capital projects require a combination of financing sources, debt is considered a perpetual component of the University's capital structure. The University has established guidelines regarding the optimal amount of outstanding debt using the above ratios, which measure balance sheet resources and annual cash flow. These ratios are consistent with those monitored by the University's

credit rating agencies and are subject to review periodically. All ratios over the planning horizon are within acceptable ranges and support the \$150 million debt call approved for 2021/22.

## 11.5 RISKS TO THE 2021/22 BUDGET

The risks emerging from post-pandemic timing creates significant uncertainty to the 2021/22 budget. Financial results are heavily dependent on maintaining domestic and international enrolment levels and resuming some on-campus activity. Prolonged restrictions, further closure or lock-down orders, and delayed vaccination roll-out in Canada are a threat to international enrolment confirmations. Further, ancillary revenues are highly dependent on a return to campus model. These risks are most critical to understanding the financial resources that will be available to support the vision and strategic plan priorities ahead. Significant investments linked to the five priority areas will be required to deliver the Global Nexus initiative and progress on key issues affecting health and society. Climate change and resiliency measures will require capital investments to increase McMaster's alignment with the UN Sustainable Development Goals.

The risks that existed prior to the pandemic generally remain. Maintaining McMaster's status as a global education leader and destination of choice for international students, as well as achieving diversified international enrolment targets remain important goals. Diversity of international enrolment will be important to minimize geopolitical risk. Enrolment growth will eventually be limited by capacity, forcing a greater focus on the delivery of new revenues and operational process efficiencies. Although the University continues to invest in capital expansion projects, post-pandemic there may be some facets of the courses that remain virtual to their benefit. These changes will present further risks.

Implementation of provincial performance- or outcomes-based funding has been delayed, but when funding is linked to metrics in 2022/23 it introduces the risk that up to 60% of McMaster's funding will be linked to the achievement of ten SMA3 targets, nine set by MCU and one selected by McMaster. There is no indication yet of changes to the tuition framework in 2021/22 and beyond, and if domestic tuition rates continue to be 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 continue to 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 2008 financial crisis to cover annual spending commitments that might otherwise be hindered in a prolonged market loss situation. In addition to 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 and enabling greater stability.

Additional systemic or uncontrollable risks include ensuring sufficiency of funding for investments in infrastructure and strategic priorities. Further still, the University has partnered with the private sector in an effort to minimize the debt held directly 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.



## 12 OVERALL BORROWING AND DEBT POSITION

Strategic initiatives and capital projects for both infrastructure and technology require a combination of financing solutions, including internal loans from the central bank, commitments against future revenue streams, gifts, external and 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 debt of up to \$150 million with a maturity of up to 50 years has been approved by the Board of Governors for issuance in 2021/22. This additional debt will replenish the capital reserve by \$135 million (net of a \$15 million sinking fund) to expand financial capacity for large high-priority projects supporting the President's strategic plan. Debt interest of 3% has been used for planning purposes, which will lower the University's weighted average cost of capital (WACC).

Together with two \$120 million debentures maturing in 2052 and 2065, the new \$150 million debt will be structured to create staggering maturities and allow current strategic initiatives to proceed, while maintaining strong financial health metrics and our AA (stable) credit rating with DBRS and S&P. According to the credit rating agencies, the key capacity determinant for McMaster is debt of no more than \$12,000 per student. The amount of the new debt was chosen to maximize financing flexibility while minimizing financing cost, resulting from the strong credit rating.

The Debt Management Policy identifies that financing should preferably go toward projects with internal loan repayment streams as a principle, and business cases should show an ability to repay the capital investment with interest at WACC over a reasonable repayment period. Internal loans associated with completed projects average a 30-year repayment schedule.

## 13 CONCLUSIONS ON THE 2021/22 BUDGET

The consolidated results for 2021/22 are structurally balanced with a \$78.8 million surplus. All funds are structurally balanced. The operating fund is structurally balanced with a budgeted net deficit of \$4.8 million before one-time expenditures of \$47.1 million for capital and strategic plan initiatives.

The ancillary funds projected losses for 2020/21 are \$8.2 million due to campus closures and after several cost mitigation efforts, however the 2021/22 budgeted ancillary results net surplus is \$2.7 million based on a hybrid fall opening. The ancillary's pandemic related losses will be recovered within the planning years of this budget.

Operating grant revenues are budgeted close to 2016/17 levels. The domestic tuition is also flat without any rate inflation. International tuition rates include increases ranging between 6-10% and participation growth up to 20% over the next decade. Any provincial inflationary funding will favourably impact the budget. Conversely, any pandemic driven enrolment impacts (lower participation than planned) will delay one-time planned expenditures to ensure the operating fund remains structurally balanced.

Approved capital projects and new strategic initiatives, such as Global Nexus, are included in the budget and planning years with a net capital expenditure budgeted in 2021/22 of \$90 million. The consolidated budget includes additional debt financing of \$150 million to support capital and strategic initiatives associated with McMaster's strategic plan. The credit rating agencies continue to rate McMaster as AA stable despite one Ontario university entering creditor protection in 2020/21.

McMaster's global reputation, rankings and its student-centered research-intensive experience have continued to assist in attracting the best and brightest students. McMaster's enrolment has remained strong despite the pandemic. This budget and planning years are supported by McMaster's strength.

## APPENDIX 1– OPERATING FUND PROJECTION VS. BUDGET

Table 19: Operating Fund 2020/21 Projection vs. Budget

(\$ thousands)	Operating Fund		2020/21 Variance	
	2020/21 Budget	2020/21 Projection	Favourable/ (Unfavourable)	
<b>Sources of Funding:</b>				
Provincial Grants	235,540	236,355	815	0.3%
Tuition	337,244	398,233	60,989	18.1%
Research Overhead Income	28,993	28,032	(961)	-3.3%
Investment Income	9,467	10,467	1,000	10.6%
Other income	109,508	95,813	(13,695)	-12.5%
<b>Total sources of funding</b>	<b>720,753</b>	<b>768,900</b>	<b>48,147</b>	<b>6.7%</b>
<b>Expenditure:</b>				
Salaries, wages and benefits	522,608	509,688	12,919	2.5%
Utilities and maintenance	43,051	39,716	3,335	7.7%
Equipment and renovations	62,021	122,872	(60,851)	-98.1%
Scholarships, bursaries and work study	34,737	32,536	2,201	6.3%
Library acquisitions	14,253	15,116	(863)	-6.1%
Debt and financing charges	18,448	18,410	37	0.2%
All other expenses	79,495	67,944	11,551	14.5%
<b>Total expenditures</b>	<b>774,612</b>	<b>806,283</b>	<b>(31,671)</b>	<b>-4.1%</b>
<b>Total surplus (deficit)</b>	<b>(53,859)</b>	<b>(37,383)</b>	<b>16,476</b>	<b>30.6%</b>
Fund balances, beginning of year	157,672	196,580	38,908	24.7%
<b>Fund balances, end of year</b>	<b>103,812</b>	<b>159,197</b>	<b>55,384</b>	<b>53.4%</b>

The Operating Fund is projected to end 2020/21 in a more favourable position than the original budget due to favourable fund balances at the end of 2019/20 carrying over, as well as reduced deficit projected in year.

Provincial grants are favourable by \$0.8 million (-0.3%) due to higher final Graduate Expansion grants for 2019/20, which have now been rolled into base and eliminated for future years.

Tuition is favourable by \$61.0 million (18.1%) primarily based on surpassing the original enrolment target within the current tuition framework due to additional offers with no drastic decline in acceptance rates, the reduction budgeted for international enrolment from the COVID-19 fallout did not materialize.

Research overhead income is unfavourable by \$1.0 million (-3.3%) as a result of the lower royalties received in 2019/20 due to the impacts of COVID-19, and royalty income from Inflammatory Bowel Disease Questionnaire (IBDQ) declined from the previous year due to fewer large-scale clinical trials with multiple sites.

Other income is unfavourable by \$13.7 million (-12.5%) as a result of a number of impacts and changes in activities due to the pandemic including reduced student services fees, suspension of summer study abroad programs, and cancellation of alumni events and other fee generating campus activities.

Salaries, wages and benefits are favourable by \$12.9 million (2.5%) predominantly due to staff reductions in full-time and part-time support staff and work study positions.

Utilities and maintenance are favourable by \$3.3 million (7.7%) due to rates adjustments based on the market via industry consultation and decreased consumption due to reduced campus activity and physical closures.

Equipment and renovations are unfavourable by \$60.9 million (-98.1%) driving the unfavourable variance are large increases for capital transfers for the McLean Centre project, Engineering building, and Faculty of Science buildings. These are considered to be one-time transfers that may repeat and are made by choice. Increased investments in equipment and software to facilitate online teaching, lab delivery, and student advising and engagement, and staff working from home also drove the unfavourable variance. Additional equipment purchases have also been made to enable social distancing protocols for lab delivery, and for classroom audio-visual equipment.

Scholarships, bursaries and work-study expenditures are favourable by \$2.2 million (6.3%) due to lower Student Access Guarantee (SAG) obligations.

Library acquisitions are unfavourable by \$0.9 million (-6.1%) due to slightly higher acquisitions cost than budget.

All other expenses are favourable by \$11.6 million (14.5%) primarily due to lower than budget expenses related to the shutdown of campus and remote working including materials and supplies, office expenses, travel, meeting expenses, and externally contracted services, and lower than expected contingency spending on priorities in other expenses, especially University Fund spending crystalizing in other spending categories. This was partially offset by lower internal recoveries, increased consulting and professional services fees and COVID-19 related expenses. Additionally, there were increased investments in research including from the newly established President's Strategic Support Fund which has initially provided directed funding to the McMaster COVID-19 Research Fund, designed to support a broad range of research which will benefit society in dealing with pandemics in the immediate and longer term.

The resulting \$16.5 million favourable in-year deficit variance plus the \$38.9 million favourable opening appropriations variance result in a projected closing balance in the Operating Fund of \$55.4 million (53.4%) greater than the original budget. These appropriations will be carried forward for expenditure in 2021/22 and future years and will help to mitigate the continuing challenges associated with COVID-19, the recovery from the pandemic, and planned investments in capital.

## APPENDIX 2 – BUDGET MODEL CALCULATIONS

McMaster University - New Budget Model - Faculties			Prof. Faculties		Other Faculties		VP Research Discretionary Fund							
Projected Budget Allocation			University Fund		8.00%		8.00%				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)
<b>Revenue</b>														
Undergraduate Tuition			62,005	108,279	32,042	17,612	79,549	2,062,390	42,116	1,792	-			345,459
UG Tuition Adjustment for tuition fee framework			(257)	(954)	237	185	497		275	17				-
Total UG SAG Obligation			(1,009)	(3,564)	(2)	-	-	-	(1)	-	4,576			-
Graduate Tuition			18,042	10,333	11,728	2,290	4,175	-	2,095	-	-			48,664
Operating Grant			18,389	43,000	83,163	14,114	49,750	2,142	22,631	1,669	-	1,497	-	236,355
Other Income			1,259	2,244	4,415	863	2,196	-	1,101	90	-	3,823	-	15,992
Gross Revenue			98,429	159,338	131,584	35,065	136,167	4,204,627	68,218	3,568	4,576	5,321	-	646,470
Undergraduate Cross Faculty Teaching Adjustment			(5,908)	(13,261)	194	8,828	6,593	-	4,020	(464)	-			0
Revenue for Contributions			92,521	146,077	131,777	43,892	142,760	4,204,627	72,238	3,105	4,576	5,321	-	646,470
Internal International Tax			(854)	(1,155)	(20)	(152)	(868)	-	(452)	-		3,500	-	-
University Fund Contribution			(7,402)	(11,686)	(10,542)	(3,511)	(11,421)	-	(5,779)	(248)		50,590	-	-
Research Infrastructure Fund Contribution			(2,776)	(4,382)	(1,318)	(439)	(1,428)	-	(722)	(93)		-	11,158	-
Indirect Cost of Research (excluding Royalties)			374	5,396	11,920	472	4,737	-	719	-	33	-	-	23,651
VP Research Discretionary (10 % of ICR above)			(37)	(540)	(1,192)	(47)	(474)	-	(72)	-	2,362	-	-	-
Adjustments for ICR received by Journal (Contract & ERA)			(14)	(1,334)	(5,504)	(226)	(1,004)	-	(7)	-	-	-	-	(8,088)
Adjustments for Current Practices			(635)	(1,384)	(5,770)	(680)	(1,336)	(186,670)	(466)	(32)	-	6,500	(11,158)	(3,990)
Research Infrastructure Fund Distribution			177	2,549	5,631	223	2,238	-	340	-	-	-	-	-
Research Excellence Fund (from UF)			67	482	1,065	84	423	-	129	-	-	(2,250)	-	-
<b>Revenue Prior to Shared Support Unit Allocations</b>			<b>81,421</b>	<b>134,023</b>	<b>126,047</b>	<b>39,617</b>	<b>133,628</b>	<b>4,017,957</b>	<b>65,927</b>	<b>2,731</b>	<b>6,971</b>	<b>63,660</b>	<b>-</b>	<b>658,043</b>
<b>Shared Support Unit Allocations - via double stepdown</b>														
Occupancy Cost	43,991	(14,666)	(823)	(7,442)	(8,692)	(2,190)	(8,504)	-	(1,601)	(72)	-	-	-	(29,324)
Deferred Maintenance	11,593	(4,402)	(202)	(1,825)	(2,132)	(537)	(2,085)	-	(393)	(18)	-	-	-	(7,191)
Insurance	1,409	(603)	(23)	(208)	(228)	(61)	(238)	-	(45)	(2)	-	-	-	(806)
MIP Occupancy 1	2,752	(332)	-	(1,366)	(721)	(47)	(26)	-	(260)	-	-	-	-	(2,420)
MIP Occupancy 2	178	-	-	(178)	-	-	-	-	-	-	-	-	-	(178)
HR	7,082	(991)	(336)	(1,009)	(3,193)	(402)	(754)	-	(387)	(11)	-	-	-	(6,092)
HR Employee Programs	2,055	(534)	(107)	(234)	(524)	(164)	(337)	-	(155)	(1)	-	-	-	(1,521)
Financial Affairs/Admin/ Inst Support	7,298	(2,339)	(629)	(911)	(1,635)	(442)	(874)	-	(446)	(21)	-	-	-	(4,959)
Supplementary Pension	4,738	(493)	(394)	(727)	(1,519)	(393)	(788)	-	(419)	(4)	-	-	-	(4,245)
Pension Special	17,437	(4,533)	(905)	(1,982)	(4,447)	(1,389)	(2,856)	-	(1,316)	(9)	-	-	-	(12,904)
Presidential/Univ Sec	2,146	(822)	(168)	(243)	(437)	(118)	(233)	-	(119)	(6)	-	-	-	(1,324)
General University Expense	7,455	(3,050)	(559)	(809)	(1,453)	(393)	(776)	-	(396)	(19)	-	-	-	(4,405)
Bond Interest	10,089	(3,798)	(177)	(1,597)	(1,865)	(470)	(1,825)	-	(343)	(16)	-	-	-	(6,291)
UTS/ Technology Fund	18,241	2,204	(2,602)	(4,059)	(4,141)	(1,453)	(5,228)	-	(2,797)	(164)	-	-	-	(20,445)
UTS- ERP	4,517	(169)	(553)	(863)	(881)	(309)	(1,112)	-	(595)	(35)	-	-	-	(4,348)
UA	6,336	1,520	(1,076)	(1,823)	(1,811)	(531)	(1,723)	-	(855)	(37)	-	-	-	(7,855)
Office of the Provost	7,880	(2,945)	(626)	(906)	(1,627)	(440)	(870)	-	(444)	(21)	-	-	-	(4,935)
Research Support	11,819	5,885	(196)	(3,746)	(10,331)	(379)	(2,173)	-	(879)	-	-	-	-	(17,703)
Student Affairs	5,296	6,638	(1,657)	(2,465)	(1,749)	(872)	(3,309)	-	(1,775)	(107)	-	-	-	(11,934)
MIETL	3,517	695	(573)	(853)	(687)	(302)	(1,145)	-	(614)	(37)	-	-	-	(4,212)
Libraries	21,208	8,523	(3,870)	(5,815)	(5,758)	(2,135)	(7,732)	-	(4,174)	(246)	-	-	-	(29,731)
HS Library	4,492	1,830	(823)	(1,236)	(1,224)	(454)	(1,644)	-	(888)	(52)	-	-	-	(6,322)
Registrar	5,750	9,964	(2,056)	(3,151)	(2,169)	(1,143)	(4,594)	-	(2,443)	(159)	-	-	-	(15,714)
SGS	2,460	404	(489)	(618)	(936)	(186)	(397)	-	(237)	-	-	-	-	(2,864)
Museum of Art	623	498	(139)	(216)	(253)	(77)	(278)	-	(149)	(9)	-	-	-	(1,121)
UG Scholarship	5,178	721	(808)	(1,329)	(429)	(449)	(1,860)	-	(960)	(63)	-	-	-	(5,899)
UG Bursaries	3,834	0	(513)	(844)	(359)	(285)	(1,182)	-	(610)	(40)	-	-	-	(3,834)
Grad Scholarship	13,243	649	(2,384)	(3,010)	(4,504)	(907)	(1,933)	-	(1,155)	-	-	-	-	(13,892)
Branding and Marketing	1,006	148	(158)	(267)	(267)	(78)	(253)	-	(125)	(5)	-	-	-	(1,154)
Adjustments for Current Practices - Support Units			-	-	4,559	-	-	-	-	-	(4,559)	-	-	0
<b>Total Shared Support Unit Allocations</b>	<b>233,622</b>	<b>0</b>	<b>(22,845)</b>	<b>(49,734)</b>	<b>(59,414)</b>	<b>(16,606)</b>	<b>(54,729)</b>	<b>-</b>	<b>(24,581)</b>	<b>(1,153)</b>	<b>(4,559)</b>	<b>-</b>	<b>-</b>	<b>(233,622)</b>
<b>Net Revenue</b>			<b>58,576</b>	<b>84,289</b>	<b>66,633</b>	<b>23,011</b>	<b>78,899</b>	<b>4,018</b>	<b>41,346</b>	<b>1,578</b>	<b>2,412</b>	<b>63,660</b>	<b>-</b>	<b>424,421</b>
UF Supplement			-	-	-	3,000	-	-	-	-	-	(3,000)	-	-
UF Supplement 2 - Grants top up			-	-	1,617	-	-	-	-	-	-	(1,617)	-	-
<b>Base Net Projected Budget 2020-21</b>			<b>58,576</b>	<b>84,289</b>	<b>68,250</b>	<b>26,011</b>	<b>78,899</b>	<b>4,018</b>	<b>41,346</b>	<b>1,578</b>	<b>2,412</b>	<b>59,043</b>	<b>-</b>	<b>424,421</b>

McMaster University - New Budget Model - Faculties			University Fund		Prof. Faculties	Other Faculties	VP Research Discretionary Fund			10.00%				
Projected Budget Allocation			Research Infrastructure Fund		8.00%	8.00%								
2021-22					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			64,590	113,924	33,240	19,150	86,512	2,224	49,306	1,944	-			370,890
UG Tuition Adjustment for tuition fee framework			(114)	(643)	176	118	290		166	7				-
Total UG SAG Obligation			(1,023)	(3,593)	(2)	-	-	-	(1)	-	4,619			-
Graduate Tuition			18,534	11,558	12,536	2,314	4,194		2,245	-	-			51,380
Operating Grant			18,233	43,803	83,972	14,075	49,787	2,145	22,476	1,676	-	(8)	-	236,158
Other Income			1,299	2,245	4,387	781	2,238		1,129	89	-	3,755	-	15,924
Gross Revenue			101,519	167,294	134,309	36,438	143,021	4,369	75,320	3,716	4,619	3,748	-	674,353
Undergraduate Cross Faculty Teaching Adjustment			(5,887)	(13,595)	123	9,324	7,073	-	3,457	(496)	-			0
Revenue for Contributions			95,632	153,699	134,432	45,762	150,094	4,369	78,777	3,221	4,619	3,748	-	674,353
Internal International Tax			(1,359)	(1,913)	(48)	(277)	(1,533)	-	(920)	-		6,049	-	-
University Fund Contribution			(7,651)	(12,296)	(10,755)	(3,661)	(12,008)	-	(6,302)	(258)		52,929	-	-
Research Infrastructure Fund Contribution			(2,869)	(4,611)	(1,344)	(458)	(1,501)	-	(788)	(97)		-	11,667	-
Indirect Cost of Research (excluding Royalties & CRC)			374	5,396	11,920	472	4,737	-	719	-	33	-	-	23,651
VP Research Discretionary (10 % of ICR above)			(37)	(540)	(1,192)	(47)	(474)	-	(72)	-	2,362	-	-	-
Adjustments for ICR received by Journal (Contract & ERA)			(14)	(1,334)	(5,504)	(226)	(1,004)	-	(7)	-	-	-	-	(8,088)
Adjustments for Current Practices			-	-	(4,055)	(218)	192	(192)	218	-	-	-	-	(4,055)
Research Infrastructure Fund Distribution			185	2,666	5,888	233	2,340	-	355	-	-		(11,667)	-
Research Excellence Fund (from UF)			67	482	1,065	84	423	-	129	-		(2,250)	-	-
Revenue Prior to Shared Support Unit Allocations			84,329	141,550	130,407	41,664	141,268	4,177	72,109	2,867	7,014	60,476	-	685,860
Shared Support Unit Allocations - via double stepdown														
Occupancy Cost	44,414	(14,775)	(832)	(7,522)	(8,785)	(2,213)	(8,596)	-	(1,618)	(73)	-	-	-	(29,639)
Deferred Maintenance	11,593	(4,394)	(202)	(1,827)	(2,134)	(538)	(2,088)	-	(393)	(18)	-	-	-	(7,199)
Insurance	1,409	(603)	(23)	(208)	(228)	(61)	(238)	-	(45)	(2)	-	-	-	(806)
MIP Occupancy 1	3,316	(400)	-	(1,646)	(869)	(57)	(31)	-	(314)	-	-	-	-	(2,916)
MIP Occupancy 2	178	-	-	(178)	-	-	-	-	-	-	-	-	-	(178)
HR	7,191	(1,009)	(341)	(1,024)	(3,240)	(408)	(765)	-	(393)	(11)	-	-	-	(6,181)
HR Employee Programs	2,055	(534)	(107)	(234)	(524)	(164)	(337)	-	(155)	(1)	-	-	-	(1,521)
Financial Affairs/Admin/ Inst Support	7,850	(2,571)	(669)	(969)	(1,743)	(470)	(929)	-	(475)	(22)	-	-	-	(5,278)
Supplementary Pension	4,738	(472)	(396)	(730)	(1,527)	(395)	(792)	-	(421)	(4)	-	-	-	(4,266)
Pension Special	17,437	(4,533)	(905)	(1,982)	(4,447)	(1,389)	(2,856)	-	(1,316)	(9)	-	-	-	(12,904)
Presidential/Univ Sec	2,177	(833)	(170)	(247)	(444)	(120)	(237)	-	(121)	(6)	-	-	-	(1,344)
General University Expense	7,455	(3,038)	(560)	(811)	(1,459)	(394)	(778)	-	(397)	(19)	-	-	-	(4,417)
Bond Interest	10,089	(3,790)	(177)	(1,599)	(1,867)	(470)	(1,827)	-	(344)	(16)	-	-	-	(6,299)
UTS/ Technology Fund	19,227	2,220	(2,671)	(4,275)	(4,356)	(1,518)	(5,464)	-	(2,988)	(175)	-	-	-	(21,447)
UTS- ERP	4,517	(166)	(542)	(867)	(884)	(308)	(1,109)	-	(606)	(36)	-	-	-	(4,351)
UA	6,550	1,539	(1,134)	(1,899)	(1,783)	(540)	(1,796)	-	(899)	(37)	-	-	-	(8,089)
Office of the Provost	8,106	(3,036)	(643)	(930)	(1,675)	(452)	(893)	-	(456)	(21)	-	-	-	(5,070)
Research Support	14,249	6,012	(225)	(4,287)	(11,823)	(433)	(2,486)	-	(1,006)	-	-	-	-	(20,260)
Student Affairs	6,695	6,712	(1,816)	(2,779)	(1,989)	(975)	(3,697)	-	(2,028)	(122)	-	-	-	(13,407)
MIITL	3,597	704	(571)	(875)	(708)	(307)	(1,163)	-	(638)	(38)	-	-	-	(4,301)
Libraries	21,929	8,603	(3,884)	(5,997)	(5,942)	(2,183)	(7,906)	-	(4,363)	(257)	-	-	-	(30,532)
HS Library	4,780	1,847	(843)	(1,302)	(1,290)	(474)	(1,716)	-	(947)	(56)	-	-	-	(6,627)
Registrar	5,942	10,046	(2,064)	(3,174)	(2,233)	(1,160)	(4,661)	-	(2,531)	(165)	-	-	-	(15,989)
SGS	2,508	408	(458)	(685)	(953)	(186)	(389)	-	(245)	-	-	-	-	(2,916)
Museum of Art	644	503	(139)	(222)	(259)	(79)	(284)	-	(155)	(9)	-	-	-	(1,147)
UG Scholarship	5,418	743	(833)	(1,370)	(466)	(468)	(1,937)	-	(1,021)	(66)	-	-	-	(6,161)
UG Bursaries	3,834	(0)	(507)	(834)	(367)	(285)	(1,179)	-	(621)	(40)	-	-	-	(3,834)
Grad Scholarship	13,243	667	(2,196)	(3,279)	(4,508)	(890)	(1,865)	-	(1,172)	-	-	-	-	(13,910)
Branding and Marketing	3,022	152	(445)	(744)	(701)	(212)	(704)	-	(353)	(15)	-	-	-	(3,174)
Adjustments for Current Practices - Support Units			-	-	4,852	-	-	-	-	-	(4,852)	-	-	(0)
Total Shared Support Unit Allocations			244,162	0	(23,353)	(52,496)	(62,351)	(17,149)	(56,723)	-	(26,020)	(1,217)	(4,852)	-
Net Revenue					60,976	89,054	68,055	24,515	84,545	4,177	46,089	1,649	2,162	441,698
UF Supplement					-	-	1,500	-	-	-	-	(1,500)	-	-
UF Supplement 2 - Grants top up						2,154						(2,154)	-	-
Base Net Projected Budget 2021-22					60,976	89,054	70,209	26,015	84,545	4,177	46,089	1,649	2,162	441,698

McMaster University - New Budget Model - Faculties			University Fund		Prof. Faculties		Other Faculties		VP Research Discretionary Fund		10.00%			
Projected Budget Allocation			Research Infrastructure Fund		8.00%		8.00%							
2022-23					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			68,467	125,343	34,492	21,145	96,092	2,476	54,193	2,201	-			404,408
UG Tuition Adjustment for tuition fee framework			(114)	(643)	176	118	290		166	7				-
Total UG SAG Obligation			(1,033)	(3,619)	(2)	-	-	-	(1)	-	4,655			-
Graduate Tuition			19,423	13,673	12,884	2,591	4,691		2,655	-				55,917
Operating Grant			18,225	43,962	83,597	14,024	49,971	2,234	22,183	1,673	-	(6)	-	235,863
Other Income			1,299	2,245	4,387	781	2,238	-	1,129	89	-	708	-	12,877
Gross Revenue			106,267	180,961	135,535	38,659	153,283	4,710	80,324	3,970	4,655	702	-	709,066
Undergraduate Cross Faculty Teaching Adjustment			(5,874)	(13,988)	131	9,497	7,152	-	3,615	(533)	-			0
Revenue for Contributions			100,394	166,974	135,665	48,155	160,434	4,710	83,939	3,437	4,655	702	-	709,066
Internal International Tax			(1,485)	(2,297)	(73)	(339)	(1,855)	-	(1,086)	-		7,136	-	-
University Fund Contribution			(8,032)	(13,358)	(10,853)	(3,852)	(12,835)	-	(6,715)	(275)		55,920	-	-
Research Infrastructure Fund Contribution			(3,012)	(5,009)	(1,357)	(482)	(1,604)	-	(839)	(103)		-	12,406	-
Indirect Cost of Research (excluding Royalties & CRC)			374	5,396	11,920	472	4,737	-	719	-	33	-	-	23,651
VP Research Discretionary (10 % of ICR above)			(37)	(540)	(1,192)	(47)	(474)	-	(72)	-	2,362	-	-	-
Adjustments for ICR received by Journal (Contract & ERA)			(14)	(1,334)	(5,504)	(226)	(1,004)	-	(7)	-	-	-	-	(8,088)
Adjustments for Current Practices			(588)	(1,336)	(5,735)	(651)	(1,245)	(200)	(446)	(32)	-	-	-	(10,232)
Research Infrastructure Fund Distribution			197	2,834	6,261	248	2,488	-	378	-	-	-	(12,406)	-
Research Excellence Fund (from UF)			67	482	1,065	84	423	-	129	-		(2,250)	-	-
Revenue Prior to Shared Support Unit Allocations			87,864	151,812	130,197	43,363	149,066	4,510	75,998	3,028	7,050	61,508	-	714,396
Shared Support Unit Allocations - via double stepdown														
Occupancy Cost	44,414	(14,775)	(832)	(7,522)	(8,785)	(2,213)	(8,595)	-	(1,618)	(73)	-	-	-	(29,639)
Deferred Maintenance	11,593	(4,394)	(202)	(1,827)	(2,134)	(538)	(2,088)	-	(393)	(18)	-	-	-	(7,199)
Insurance	1,409	(603)	(23)	(208)	(228)	(61)	(238)	-	(45)	(2)	-	-	-	(806)
MIP Occupancy 1	3,316	(400)	-	(1,646)	(869)	(57)	(31)	-	(314)	-	-	-	-	(2,916)
MIP Occupancy 2	178	-	-	(178)	-	-	-	-	-	-	-	-	-	(178)
HR	7,191	(1,009)	(341)	(1,024)	(3,240)	(408)	(765)	-	(393)	(11)	-	-	-	(6,181)
HR Employee Programs	2,055	(534)	(107)	(234)	(524)	(164)	(337)	-	(155)	(1)	-	-	-	(1,521)
Financial Affairs/Admin/ Inst Support	7,850	(2,571)	(669)	(969)	(1,743)	(470)	(929)	-	(475)	(22)	-	-	-	(5,278)
Supplementary Pension	4,738	(472)	(396)	(730)	(1,527)	(395)	(792)	-	(421)	(4)	-	-	-	(4,266)
Pension Special	17,437	(4,533)	(905)	(1,982)	(4,447)	(1,389)	(2,856)	-	(1,316)	(9)	-	-	-	(12,904)
Presidential/Univ Sec	2,177	(833)	(170)	(247)	(444)	(120)	(237)	-	(121)	(6)	-	-	-	(1,344)
General University Expense	7,455	(3,038)	(560)	(811)	(1,459)	(394)	(778)	-	(397)	(19)	-	-	-	(4,417)
Bond Interest	10,089	(3,790)	(177)	(1,599)	(1,867)	(470)	(1,827)	-	(344)	(16)	-	-	-	(6,299)
UTS/ Technology Fund	19,727	2,219	(2,705)	(4,397)	(4,420)	(1,555)	(5,619)	-	(3,065)	(185)	-	-	-	(21,946)
UTS- ERP	4,517	(162)	(537)	(873)	(877)	(309)	(1,115)	-	(608)	(37)	-	-	-	(4,355)
UA	6,550	1,539	(1,142)	(1,931)	(1,702)	(540)	(1,816)	-	(921)	(38)	-	-	-	(8,089)
Office of the Provost	8,106	(3,036)	(643)	(930)	(1,675)	(452)	(893)	-	(456)	(21)	-	-	-	(5,070)
Research Support	14,249	6,011	(225)	(4,287)	(11,823)	(433)	(2,486)	-	(1,006)	-	-	-	-	(20,260)
Student Affairs	6,740	6,711	(1,798)	(2,801)	(1,993)	(978)	(3,719)	-	(2,035)	(126)	-	-	-	(13,451)
MIITL	3,597	703	(564)	(879)	(704)	(307)	(1,168)	-	(639)	(40)	-	-	-	(4,300)
Libraries	22,545	8,602	(3,920)	(6,154)	(6,013)	(2,228)	(8,103)	-	(4,460)	(270)	-	-	-	(31,147)
HS Library	4,930	1,847	(853)	(1,339)	(1,308)	(485)	(1,763)	-	(970)	(59)	-	-	-	(6,777)
Registrar	5,942	10,046	(2,042)	(3,179)	(2,225)	(1,172)	(4,677)	-	(2,523)	(171)	-	-	-	(15,988)
SGS	2,508	408	(448)	(699)	(926)	(173)	(407)	-	(264)	-	-	-	-	(2,916)
Museum of Art	644	504	(138)	(224)	(257)	(79)	(286)	-	(156)	(9)	-	-	-	(1,148)
UG Scholarship	5,418	743	(822)	(1,369)	(473)	(472)	(1,941)	-	(1,015)	(69)	-	-	-	(6,161)
UG Bursaries	3,834	-	(500)	(834)	(370)	(287)	(1,182)	-	(618)	(42)	-	-	-	(3,834)
Grad Scholarship	13,243	667	(2,144)	(3,347)	(4,378)	(829)	(1,948)	-	(1,265)	-	-	-	-	(13,910)
Branding and Marketing	3,022	152	(448)	(757)	(669)	(212)	(712)	-	(361)	(15)	-	-	-	(3,174)
Adjustments for Current Practices - Support Units					4,852			-			1,337	-	-	6,189
Total Shared Support Unit Allocations	245,473	0	(23,309)	(52,975)	(62,226)	(17,190)	(57,307)	-	(26,354)	(1,261)	1,337	-	-	(239,284)
Net Revenue			64,556	98,837	67,972	26,173	91,759	4,510	49,644	1,767	8,387	61,508	-	475,112
UF Supplement			-	-	-	-	-	-	-	-	-	-	-	-
UF Supplement 2 - Grants top up					2,674							(2,674)		-
Base Net Projected Budget 2022-23			64,556	98,837	70,646	26,173	91,759	4,510	49,644	1,767	8,387	58,834	-	475,112

McMaster University - New Budget Model - Faculties			University Fund		Prof. Faculties		Other Faculties		VP Research Discretionary Fund			10.00%			
Projected Budget Allocation			Research Infrastructure Fund		8.00%		8.00%								
2023-24					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			73,770	136,468	35,362	23,313	104,765	2,771	59,550	2,519	-			438,518	
UG Tuition Adjustment for tuition fee framework			(114)	(643)	176	118	290		166	7				-	
Total UG SAG Obligation			(1,041)	(3,628)	(2)	-	-	-	(1)	-	4,672			-	
Graduate Tuition			20,174	14,397	13,117	2,830	5,122		2,881	-	-			58,521	
Operating Grant			18,155	43,859	83,616	13,944	49,891	2,346	22,109	1,671	-	(5)	-	235,585	
Other Income			1,299	2,245	4,387	781	2,238	-	1,129	89	-	4,506	-	16,675	
Gross Revenue			112,244	192,698	136,655	40,986	162,307	5,117	85,833	4,286	4,672	4,501	-	749,300	
Undergraduate Cross Faculty Teaching Adjustment			(6,009)	(14,211)	107	9,613	7,367	-	3,693	(561)	-			(0)	
Revenue for Contributions			106,235	178,487	136,763	50,600	169,674	5,117	89,526	3,725	4,672	4,501	-	749,300	
Internal International Tax			(1,664)	(2,682)	(94)	(407)	(2,169)	-	(1,270)	-		8,286	-	-	
University Fund Contribution			(8,499)	(14,279)	(10,941)	(4,048)	(13,574)	-	(7,162)	(298)		58,801	-	-	
Research Infrastructure Fund Contribution			(3,187)	(5,355)	(1,368)	(506)	(1,697)	-	(895)	(112)		-	13,119	-	
Indirect Cost of Research (excluding Royalties & CRC)			374	5,396	11,920	472	4,737	-	719	-	33	-	-	23,651	
VP Research Discretionary (10 % of ICR above)			(37)	(540)	(1,192)	(47)	(474)	-	(72)	-	2,362	-	-	-	
Adjustments for ICR received by Journal (Contract & ERA)			(14)	(1,334)	(5,504)	(226)	(1,004)	-	(7)	-	-	-	-	(8,088)	
Adjustments for Current Practices			(1,235)	(2,831)	(7,608)	(1,136)	(2,856)	(208)	(1,191)	(69)	-	-	-	(17,135)	
Research Infrastructure Fund Distribution			208	2,997	6,621	262	2,631	-	399	-	-		(13,119)	-	
Research Excellence Fund (from UF)			67	482	1,065	84	423	-	129	-		(2,250)	-	-	
Revenue Prior to Shared Support Unit Allocations			92,249	160,343	129,660	45,047	155,693	4,908	80,176	3,246	7,067	69,338	-	747,728	
Shared Support Unit Allocations - via double stepdown															
Occupancy Cost	44,414	(14,783)	(831)	(7,520)	(8,783)	(2,213)	(8,593)	-	(1,618)	(73)	-	-	-	(29,631)	
Deferred Maintenance	11,593	(4,394)	(202)	(1,827)	(2,134)	(538)	(2,088)	-	(393)	(18)	-	-	-	(7,199)	
Insurance	1,409	(603)	(23)	(208)	(228)	(61)	(238)	-	(45)	(2)	-	-	-	(806)	
MIP Occupancy 1	3,316	(400)	-	(1,646)	(869)	(57)	(31)	-	(314)	-	-	-	-	(2,916)	
MIP Occupancy 2	178	-	-	(178)	-	-	-	-	-	-	-	-	-	(178)	
HR	7,191	(1,012)	(341)	(1,024)	(3,238)	(408)	(765)	-	(393)	(11)	-	-	-	(6,178)	
HR Employee Programs	2,055	(534)	(107)	(234)	(524)	(164)	(337)	-	(155)	(1)	-	-	-	(1,521)	
Financial Affairs/Admin/ Inst Support	7,850	(2,574)	(669)	(968)	(1,743)	(470)	(929)	-	(474)	(22)	-	-	-	(5,276)	
Supplementary Pension	4,738	(473)	(396)	(730)	(1,527)	(395)	(792)	-	(421)	(4)	-	-	-	(4,265)	
Pension Special	17,437	(4,533)	(905)	(1,982)	(4,447)	(1,389)	(2,856)	-	(1,316)	(9)	-	-	-	(12,904)	
Presidential/Univ Sec	2,177	(834)	(170)	(247)	(444)	(120)	(237)	-	(121)	(6)	-	-	-	(1,343)	
General University Expense	7,455	(3,038)	(560)	(811)	(1,459)	(394)	(778)	-	(397)	(19)	-	-	-	(4,417)	
Bond Interest	10,089	(3,790)	(177)	(1,599)	(1,867)	(470)	(1,827)	-	(344)	(16)	-	-	-	(6,299)	
UTS/ Technology Fund	19,727	2,226	(2,695)	(4,409)	(4,391)	(1,565)	(5,625)	-	(3,076)	(191)	-	-	-	(21,953)	
UTS- ERP	3,215	(114)	(381)	(623)	(620)	(221)	(795)	-	(435)	(27)	-	-	-	(3,101)	
UA	6,550	1,535	(1,138)	(1,958)	(1,639)	(540)	(1,830)	-	(942)	(38)	-	-	-	(8,085)	
Office of the Provost	8,106	(3,037)	(643)	(930)	(1,674)	(452)	(892)	-	(456)	(21)	-	-	-	(5,068)	
Research Support	14,249	6,003	(224)	(4,285)	(11,818)	(433)	(2,485)	-	(1,006)	-	-	-	-	(20,252)	
Student Affairs	6,785	6,700	(1,792)	(2,813)	(1,991)	(987)	(3,727)	-	(2,044)	(130)	-	-	-	(13,485)	
MIETL	3,597	702	(561)	(881)	(700)	(309)	(1,167)	-	(640)	(41)	-	-	-	(4,299)	
Libraries	22,945	8,596	(3,951)	(6,248)	(6,050)	(2,270)	(8,210)	-	(4,529)	(282)	-	-	-	(31,541)	
HS Library	5,080	1,846	(868)	(1,372)	(1,328)	(499)	(1,803)	-	(994)	(62)	-	-	-	(6,926)	
Registrar	5,942	10,039	(2,040)	(3,185)	(2,213)	(1,187)	(4,653)	-	(2,528)	(176)	-	-	-	(15,982)	
SGS	2,508	408	(434)	(699)	(916)	(167)	(434)	-	(265)	-	-	-	-	(2,916)	
Museum of Art	644	504	(137)	(224)	(255)	(80)	(286)	-	(156)	(10)	-	-	-	(1,148)	
UG Scholarship	5,418	743	(820)	(1,370)	(477)	(477)	(1,931)	-	(1,016)	(71)	-	-	-	(6,161)	
UG Bursaries	3,834	-	(499)	(834)	(371)	(291)	(1,176)	-	(619)	(43)	-	-	-	(3,834)	
Grad Scholarship	13,243	667	(2,079)	(3,345)	(4,336)	(799)	(2,080)	-	(1,272)	-	-	-	-	(13,910)	
Branding and Marketing	3,022	151	(446)	(768)	(645)	(212)	(718)	-	(369)	(15)	-	-	-	(3,173)	
Adjustments for Current Practices - Support Units					4,852						8,242		-	13,094	
Total Shared Support Unit Allocations	244,766	0	(23,088)	(52,917)	(61,836)	(17,165)	(57,284)	-	(26,337)	(1,286)	8,242	-	-	(231,672)	
Net Revenue			69,160	107,426	67,824	27,882	98,409	4,908	53,839	1,960	15,309	69,338	-	516,056	
UF Supplement			-	-	-	-	-	-	-	-	-	-	-	-	
UF Supplement 2 - Grants top up					2,947							(2,947)	-	-	
Base Net Projected Budget 2023-24			69,160	107,426	70,771	27,882	98,409	4,908	53,839	1,960	15,309	66,391	-	516,056	



## APPENDIX 3 – OPERATING FUND UNIT LEVEL TABLES

Table 20: Operating Fund 2020/21 Projection by Unit

(5 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			
<b>1. Faculties</b>															
Business	60,633	612	1	4,078	65,325	31,534	7,112	38,646	1,054	-	34,240	35,293	73,939	(8,615)	
Engineering	83,655	1,100	1,488	700	86,942	53,827	12,670	66,496	2,153	-	39,603	41,756	108,253	(21,310)	
Health Sciences	69,472	1,597	6,623	34,345	112,036	88,074	21,798	109,871	1,494	1	5,178	6,674	116,545	(4,509)	
Humanities	26,116	1,875	264	12,643	40,897	28,183	7,061	35,243	329	13	1,642	1,984	37,227	3,670	
Science	78,620	839	474	1,609	81,542	52,210	14,113	66,323	134	-	21,277	21,411	87,734	(6,192)	
Medical Radiation - Mohawk share	4,018	-	-	-	4,018	-	-	-	-	-	4,019	4,019	4,019	(1)	
Social Sciences	41,626	1,042	51	813	43,531	29,194	7,632	36,826	320	-	2,448	2,768	39,594	3,937	
Arts & Science	1,652	57	-	4	1,713	1,833	134	1,967	7	-	(284)	(277)	1,690	22	
Sub-total	365,792	7,121	8,900	54,190	436,004	284,854	70,520	355,373	5,491	14	108,122	113,627	469,001	(32,997)	
<b>2. Academic Priorities</b>															
University Fund	45,090	(7,491)	-	20	37,619	210	-	210	-	-	37,908	37,908	38,118	(499)	
Revenue Projection Contingency	5,232	-	-	-	5,232	-	-	-	-	-	-	-	-	5,232	
Ongoing Priorities Contingency	(400)	-	-	-	(400)	1,898	-	1,898	-	-	(1,912)	(1,912)	(14)	(386)	
One-time Priorities Contingency	(7,775)	-	-	-	(7,775)	-	-	-	-	-	-	-	-	(7,775)	
Sub-total	42,147	(7,491)	-	20	34,676	2,108	-	2,108	-	-	35,995	35,995	38,103	(3,428)	
TOTAL ACADEMIC	407,939	(370)	8,900	54,210	470,880	286,962	70,520	357,481	5,491	14	144,118	149,623	507,104	(36,424)	
<b>3. Academic Support</b>															
Provost's Office	7,771	-	-	(45)	7,726	6,443	1,350	7,792	33	-	1,928	1,961	9,754	(2,027)	
Museum of Art	623	-	-	236	859	779	242	1,021	-	-	(191)	(191)	830	29	
MacPherson Institute	3,517	-	-	150	3,667	3,418	840	4,258	-	-	(365)	(365)	3,893	(226)	
University Library	21,788	-	-	254	22,042	6,870	2,058	8,928	3	11,676	1,562	13,241	22,168	(127)	
Health Sciences Library	4,507	120	30	33	4,690	1,680	455	2,135	-	3,426	(922)	2,504	4,639	51	
Registrar	5,572	-	-	2,434	8,006	6,129	1,916	8,045	-	-	104	104	8,148	(142)	
Sub-total	43,778	120	30	3,061	46,989	25,319	6,860	32,180	36	15,101	2,116	17,253	49,432	(2,443)	
<b>4. Research Support</b>															
Research	10,830	250	2,957	10,653	24,690	12,998	3,855	16,853	95	1	7,674	7,770	24,623	67	
VP Research Discretionary Fund	2,463	-	-	(0)	2,463	-	-	-	-	-	597	597	597	1,866	
Research Loans	-	-	-	-	-	-	-	-	-	-	(89)	(89)	(89)	89	
Sub-total	13,293	250	2,957	10,653	27,153	12,998	3,855	16,853	95	1	8,183	8,278	25,311	2,022	
<b>5. Student Support</b>															
Graduate Scholarships	13,243	-	-	-	13,243	600	-	600	12,613	-	(0)	12,613	13,213	30	
School of Graduate Studies	2,810	-	-	58	2,868	1,917	533	2,450	55	-	468	523	2,973	(105)	
Student Affairs	5,846	-	-	16,961	22,807	10,986	3,142	14,127	477	-	10,404	10,881	25,008	(2,202)	
DBAC Building Financing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DBAC Deferred Maintenance	-	-	-	-	-	-	-	-	-	-	(160)	(160)	(160)	160	
Undergraduate Scholarships	15,355	-	-	310	15,665	1,877	-	1,877	13,769	-	390	14,159	16,037	(371)	
Sub-total	37,254	-	-	17,329	54,583	15,381	3,674	19,055	26,914	-	11,102	38,016	57,071	(2,488)	
<b>6. Facilities Support</b>															
Facilities Services	20,537	-	-	1,109	21,646	12,296	3,580	15,876	-	-	5,645	5,645	21,521	125	
HSC Maintenance	4,002	-	-	40	4,042	-	-	-	-	-	4,127	4,127	4,127	(85)	
Utilities	23,911	-	-	1,824	25,735	1,576	563	2,139	-	-	22,394	22,394	24,533	1,202	
Security	2,049	-	-	25	2,074	2,102	450	2,552	-	-	(292)	(292)	2,259	(185)	
Deferred Maintenance	11,930	-	-	-	11,930	-	-	-	-	-	11,930	11,930	11,930	0	
Bond Interest	10,089	-	-	-	10,089	-	-	-	-	-	10,088	10,088	10,088	1	
Renovation contingency	974	-	-	-	974	-	-	-	-	-	974	974	974	0	
Sub-total	73,492	-	-	2,999	76,491	15,974	4,592	20,566	-	-	54,866	54,866	75,433	1,058	
<b>7. Institutional Support</b>															
Administration	17,271	-	-	1,784	19,055	12,440	3,659	16,099	-	-	3,740	3,740	19,839	(784)	
UTS Asset Management	1,500	-	-	-	1,500	-	-	-	-	-	1,433	1,433	1,433	67	
UTS/Technology Fund	19,386	-	-	97	19,483	9,593	2,797	12,389	-	-	9,962	9,962	22,352	(2,868)	
University Secretariat	977	-	-	56	1,033	795	234	1,029	-	-	47	47	1,076	(44)	
President's Office	1,169	-	-	-	1,169	423	122	545	-	-	2,621	2,621	3,166	(1,997)	
University Advancement	5,760	-	-	24	5,784	6,958	1,904	8,863	-	-	(3,698)	(3,698)	5,164	620	
Legal	3,971	-	-	-	3,971	742	166	909	-	-	4,519	4,519	5,428	(1,457)	
General University	7,450	-	-	2,135	9,585	524	36	561	-	-	7,699	7,699	8,260	1,326	
Sub-total	57,484	-	-	4,096	61,580	31,475	8,919	40,394	-	-	26,324	26,324	66,718	(5,137)	
<b>8. Institutional Priority allocations</b>															
Technology Renewal	4,517	-	-	-	4,517	-	-	-	-	-	-	-	-	4,517	
Marketing & Branding	3,294	-	-	-	3,294	793	190	984	-	-	3,875	3,875	4,859	(1,565)	
Pension	22,175	-	-	-	22,175	-	22,175	22,175	-	-	-	-	-	22,175	
President's Strategic Support Fund	3,000	-	-	-	3,000	-	-	-	-	-	(79)	(79)	(79)	3,079	
Sub-total	32,986	-	-	-	32,986	793	22,365	23,159	-	-	3,797	3,797	26,955	6,031	
<b>Surplus/(Deficit)</b>															
Under/(over)allocated	666,226	0	11,887	92,349	770,462	388,902	120,786	509,688	32,536	15,116	250,504	298,156	807,845	(37,383)	
Total Surplus/(Deficit)	666,226	0	11,887	90,787	768,900	388,902	120,786	509,688	32,536	15,116	248,943	296,595	806,283	(37,383)	

Table 21: Operating Fund 2021/22 Budget by Unit

(S 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		
<b>1. Faculties</b>														
Business	60,976	-	-	4,574	65,550	33,341	7,677	41,018	1,557	-	22,234	23,792	64,810	740
Engineering	89,054	466	1,578	1,086	92,184	58,690	13,752	72,442	2,114	-	18,872	20,986	93,428	(1,245)
Health Sciences	70,209	765	6,406	36,814	114,193	88,548	22,667	111,214	1,888	-	9,118	11,005	122,220	(8,026)
Humanities	26,015	1,355	200	9,269	36,839	28,566	7,040	35,606	452	15	2,161	2,628	38,234	(1,395)
Science	84,545	460	447	2,125	87,577	54,568	14,749	69,316	279	-	15,878	16,157	85,473	2,103
Medical Radiation - Mohawk share	4,177	-	-	-	4,177	-	-	-	-	-	4,177	4,177	4,177	-
Social Sciences	46,089	615	50	738	47,492	31,661	8,316	39,976	458	-	4,140	4,599	44,575	2,917
Arts & Science	1,649	-	-	-	1,649	1,658	109	1,767	7	-	(187)	(180)	1,587	62
Sub-total	<b>382,714</b>	<b>3,660</b>	<b>8,681</b>	<b>54,606</b>	<b>449,661</b>	<b>297,031</b>	<b>74,310</b>	<b>371,341</b>	<b>6,756</b>	<b>15</b>	<b>76,393</b>	<b>83,164</b>	<b>454,504</b>	<b>(4,843)</b>
<b>2. Academic Priorities</b>														
University Fund	46,823	(3,660)	-	-	43,163	5,050	-	5,050	-	-	40,761	40,761	45,811	(2,648)
Revenue Projection Contingency	582	-	-	-	582	-	-	-	-	-	-	-	-	582
Ongoing Priorities Contingency	33	-	-	-	33	(8,022)	-	(8,022)	-	-	(1,978)	(1,978)	(10,000)	10,033
One-time Priorities Contingency	153	-	-	-	153	-	-	-	-	-	-	-	-	153
Sub-total	<b>47,591</b>	<b>(3,660)</b>	<b>-</b>	<b>-</b>	<b>43,931</b>	<b>(2,972)</b>	<b>-</b>	<b>(2,972)</b>	<b>-</b>	<b>-</b>	<b>38,783</b>	<b>38,783</b>	<b>35,811</b>	<b>8,120</b>
<b>TOTAL ACADEMIC</b>	<b>430,305</b>	<b>-</b>	<b>8,681</b>	<b>54,606</b>	<b>493,592</b>	<b>294,058</b>	<b>74,310</b>	<b>368,368</b>	<b>6,756</b>	<b>15</b>	<b>115,176</b>	<b>121,947</b>	<b>490,315</b>	<b>3,277</b>
<b>3. Academic Support</b>														
Provost's Office	7,902	-	-	880	8,782	6,563	1,347	7,910	33	-	2,893	2,926	10,836	(2,054)
Museum of Art	644	-	-	198	842	777	228	1,005	-	-	(162)	(162)	842	0
MacPherson Institute	3,597	-	-	150	3,747	2,934	770	3,704	-	-	827	827	4,531	(784)
University Library	22,652	-	-	88	22,740	7,853	2,162	10,015	19	11,783	1,512	13,314	23,329	(589)
Health Sciences Library	4,795	-	30	33	4,858	1,840	503	2,343	-	3,395	(819)	2,575	4,918	(61)
Registrar	5,760	-	-	2,551	8,311	6,259	1,834	8,093	-	-	553	553	8,646	(336)
Sub-total	<b>45,350</b>	<b>-</b>	<b>30</b>	<b>3,899</b>	<b>49,279</b>	<b>26,227</b>	<b>6,843</b>	<b>33,070</b>	<b>52</b>	<b>15,178</b>	<b>4,803</b>	<b>20,032</b>	<b>53,103</b>	<b>(3,823)</b>
<b>4. Research Support</b>														
Research	12,208	-	3,602	11,598	27,408	14,393	4,013	18,405	84	1	8,602	8,686	27,092	317
VP Research Discretionary Fund	2,362	-	-	-	2,362	-	-	-	-	-	1,480	1,480	1,480	882
Research Loans	-	-	-	-	-	-	-	-	-	-	(89)	(89)	(89)	89
Sub-total	<b>14,570</b>	<b>-</b>	<b>3,602</b>	<b>11,598</b>	<b>29,770</b>	<b>14,393</b>	<b>4,013</b>	<b>18,405</b>	<b>84</b>	<b>1</b>	<b>9,993</b>	<b>10,078</b>	<b>28,483</b>	<b>1,287</b>
<b>5. Student Support</b>														
Graduate Scholarships	13,243	-	-	-	13,243	600	-	600	12,613	-	-	12,613	13,213	30
School of Graduate Studies	2,858	-	-	58	2,916	1,979	522	2,501	55	-	477	532	3,032	(116)
Student Affairs	6,695	-	-	25,522	32,217	15,041	3,287	18,328	527	-	12,174	12,701	31,029	1,188
DBAC Building Financing	-	-	-	-	-	-	-	-	-	-	1,211	1,211	1,211	(1,211)
DBAC Deferred Maintenance	-	-	-	-	-	-	-	-	-	-	(400)	(400)	(400)	400
Undergraduate Scholarships	13,871	-	-	277	14,148	2,125	-	2,125	11,533	-	271	11,803	13,928	220
Sub-total	<b>36,667</b>	<b>-</b>	<b>-</b>	<b>25,857</b>	<b>62,524</b>	<b>19,745</b>	<b>3,809</b>	<b>23,554</b>	<b>24,728</b>	<b>-</b>	<b>13,732</b>	<b>38,460</b>	<b>62,014</b>	<b>511</b>
<b>6. Facilities Support</b>														
Facilities Services	20,770	-	-	1,389	22,159	12,750	3,542	16,292	-	-	5,674	5,674	21,966	193
HSC Maintenance	4,002	-	-	40	4,042	-	-	-	-	-	4,154	4,154	4,154	(112)
Utilities	23,937	-	-	2,090	26,027	1,549	564	2,113	-	-	25,605	25,605	27,719	(1,692)
Security	2,039	-	-	25	2,064	2,224	469	2,693	-	-	(305)	(305)	2,388	(324)
Deferred Maintenance	11,930	-	-	-	11,930	-	-	-	-	-	11,930	11,930	11,930	-
Bond Interest	10,089	-	-	-	10,089	-	-	-	-	-	10,089	10,089	10,089	-
Renovation contingency	974	-	-	-	974	-	-	-	-	-	974	974	974	0
Sub-total	<b>73,741</b>	<b>-</b>	<b>-</b>	<b>3,544</b>	<b>77,285</b>	<b>16,523</b>	<b>4,575</b>	<b>21,098</b>	<b>-</b>	<b>-</b>	<b>58,122</b>	<b>58,122</b>	<b>79,220</b>	<b>(1,936)</b>
<b>7. Institutional Support</b>														
Administration	16,670	-	-	1,835	18,505	13,194	3,702	16,896	-	-	3,228	3,228	20,124	(1,619)
UTS Asset Management	1,500	-	-	-	1,500	-	-	-	-	-	2,339	2,339	2,339	(839)
UTS/Technology Fund	18,135	-	-	80	18,215	10,022	2,733	12,755	-	-	8,081	8,081	20,835	(2,620)
University Secretariat	994	-	-	56	1,050	870	250	1,120	-	-	143	143	1,263	(213)
President's Office	1,183	-	-	-	1,183	399	113	511	-	-	634	634	1,145	38
University Advancement	5,963	-	-	23	5,986	8,456	2,265	10,721	-	-	(3,310)	(3,310)	7,411	(1,425)
Legal	4,016	-	-	-	4,016	725	173	898	-	-	4,519	4,519	5,417	(1,401)
General University	5,635	-	-	2,170	7,805	762	37	799	-	-	7,581	7,581	8,380	(575)
Sub-total	<b>54,096</b>	<b>-</b>	<b>-</b>	<b>4,163</b>	<b>58,259</b>	<b>34,427</b>	<b>9,273</b>	<b>43,700</b>	<b>-</b>	<b>-</b>	<b>23,214</b>	<b>23,214</b>	<b>66,914</b>	<b>(8,655)</b>
<b>8. Institutional Priority allocations</b>														
Technology Renewal	4,517	-	-	-	4,517	-	-	-	-	-	-	-	-	4,517
Marketing & Branding	5,022	-	-	-	5,022	808	190	998	-	-	4,024	4,024	5,022	0
Pension	22,175	-	-	-	22,175	-	22,175	22,175	-	-	-	-	22,175	0
President's Strategic Support Fund	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total	<b>31,714</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>31,714</b>	<b>808</b>	<b>22,365</b>	<b>23,173</b>	<b>-</b>	<b>-</b>	<b>4,024</b>	<b>4,024</b>	<b>27,197</b>	<b>4,517</b>
<b>Surplus/(Deficit)</b>	<b>686,443</b>	<b>-</b>	<b>12,314</b>	<b>103,668</b>	<b>802,424</b>	<b>406,181</b>	<b>125,188</b>	<b>531,369</b>	<b>31,619</b>	<b>15,193</b>	<b>229,064</b>	<b>275,877</b>	<b>807,246</b>	<b>(4,822)</b>
<i>Under/(over)allocated</i>	0	0	-	(2,993)	(2,993)	-	-	-	-	-	(2,993)	(2,993)	(2,993)	0
<b>Total Surplus/(Deficit)</b>	<b>686,443</b>	<b>0</b>	<b>12,314</b>	<b>100,674</b>	<b>799,431</b>	<b>406,181</b>	<b>125,188</b>	<b>531,369</b>	<b>31,619</b>	<b>15,193</b>	<b>226,071</b>	<b>272,884</b>	<b>804,253</b>	<b>(4,822)</b>

Table 22: Operating Fund 2022/23 Plan by Unit

(S 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		
<b>1. Facilities</b>														
Business	64,556	-	-	4,634	69,190	35,571	8,330	43,900	1,557	-	21,157	22,715	66,615	2,574
Engineering	98,837	-	1,568	1,047	101,452	62,965	14,947	77,912	1,924	-	22,328	24,252	102,164	(712)
Health Sciences	70,646	65	6,228	36,562	113,501	88,768	23,235	112,003	1,843	(0)	7,858	9,700	121,704	(8,202)
Humanities	26,173	1,240	200	10,875	38,488	29,079	7,172	36,251	454	15	4,949	5,418	41,669	(3,180)
Science	91,759	442	476	2,042	94,719	57,869	15,643	73,512	211	-	19,733	19,944	93,456	1,263
Medical Radiation - Mohawk share	4,510	-	-	-	4,510	-	-	-	-	-	4,510	4,510	4,510	-
Social Sciences	49,644	615	50	699	51,008	32,867	8,729	41,596	500	-	8,366	8,866	50,462	546
Arts & Science	1,767	57	-	1,824	-	1,673	95	1,768	1	-	33	34	1,802	22
Sub-total	<b>407,892</b>	<b>2,419</b>	<b>8,522</b>	<b>55,859</b>	<b>474,692</b>	<b>308,792</b>	<b>78,151</b>	<b>386,942</b>	<b>6,490</b>	<b>15</b>	<b>88,934</b>	<b>95,439</b>	<b>482,382</b>	<b>(7,689)</b>
<b>2. Academic Priorities</b>														
University Fund	48,834	(2,419)	-	-	46,415	4,500	-	4,500	-	-	41,915	41,915	46,415	0
Revenue Projection Contingency	582	-	-	-	582	-	-	-	-	-	-	-	582	582
Ongoing Priorities Contingency	6,222	-	-	-	6,222	(3,022)	-	(3,022)	-	-	(1,978)	(1,978)	(5,000)	11,222
One-time Priorities Contingency	7,303	-	-	-	7,303	-	-	-	-	-	-	-	-	7,303
Sub-total	<b>62,941</b>	<b>(2,419)</b>	<b>-</b>	<b>-</b>	<b>60,522</b>	<b>1,478</b>	<b>-</b>	<b>1,478</b>	<b>-</b>	<b>-</b>	<b>39,937</b>	<b>39,937</b>	<b>41,415</b>	<b>19,107</b>
<b>TOTAL ACADEMIC</b>	<b>470,833</b>	<b>-</b>	<b>8,522</b>	<b>55,859</b>	<b>535,214</b>	<b>310,270</b>	<b>78,151</b>	<b>388,420</b>	<b>6,490</b>	<b>15</b>	<b>128,872</b>	<b>135,376</b>	<b>523,797</b>	<b>11,418</b>
<b>3. Academic Support</b>														
Provost's Office	7,902	-	-	913	8,815	6,141	1,278	7,419	33	-	3,013	3,046	10,465	(1,650)
Museum of Art	644	-	-	202	846	800	237	1,038	-	-	(192)	(192)	846	(0)
MacPherson Institute	3,597	-	-	150	3,747	2,817	764	3,581	-	-	769	769	4,350	(603)
University Library	23,277	-	-	88	23,365	7,969	2,202	10,171	19	12,215	1,806	14,040	24,211	(846)
Health Sciences Library	4,930	-	15	33	4,978	1,895	514	2,409	-	3,450	(668)	2,782	5,192	(214)
Registrar	5,760	-	-	2,977	8,737	6,696	1,900	8,596	-	-	1,899	1,899	10,495	(1,758)
Sub-total	<b>46,110</b>	<b>-</b>	<b>15</b>	<b>4,362</b>	<b>50,487</b>	<b>26,318</b>	<b>6,896</b>	<b>33,214</b>	<b>52</b>	<b>15,665</b>	<b>6,627</b>	<b>22,345</b>	<b>55,558</b>	<b>(5,071)</b>
<b>4. Research Support</b>														
Research	12,208	-	3,602	11,934	27,745	14,421	4,028	18,449	-	1	8,069	8,070	26,518	1,226
VP Research Discretionary Fund	2,362	-	-	-	2,362	-	-	-	-	-	3,910	3,910	3,910	(1,548)
Research Loans	-	-	-	-	-	-	-	-	-	-	(39)	(39)	(39)	39
Sub-total	<b>14,570</b>	<b>-</b>	<b>3,602</b>	<b>11,934</b>	<b>30,107</b>	<b>14,421</b>	<b>4,028</b>	<b>18,449</b>	<b>-</b>	<b>1</b>	<b>11,940</b>	<b>11,940</b>	<b>30,389</b>	<b>(283)</b>
<b>5. Student Support</b>														
Graduate Scholarships	13,243	-	-	-	13,243	600	-	600	12,613	-	-	12,613	13,213	30
School of Graduate Studies	2,758	-	-	58	2,816	1,865	487	2,352	55	-	501	556	2,908	(92)
Student Affairs	6,740	-	-	26,492	33,232	15,557	3,419	18,976	527	-	13,394	13,921	32,897	335
DBAC Building Financing	-	-	-	-	-	-	-	-	-	-	704	704	704	(704)
DBAC Deferred Maintenance	-	-	-	-	-	-	-	-	-	-	(520)	(520)	(520)	520
Undergraduate Scholarships	13,907	-	-	277	14,184	2,125	-	2,125	11,549	-	271	11,819	13,944	240
Sub-total	<b>36,648</b>	<b>-</b>	<b>-</b>	<b>26,827</b>	<b>63,475</b>	<b>20,147</b>	<b>3,905</b>	<b>24,053</b>	<b>24,744</b>	<b>-</b>	<b>14,350</b>	<b>39,094</b>	<b>63,147</b>	<b>328</b>
<b>6. Facilities Support</b>														
Facilities Services	17,013	-	-	2,459	19,472	13,011	3,602	16,613	-	-	2,788	2,788	19,401	72
HSC Maintenance	4,002	-	-	40	4,042	-	-	-	-	-	4,154	4,154	4,154	(112)
Utilities	23,937	-	-	2,178	26,115	1,567	576	2,142	-	-	27,100	27,100	29,242	(3,127)
Security	2,039	-	-	25	2,064	2,262	485	2,746	-	-	(315)	(315)	2,431	(367)
Deferred Maintenance	11,930	-	-	-	11,930	-	-	-	-	-	11,930	11,930	11,930	-
Bond Interest	10,089	-	-	-	10,089	-	-	-	-	-	10,089	10,089	10,089	-
Renovation contingency	974	-	-	-	974	-	-	-	-	-	974	974	974	0
Sub-total	<b>69,984</b>	<b>-</b>	<b>-</b>	<b>4,702</b>	<b>74,686</b>	<b>16,839</b>	<b>4,662</b>	<b>21,501</b>	<b>-</b>	<b>-</b>	<b>56,720</b>	<b>56,720</b>	<b>78,221</b>	<b>(3,535)</b>
<b>7. Institutional Support</b>														
Administration	16,670	-	-	1,883	18,553	13,097	3,734	16,831	-	-	2,830	2,830	19,660	(1,107)
UTS Asset Management	1,500	-	-	-	1,500	-	-	-	-	-	1,663	1,663	1,663	(163)
UTS/Technology Fund	18,135	-	-	80	18,215	10,074	2,777	12,851	-	-	7,557	7,557	20,408	(2,193)
University Secretariat	994	-	-	56	1,050	892	259	1,151	-	-	139	139	1,291	(241)
President's Office	1,183	-	-	-	1,183	409	116	525	-	-	620	620	1,145	38
University Advancement	5,963	-	-	40	6,003	8,422	2,275	10,696	-	-	(3,280)	(3,280)	7,417	(1,414)
Legal	3,886	-	-	-	3,886	743	180	923	-	-	4,519	4,519	5,442	(1,556)
General University	4,978	-	-	2,185	7,163	795	38	833	-	-	7,699	7,699	8,531	(1,368)
Sub-total	<b>53,309</b>	<b>-</b>	<b>-</b>	<b>4,243</b>	<b>57,552</b>	<b>34,431</b>	<b>9,379</b>	<b>43,810</b>	<b>-</b>	<b>-</b>	<b>21,747</b>	<b>21,747</b>	<b>65,557</b>	<b>(8,005)</b>
<b>8. Institutional Priority allocations</b>														
Technology Renewal	4,517	-	-	-	4,517	-	-	-	-	-	-	-	-	4,517
Marketing & Branding	3,022	-	-	-	3,022	586	126	712	-	-	2,310	2,310	3,022	(0)
Pension	22,175	-	-	-	22,175	-	22,175	22,175	-	-	-	-	22,175	-
President's Strategic Support Fund	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total	<b>29,714</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>29,714</b>	<b>586</b>	<b>22,301</b>	<b>22,887</b>	<b>-</b>	<b>-</b>	<b>2,310</b>	<b>2,310</b>	<b>25,197</b>	<b>4,517</b>
<b>Surplus/(Deficit)</b>	<b>721,168</b>	<b>-</b>	<b>12,140</b>	<b>107,928</b>	<b>841,236</b>	<b>423,012</b>	<b>129,322</b>	<b>552,334</b>	<b>31,286</b>	<b>15,681</b>	<b>242,565</b>	<b>289,532</b>	<b>841,866</b>	<b>(630)</b>
<i>Under/(over)allocated</i>	-	-	-	54	54	-	-	-	-	-	54	54	54	-
<b>Total Surplus/(Deficit)</b>	<b>721,168</b>	<b>-</b>	<b>12,140</b>	<b>107,982</b>	<b>841,290</b>	<b>423,012</b>	<b>129,322</b>	<b>552,334</b>	<b>31,286</b>	<b>15,681</b>	<b>242,619</b>	<b>289,586</b>	<b>841,920</b>	<b>(630)</b>

Table 23: Operating Fund 2023/24 Plan 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		
<b>1. Faculties</b>														
Business	69,160	-	-	4,634	73,794	37,585	8,892	46,477	1,557	-	21,153	22,711	69,187	4,607
Engineering	107,426	-	1,568	1,053	110,047	66,708	15,824	82,532	1,912	-	22,425	24,337	106,869	3,178
Health Sciences	70,771	65	6,223	36,551	113,610	91,081	24,055	115,136	1,824	(0)	4,130	5,953	121,090	(7,479)
Humanities	27,882	1,240	200	12,366	41,688	30,158	7,432	37,590	464	15	5,013	5,491	43,081	(1,394)
Science	98,409	348	476	2,057	101,290	60,365	16,361	76,726	211	-	19,754	19,966	96,692	4,598
Medical Radiation - Mohawk share	4,908	-	-	-	4,908	-	-	-	-	-	4,908	4,908	4,908	-
Social Sciences	53,839	615	50	662	55,166	34,344	9,125	43,469	550	-	8,446	8,996	52,465	2,701
Arts & Science	1,960	57	-	-	2,017	1,676	98	1,774	1	-	43	43	1,817	200
Sub-total	<b>434,355</b>	<b>2,325</b>	<b>8,517</b>	<b>57,323</b>	<b>502,520</b>	<b>321,916</b>	<b>81,788</b>	<b>403,703</b>	<b>6,518</b>	<b>15</b>	<b>85,871</b>	<b>92,405</b>	<b>496,108</b>	<b>6,412</b>
<b>2. Academic Priorities</b>														
University Fund	56,391	(2,325)	-	-	54,066	4,500	-	4,500	-	-	49,566	49,566	54,066	0
Revenue Projection Contingency	582	-	-	-	582	-	-	-	-	-	-	-	-	582
Ongoing Priorities Contingency	13,127	-	-	-	13,127	1,978	-	1,978	-	-	(1,978)	(1,978)	0	13,127
One-time Priorities Contingency	9,343	-	-	-	9,343	-	-	-	-	-	6,239	6,239	6,239	3,104
Sub-total	<b>79,443</b>	<b>(2,325)</b>	<b>-</b>	<b>-</b>	<b>77,118</b>	<b>6,478</b>	<b>-</b>	<b>6,478</b>	<b>-</b>	<b>-</b>	<b>53,827</b>	<b>53,827</b>	<b>60,305</b>	<b>16,813</b>
<b>TOTAL ACADEMIC</b>	<b>513,798</b>	<b>-</b>	<b>8,517</b>	<b>57,323</b>	<b>579,638</b>	<b>328,394</b>	<b>81,788</b>	<b>410,181</b>	<b>6,518</b>	<b>15</b>	<b>139,699</b>	<b>146,232</b>	<b>556,413</b>	<b>23,225</b>
<b>3. Academic Support</b>														
Provost's Office	7,902	-	-	966	8,868	6,226	1,306	7,531	3	-	2,991	2,994	10,525	(1,657)
Museum of Art	644	-	-	227	871	831	248	1,079	-	-	(208)	(208)	871	(0)
MacPherson Institute	3,597	-	-	150	3,747	2,832	772	3,604	-	-	759	759	4,362	(615)
University Library	22,945	-	-	88	23,033	8,057	2,240	10,297	3	12,418	1,862	14,284	24,581	(1,548)
Health Sciences Library	5,080	-	15	33	5,128	1,961	530	2,491	-	3,596	(674)	2,923	5,414	(286)
Registrar	5,760	-	-	3,090	8,850	6,936	1,989	8,925	-	-	1,750	1,750	10,675	(1,825)
Sub-total	<b>45,928</b>	<b>-</b>	<b>15</b>	<b>4,554</b>	<b>50,497</b>	<b>26,843</b>	<b>7,084</b>	<b>33,927</b>	<b>6</b>	<b>16,015</b>	<b>6,480</b>	<b>22,501</b>	<b>56,429</b>	<b>(5,932)</b>
<b>4. Research Support</b>														
Research	12,208	-	3,602	11,714	27,524	14,842	4,148	18,990	-	1	7,656	7,657	26,647	877
VP Research Discretionary Fund	2,362	-	-	-	2,362	-	-	-	-	-	2,931	2,931	2,931	(569)
Research Loans	-	-	-	-	-	-	-	-	-	-	(39)	(39)	(39)	39
Sub-total	<b>14,570</b>	<b>-</b>	<b>3,602</b>	<b>11,714</b>	<b>29,886</b>	<b>14,842</b>	<b>4,148</b>	<b>18,990</b>	<b>-</b>	<b>1</b>	<b>10,549</b>	<b>10,549</b>	<b>29,539</b>	<b>347</b>
<b>5. Student Support</b>														
Graduate Scholarships	13,243	-	-	-	13,243	600	-	600	12,613	-	-	12,613	13,213	30
School of Graduate Studies	2,758	-	-	58	2,816	1,853	481	2,335	55	-	501	556	2,891	(75)
Student Affairs	6,785	-	-	27,006	33,791	15,973	3,578	19,551	527	-	13,647	14,174	33,725	66
DBAC Building Financing	-	-	-	-	-	-	-	-	-	-	(61)	(61)	(61)	61
DBAC Deferred Maintenance	-	-	-	-	-	-	-	-	-	-	(520)	(520)	(520)	520
Undergraduate Scholarships	13,924	-	-	277	14,201	2,125	-	2,125	11,566	-	271	11,836	13,961	240
Sub-total	<b>36,710</b>	<b>-</b>	<b>-</b>	<b>27,341</b>	<b>64,051</b>	<b>20,551</b>	<b>4,059</b>	<b>24,610</b>	<b>24,761</b>	<b>-</b>	<b>13,838</b>	<b>38,599</b>	<b>63,209</b>	<b>842</b>
<b>6. Facilities Support</b>														
Facilities Services	16,758	-	-	2,508	19,266	13,491	3,698	17,189	-	-	2,971	2,971	20,160	(894)
HSC Maintenance	4,002	-	-	40	4,042	-	-	-	-	-	4,154	4,154	4,154	(112)
Utilities	23,937	-	-	2,178	26,115	1,611	598	2,209	-	-	27,100	27,100	29,309	(3,194)
Security	2,039	-	-	25	2,064	2,315	500	2,815	-	-	(290)	(290)	2,525	(461)
Deferred Maintenance	11,593	-	-	-	11,593	-	-	-	-	-	11,593	11,593	11,593	-
Bond Interest	10,089	-	-	-	10,089	-	-	-	-	-	10,089	10,089	10,089	-
Renovation contingency	974	-	-	-	974	-	-	-	-	-	974	974	974	0
Sub-total	<b>69,392</b>	<b>-</b>	<b>-</b>	<b>4,750</b>	<b>74,142</b>	<b>17,418</b>	<b>4,796</b>	<b>22,214</b>	<b>-</b>	<b>-</b>	<b>56,591</b>	<b>56,591</b>	<b>78,804</b>	<b>(4,662)</b>
<b>7. Institutional Support</b>														
Administration	15,954	-	-	1,921	17,875	13,391	3,850	17,241	-	-	2,832	2,832	20,073	(2,198)
UTS Asset Management	1,500	-	-	-	1,500	-	-	-	-	-	1,482	1,482	1,482	18
UTS/Technology Fund	18,135	-	-	80	18,215	10,365	2,882	13,247	-	-	7,554	7,554	20,801	(2,586)
University Secretariat	994	-	-	56	1,050	921	269	1,190	-	-	139	139	1,329	(280)
President's Office	1,183	-	-	-	1,183	422	120	543	-	-	602	602	1,145	38
University Advancement	5,963	-	-	40	6,003	7,556	2,031	9,588	-	-	(3,585)	(3,585)	6,003	(0)
Legal	3,886	-	-	-	3,886	767	186	953	-	-	4,519	4,519	5,473	(1,587)
General University	4,978	-	-	2,200	7,178	829	38	868	-	-	7,943	7,943	8,810	(1,632)
Sub-total	<b>52,593</b>	<b>-</b>	<b>-</b>	<b>4,297</b>	<b>56,890</b>	<b>34,252</b>	<b>9,377</b>	<b>43,629</b>	<b>-</b>	<b>-</b>	<b>21,487</b>	<b>21,487</b>	<b>65,116</b>	<b>(8,226)</b>
<b>8. Institutional Priority allocations</b>														
Technology Renewal	3,215	-	-	-	3,215	-	-	-	-	-	-	-	-	3,215
Marketing & Branding	3,022	-	-	-	3,022	602	131	733	-	-	2,289	2,289	3,022	(0)
Pension	22,175	-	-	-	22,175	-	22,175	22,175	-	-	-	-	22,175	-
President's Strategic Support Fund	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total	<b>28,412</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>28,412</b>	<b>602</b>	<b>22,306</b>	<b>22,908</b>	<b>-</b>	<b>-</b>	<b>2,289</b>	<b>2,289</b>	<b>25,197</b>	<b>3,215</b>
<b>Surplus/(Deficit)</b>	<b>761,403</b>	<b>-</b>	<b>12,135</b>	<b>109,979</b>	<b>883,516</b>	<b>442,901</b>	<b>133,558</b>	<b>576,459</b>	<b>31,285</b>	<b>16,031</b>	<b>250,933</b>	<b>298,248</b>	<b>874,707</b>	<b>8,809</b>
<i>Under/(over)allocated</i>	-	-	-	(3,744)	(3,744)	-	-	-	-	-	(3,744)	(3,744)	(3,744)	-
<b>Total Surplus/(Deficit)</b>	<b>761,403</b>	<b>-</b>	<b>12,135</b>	<b>106,234</b>	<b>879,772</b>	<b>442,901</b>	<b>133,558</b>	<b>576,459</b>	<b>31,285</b>	<b>16,031</b>	<b>247,188</b>	<b>294,504</b>	<b>870,963</b>	<b>8,809</b>

Table 24: Operating Fund Annual Net Change by Unit

(\$ thousands)	2020/21		2021/22	2022/23	2023/24
	Budget	Projection	Budget	Plan	Plan
<b>1. Faculties</b>					
Business	0	(8,615)	740	2,574	4,607
Engineering	(5,080)	(21,310)	(1,245)	(712)	3,178
Health Sciences	(6,115)	(4,509)	(8,026)	(8,202)	(7,479)
Humanities	1,241	3,670	(1,395)	(3,180)	(1,394)
Science	(2,232)	(6,192)	2,103	1,263	4,598
Medical Radiation - Mohawk share	-	(1)	(0)	-	-
Social Sciences	518	3,937	2,917	546	2,701
Arts & Science	(532)	22	62	22	200
Sub-total	<b>(12,200)</b>	<b>(32,997)</b>	<b>(4,843)</b>	<b>(7,689)</b>	<b>6,412</b>
<b>2. Academic Priorities</b>					
University Fund	(7,079)	(499)	(2,648)	0	0
Revenue Projection Contingency	(31,492)	5,232	582	582	582
Ongoing Priorities Contingency	35	(386)	10,033	11,222	13,127
One-time Priorities Contingency	(654)	(7,775)	153	7,303	3,104
Sub-total	<b>(39,191)</b>	<b>(3,428)</b>	<b>8,120</b>	<b>19,107</b>	<b>16,813</b>
<b>TOTAL ACADEMIC</b>	<b>(51,391)</b>	<b>(36,424)</b>	<b>3,277</b>	<b>11,418</b>	<b>23,225</b>
<b>3. Academic Support</b>					
Office of the Provost	(1,706)	(2,027)	(2,054)	(1,650)	(1,657)
Museum of Art	(0)	29	0	(0)	(0)
MacPherson Institute	(596)	(226)	(784)	(603)	(615)
University Library	386	(127)	(589)	(846)	(1,548)
Health Sciences Library	(187)	51	(61)	(214)	(286)
Registrar	(381)	(142)	(336)	(1,758)	(1,825)
Sub-total	<b>(2,484)</b>	<b>(2,443)</b>	<b>(3,823)</b>	<b>(5,071)</b>	<b>(5,932)</b>
<b>4. Research Support</b>					
Research	(423)	67	317	1,226	877
VP Research Discretionary Fund	0	1,866	882	(1,548)	(569)
Research Loans	89	89	89	39	39
Sub-total	<b>(334)</b>	<b>2,022</b>	<b>1,287</b>	<b>(283)</b>	<b>347</b>
<b>5. Student Support</b>					
Graduate Scholarships	(0)	30	30	30	30
School of Graduate Studies	(260)	(105)	(116)	(92)	(75)
Student Affairs	(548)	(2,202)	1,188	335	66
DBAC Building Financing	-	-	(1,211)	(704)	61
DBAC Deferred Maintenance	160	160	400	520	520
Undergraduate Scholarships	(0)	(371)	220	240	240
Sub-total	<b>(649)</b>	<b>(2,488)</b>	<b>511</b>	<b>328</b>	<b>842</b>
<b>6. Facilities Support</b>					
Facilities Services	(56)	125	193	72	(894)
HSC Maintenance	0	(85)	(112)	(112)	(112)
Utilities	(93)	1,202	(1,692)	(3,127)	(3,194)
Security	(276)	(185)	(324)	(367)	(461)
Deferred Maintenance	(0)	0	(0)	-	-
Bond Interest	-	1	-	-	-
Renovation contingency	0	0	0	0	0
Sub-total	<b>(425)</b>	<b>1,058</b>	<b>(1,936)</b>	<b>(3,535)</b>	<b>(4,662)</b>
<b>7. Institutional Support</b>					
Administration	(1,398)	(784)	(1,619)	(1,107)	(2,198)
UTS/Technology Fund	(2,031)	(2,868)	(2,620)	(2,193)	(2,586)
UTS Asset Management	(193)	67	(839)	(163)	18
University Secretariat	3	(44)	(213)	(241)	(280)
Presidential Budget	63	(1,997)	38	38	38
University Advancement	(911)	620	(1,425)	(1,414)	(0)
Legal	-	(1,457)	(1,401)	(1,556)	(1,587)
General University	85	1,326	(575)	(1,368)	(1,632)
Sub-total	<b>(4,381)</b>	<b>(5,137)</b>	<b>(8,655)</b>	<b>(8,005)</b>	<b>(8,226)</b>
<b>8. Institutional Priority allocations</b>					
Technology Renewal	4,517	4,517	4,517	4,517	3,215
Marketing & Branding	1,288	(1,565)	0	(0)	(0)
Pension	(0)	(0)	0	-	-
Strategic Priorities	-	3,079	-	-	-
Sub-total	<b>5,805</b>	<b>6,031</b>	<b>4,517</b>	<b>4,517</b>	<b>3,215</b>
<b>Surplus/(Deficit)</b>	<b>(53,859)</b>	<b>(37,383)</b>	<b>(4,822)</b>	<b>(630)</b>	<b>8,809</b>
<i>Under/(over)allocated</i>	(0)	0	0	-	-
<b>Total Surplus/(Deficit)</b>	<b>(53,859)</b>	<b>(37,383)</b>	<b>(4,822)</b>	<b>(630)</b>	<b>8,809</b>

Table 25: Operating Fund 2020/21 Financial Position and Variance by Unit

(\$ thousands)	2020/21 Budget				2020/21 Projection				Favourable (Unfavourable) Variance						
	Appropriations April 30, 2020	On-going	One-time	Total	Appropriations April 30, 2021	Appropriations April 30, 2020	On-going	One-time	Total	Appropriations April 30, 2021	Appropriations April 30, 2020	On-going	One-time	Total	Appropriations April 30, 2021
1. Faculties															
Business	0	7,028	(7,028)	0	0	9,627	16,106	(24,721)	(8,615)	1,012	9,627	9,078	(17,692)	(8,615)	1,012
Engineering	32,256	(1,578)	(3,503)	(5,080)	27,176	33,272	6,955	(28,265)	(21,310)	11,961	1,016	8,532	(24,762)	(16,230)	(15,214)
Health Sciences	38,961	(7,929)	1,813	(6,115)	32,846	47,110	(2,248)	(2,261)	(4,509)	42,601	8,149	5,680	(4,074)	1,606	9,755
Humanities	4,298	(515)	1,756	1,241	5,538	5,879	1,695	1,975	3,670	9,549	1,581	2,211	219	2,429	4,011
Science	10,250	4,004	(6,236)	(2,232)	8,019	21,591	4,508	(10,699)	(6,192)	15,399	11,340	504	(4,464)	(3,960)	7,380
Medical Radiation - Mohawk share	-	-	-	-	-	1	(1)	-	(1)	0	1	(1)	-	-	0
Social Sciences	8,137	337	180	518	8,655	9,191	2,610	1,327	3,937	13,128	1,054	2,273	1,146	3,419	4,473
Arts & Science	1,408	(879)	347	(532)	877	1,386	(450)	473	22	1,408	(23)	428	126	554	531
Sub-total	95,310	470	(12,670)	(12,200)	83,110	128,056	29,175	(62,172)	(32,997)	95,059	32,745	28,705	(49,502)	(20,797)	11,949
2. Academic Priorities															
University Fund	37,068	2,921	(10,000)	(7,079)	29,988	37,246	12,454	(12,953)	(499)	36,747	178	9,534	(2,953)	6,581	6,758
Revenue Projection Contingency	2,080	(31,492)	-	(31,492)	(29,412)	3,450	8,682	(3,450)	5,232	8,682	1,370	40,174	(3,450)	36,724	38,094
Ongoing Priorities Contingency	10,043	35	-	35	10,077	430	47	(433)	(386)	44	(9,613)	13	(433)	(420)	(10,034)
One-time Priorities Contingency	(2,785)	10,000	(10,654)	(654)	(3,439)	(2,785)	14,500	(22,275)	(7,775)	(10,560)	-	4,500	(11,621)	(7,121)	(7,121)
Sub-total	46,406	(18,537)	(20,654)	(39,191)	7,215	38,340	35,683	(39,111)	(3,428)	34,912	(8,066)	54,220	(18,457)	35,763	27,697
TOTAL ACADEMIC	141,716	(18,067)	(33,324)	(51,391)	90,325	166,396	64,859	(101,283)	(36,424)	129,971	24,680	82,925	(67,959)	14,967	39,646
3. Academic Support															
Office of the Provost	6,023	(1,447)	(259)	(1,706)	4,317	7,914	(2,375)	347	(2,027)	5,887	1,891	(928)	606	(322)	1,569
Museum of Art	0	(0)	-	(0)	(0)	(29)	29	-	29	(0)	(29)	29	-	29	(0)
MacPherson Institute	2,123	(477)	(119)	(596)	1,527	2,617	(236)	9	(226)	2,390	493	242	128	370	863
University Library	543	(35)	421	386	929	652	(677)	551	(127)	525	108	(642)	130	(512)	(404)
Health Sciences Library	27	(187)	-	(187)	(160)	(101)	(69)	120	51	(51)	(128)	117	120	237	110
Registrar	954	(15)	(366)	(381)	573	1,313	10	(153)	(142)	1,171	359	26	213	239	598
Sub-total	9,670	(2,162)	(323)	(2,484)	7,185	12,365	(3,318)	875	(2,443)	9,922	2,695	(1,156)	1,197	41	2,737
4. Research Support															
Research	2,969	(538)	115	(423)	2,546	5,771	(437)	503	67	5,837	2,802	101	388	489	3,291
VP Research Discretionary Fund	(0)	0	-	0	(0)	1,715	1,765	101	1,866	(472)	(141)	1,765	101	1,866	1,725
Research Loans	(566)	89	-	89	(477)	(566)	89	-	89	-	-	-	-	-	0
Sub-total	2,403	(449)	115	(334)	2,069	5,064	1,417	604	2,022	7,085	2,660	1,866	489	2,355	5,016
5. Student Support															
Graduate Scholarships	546	(0)	-	(0)	545	(556)	30	-	30	(526)	(1,102)	30	-	30	(1,071)
School of Graduate Studies	(302)	(260)	-	(260)	(562)	315	(232)	127	(105)	210	617	28	127	155	772
Student Affairs	3,517	(1,307)	759	(548)	2,969	4,922	(1,467)	(735)	(2,202)	2,720	1,405	(159)	(1,494)	(1,654)	(249)
DBAC Building Financing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DBAC Deferred Maintenance	2,801	160	-	160	2,961	2,901	160	-	160	3,061	100	(0)	-	(0)	100
Undergraduate Scholarships	52	(0)	-	(0)	52	2,358	216	(587)	(371)	1,986	2,305	216	(587)	(371)	1,934
Sub-total	6,615	(1,408)	759	(649)	5,966	9,940	(1,293)	(1,195)	(2,488)	7,452	3,325	115	(1,954)	(1,839)	1,486
6. Facilities Support															
Facilities Services	232	44	(100)	(56)	176	263	(466)	591	125	388	31	(510)	691	181	213
HSC Maintenance	0	0	-	0	0	177	(85)	-	(85)	92	177	(85)	-	(85)	92
Utilities	3,085	(93)	-	(93)	2,993	293	1,202	-	1,202	1,495	(2,793)	1,295	-	1,295	(1,498)
Security	492	(276)	-	(276)	216	504	(185)	-	(185)	319	12	91	-	91	102
Deferred Maintenance	(0)	(0)	-	(0)	(0)	-	0	-	0	0	0	0	-	0	0
Bond Interest	(1)	-	-	-	(1)	(1)	1	-	1	(0)	(0)	1	-	1	1
Renovation contingency	(4)	0	-	0	(4)	-	0	-	0	0	4	(0)	-	(0)	4
Sub-total	3,805	(325)	(100)	(425)	3,380	1,235	467	591	1,058	2,293	(2,569)	792	691	1,483	(1,087)
7. Institutional Support															
Administration	3,532	(909)	(489)	(1,398)	2,134	5,163	(894)	110	(784)	4,379	1,631	16	599	615	2,245
UTS/Technology Fund	2,635	(2,193)	163	(2,031)	605	6,383	(1,257)	(1,611)	(2,868)	3,515	937	3,748	(1,775)	(838)	2,910
UTS Asset Management	(74)	(193)	-	(193)	(267)	840	67	-	67	907	914	260	-	260	1,173
University Secretariat	295	3	-	3	298	338	(34)	(10)	(44)	294	43	(37)	(10)	(47)	(4)
Presidential Budget	2,077	87	(24)	63	2,140	2,140	7	(2,004)	(1,997)	142	62	(79)	(1,980)	(2,060)	(1,998)
University Advancement	1,773	(934)	24	(911)	862	2,720	620	-	620	3,340	947	1,554	(24)	1,530	2,477
Legal	-	-	-	-	-	(51)	(1,542)	85	(1,457)	(1,508)	(51)	(1,542)	85	(1,457)	(1,508)
General University	(7)	(1,419)	1,504	85	78	(750)	(1,029)	2,355	1,326	576	(743)	390	851	1,241	498
Sub-total	10,231	(5,560)	1,178	(4,381)	5,850	16,781	(4,062)	(1,076)	(5,137)	11,644	6,550	1,498	(2,254)	(756)	5,794
8. Institutional Priority allocations															
Technology Renewal	(16,766)	-	4,517	4,517	(12,249)	(16,766)	0	4,517	4,517	(12,249)	-	0	-	0	0
Marketing & Branding	(2)	(0)	1,288	1,288	(0)	1,565	(853)	(712)	(1,565)	(0)	1,567	(853)	(2,000)	(2,853)	(1,286)
Pension	(0)	(0)	-	(0)	(0)	-	(0)	-	(0)	(0)	0	0	-	0	0
Strategic Priorities	-	-	-	-	-	-	(0)	3,079	3,079	3,079	-	(0)	3,079	3,079	3,079
Sub-total	(16,768)	(0)	5,805	5,805	(10,963)	(15,201)	(853)	6,884	6,031	(9,171)	1,567	(853)	1,079	226	1,793
Surplus/(Deficit)	157,672	(27,970)	(25,889)	(53,859)	103,812	196,580	57,216	(94,599)	(37,383)	159,197	38,908	85,186	(68,710)	16,476	55,384
Under/overallocated	(0)	4,517	(4,517)	(0)	(0)	(0)	4,517	(4,517)	0	(0)	0	0	-	0	0
Total Surplus/(Deficit)	157,672	(23,453)	(30,406)	(53,859)	103,812	196,580	61,733	(99,116)	(37,383)	159,197	38,908	85,186	(68,710)	16,476	55,384

Table 26: Operating Fund Budget and Plan Financial Position by Unit

(\$ thousands)	2021/22 Budget					2022/23 Plan				2023/24 Plan			
	Appropriations April 30, 2021	On-going	One-time	Total	Appropriations April 30, 2022	On-going	One-time	Total	Appropriations April 30, 2023	On-going	One-time	Total	Appropriations April 30, 2024
<b>1. Faculties</b>													
Business	1,012	12,357	(11,617)	740	1,752	12,574	(10,000)	2,574	4,327	14,607	(10,000)	4,607	8,933
Engineering	11,961	5,995	(7,239)	(1,245)	10,717	10,173	(10,885)	(712)	10,005	14,203	(11,025)	3,178	13,183
Health Sciences	42,601	(5,439)	(2,587)	(8,026)	34,575	(5,326)	(2,876)	(8,202)	26,372	(7,154)	(325)	(7,479)	18,893
Humanities	9,549	(2,750)	1,355	(1,395)	8,154	(1,420)	(1,760)	(3,180)	4,974	366	(1,760)	(1,394)	3,581
Science	15,399	6,620	(4,516)	2,103	17,503	10,822	(9,558)	1,263	18,766	14,251	(9,652)	4,598	23,364
Medical Radiation - Mohawk share		(0)	-	(0)	(0)	-	-	-	(0)	-	-	-	(0)
Social Sciences	13,128	3,302	(385)	2,917	16,045	4,931	(4,385)	546	16,591	7,086	(4,385)	2,701	19,292
Arts & Science	1,408	(183)	244	62	1,470	(44)	66	22	1,492	143	57	200	1,692
Sub-total	<b>95,059</b>	<b>19,902</b>	<b>(24,745)</b>	<b>(4,843)</b>	<b>90,216</b>	<b>31,708</b>	<b>(39,398)</b>	<b>(7,689)</b>	<b>82,527</b>	<b>43,502</b>	<b>(37,090)</b>	<b>6,412</b>	<b>88,938</b>
<b>2. Academic Priorities</b>													
University Fund	36,747	10,852	(13,500)	(2,648)	34,099	13,500	(13,500)	0	34,099	13,500	(13,500)	0	34,099
Revenue Projection Contingency	8,682	582	-	582	9,264	582	-	582	9,846	582	-	582	10,428
Ongoing Priorities Contingency	44	10,033	-	10,033	10,077	11,222	-	11,222	21,299	13,127	-	13,127	34,426
One-time Priorities Contingency	(10,560)	10,000	(9,847)	153	(10,407)	10,000	(2,697)	7,303	(3,104)	10,000	(6,896)	3,104	(0)
Sub-total	<b>34,912</b>	<b>31,467</b>	<b>(23,347)</b>	<b>8,120</b>	<b>43,033</b>	<b>35,304</b>	<b>(16,197)</b>	<b>19,107</b>	<b>62,140</b>	<b>37,209</b>	<b>(20,396)</b>	<b>16,813</b>	<b>78,953</b>
<b>TOTAL ACADEMIC</b>	<b>129,971</b>	<b>51,369</b>	<b>(48,092)</b>	<b>3,277</b>	<b>133,248</b>	<b>67,012</b>	<b>(55,595)</b>	<b>11,418</b>	<b>144,666</b>	<b>80,711</b>	<b>(57,486)</b>	<b>23,225</b>	<b>167,891</b>
<b>3. Academic Support</b>													
Office of the Provost	5,887	(2,160)	105	(2,054)	3,832	(1,656)	6	(1,650)	2,182	(1,651)	(6)	(1,657)	525
Museum of Art	(0)	0	-	0	0	(0)	-	(0)	0	(0)	-	(0)	(0)
MacPherson Institute	2,390	(537)	(247)	(784)	1,606	(544)	(59)	(603)	1,004	(615)	-	(615)	388
University Library	525	(1,144)	556	(589)	(64)	(1,327)	481	(846)	(910)	(1,498)	(50)	(1,548)	(2,458)
Health Sciences Library	(51)	(61)	-	(111)	(111)	(214)	-	(214)	(325)	(286)	-	(286)	(612)
Registrar	1,171	(336)	-	(336)	835	(1,608)	(150)	(1,758)	(923)	(1,825)	-	(1,825)	(2,748)
Sub-total	<b>9,922</b>	<b>(4,237)</b>	<b>414</b>	<b>(3,823)</b>	<b>6,099</b>	<b>(5,349)</b>	<b>278</b>	<b>(5,071)</b>	<b>1,028</b>	<b>(5,877)</b>	<b>(55)</b>	<b>(5,932)</b>	<b>(4,905)</b>
<b>4. Research Support</b>													
Research	5,837	756	(439)	317	6,154	1,226	-	1,226	7,380	877	-	877	8,258
VP Research Discretionary Fund	1,725	882	-	882	2,606	(1,548)	-	(1,548)	1,059	(569)	-	(569)	490
Research Loans	(477)	89	-	89	(388)	39	-	39	(349)	39	-	39	(310)
Sub-total	<b>7,085</b>	<b>1,726</b>	<b>(439)</b>	<b>1,287</b>	<b>8,372</b>	<b>(283)</b>	<b>-</b>	<b>(283)</b>	<b>8,090</b>	<b>347</b>	<b>-</b>	<b>347</b>	<b>8,437</b>
<b>5. Student Support</b>													
Graduate Scholarships	(526)	30	-	30	(496)	30	-	30	(466)	30	-	30	(436)
School of Graduate Studies	210	(283)	167	(116)	94	(157)	65	(92)	2	(137)	62	(75)	(74)
Student Affairs	2,720	226	962	1,188	3,908	278	57	335	4,243	7	59	66	4,309
DBAC Building Financing	-	(1,211)	-	(1,211)	(1,211)	(704)	-	(704)	(1,915)	61	-	61	(1,854)
DBAC Deferred Maintenance	3,061	400	-	400	3,461	520	-	520	3,981	520	-	520	4,501
Undergraduate Scholarships	1,986	220	-	220	2,206	240	-	240	2,446	240	-	240	2,686
Sub-total	<b>7,452</b>	<b>(618)</b>	<b>1,128</b>	<b>511</b>	<b>7,963</b>	<b>207</b>	<b>121</b>	<b>328</b>	<b>8,291</b>	<b>722</b>	<b>121</b>	<b>842</b>	<b>9,133</b>
<b>6. Facilities Support</b>													
Facilities Services	388	38	155	193	581	(183)	255	72	653	(894)	-	(894)	(242)
HSC Maintenance	92	(112)	-	(112)	(20)	(112)	-	(112)	(133)	(112)	-	(112)	(245)
Utilities	1,495	(1,692)	-	(1,692)	(197)	(3,127)	-	(3,127)	(3,325)	(3,194)	-	(3,194)	(6,519)
Security	319	(324)	-	(324)	(5)	(367)	-	(367)	(373)	(461)	-	(461)	(834)
Deferred Maintenance	0	(0)	-	(0)	(0)	-	-	-	0	-	-	-	0
Bond Interest	(0)	-	-	-	(0)	-	-	-	(0)	-	-	-	(0)
Renovation contingency	0	0	-	0	0	0	-	0	0	0	-	0	0
Sub-total	<b>2,293</b>	<b>(2,091)</b>	<b>155</b>	<b>(1,936)</b>	<b>358</b>	<b>(3,790)</b>	<b>255</b>	<b>(3,535)</b>	<b>(3,177)</b>	<b>(4,662)</b>	<b>-</b>	<b>(4,662)</b>	<b>(7,839)</b>
<b>7. Institutional Support</b>													
Administration	4,379	(964)	(655)	(1,619)	2,760	(1,359)	252	(1,107)	1,653	(1,845)	(353)	(2,198)	(545)
UTS/Technology Fund	3,515	(2,297)	(323)	(2,620)	894	(1,940)	(253)	(2,193)	(1,299)	(2,333)	(253)	(2,586)	(3,884)
UTS Asset Management	907	(839)	-	(839)	68	(163)	-	(163)	(95)	18	-	18	(77)
University Secretariat	294	(213)	-	(213)	81	(241)	-	(241)	(160)	(280)	-	(280)	(440)
Presidential Budget	142	38	-	38	180	38	-	38	218	38	-	38	256
University Advancement	3,340	(1,425)	-	(1,425)	1,914	(1,454)	-	(1,454)	500	(0)	-	(0)	500
Legal	(1,508)	(1,531)	130	(1,401)	(2,909)	(1,556)	-	(1,556)	(4,465)	(1,587)	-	(1,587)	(6,051)
General University	576	(1,115)	540	(575)	1	(1,368)	-	(1,368)	(1,368)	(1,632)	-	(1,632)	(3,000)
Sub-total	<b>11,644</b>	<b>(8,347)</b>	<b>(308)</b>	<b>(8,655)</b>	<b>2,989</b>	<b>(8,003)</b>	<b>(1)</b>	<b>(8,005)</b>	<b>(5,016)</b>	<b>(7,620)</b>	<b>(606)</b>	<b>(8,226)</b>	<b>(13,242)</b>
<b>8. Institutional Priority allocations</b>													
Technology Renewal	(12,249)	-	4,517	4,517	(7,732)	-	4,517	4,517	(3,215)	-	3,215	3,215	(0)
Marketing & Branding	(0)	0	0	0	(0)	(0)	-	(0)	(0)	(0)	-	(0)	(0)
Pension	(0)	0	-	0	0	-	-	-	0	-	-	-	0
Strategic Priorities	3,079	-	-	-	3,079	-	-	-	3,079	-	-	-	3,079
Sub-total	<b>(9,171)</b>	<b>0</b>	<b>4,517</b>	<b>4,517</b>	<b>(4,654)</b>	<b>(0)</b>	<b>4,517</b>	<b>4,517</b>	<b>(137)</b>	<b>(0)</b>	<b>3,215</b>	<b>3,215</b>	<b>3,078</b>
<b>Surplus/(Deficit)</b>	<b>159,197</b>	<b>37,803</b>	<b>(42,624)</b>	<b>(4,822)</b>	<b>154,375</b>	<b>49,795</b>	<b>(50,425)</b>	<b>(630)</b>	<b>153,745</b>	<b>63,621</b>	<b>(54,812)</b>	<b>8,809</b>	<b>162,554</b>
<b>Under/(over)allocated</b>	<b>(0)</b>	<b>4,517</b>	<b>(4,517)</b>	<b>0</b>	<b>0</b>	<b>4,517</b>	<b>(4,517)</b>	<b>-</b>	<b>(0)</b>	<b>3,215</b>	<b>(3,215)</b>	<b>-</b>	<b>(0)</b>
<b>Total Surplus/(Deficit)</b>	<b>159,197</b>	<b>42,320</b>	<b>(47,141)</b>	<b>(4,822)</b>	<b>154,375</b>	<b>54,312</b>	<b>(54,942)</b>	<b>(630)</b>	<b>153,745</b>	<b>66,836</b>	<b>(58,027)</b>	<b>8,809</b>	<b>162,554</b>

## APPENDIX 4 – SUMMARY BY FUND

Table 27: Consolidated 2020/21 Projection by Fund

(\$ thousands)

	Operating Fund	Research Fund	Capital Fund	External Endowment	Internal Endowment	Ancillary Fund	Externally Funded	Total	GAAP Adjustment	Full Accrual Basis
<b>Revenues</b>										
Operating grants	236,355	-	5,061	-	-	-	-	241,416	37,187	278,603
Research grants and contracts	-	237,000	-	-	-	-	-	237,000	(60,674)	176,326
Tuition fees	398,233	-	-	-	-	-	-	398,233	17,920	416,153
Ancillary sales and services	-	-	-	-	-	19,309	-	19,309	0	19,309
Other revenues	123,845	-	9,585	9,204	100	-	32,845	175,580	6,924	182,504
Amortization of deferred capital contributions	-	-	-	-	-	-	-	-	39,650	39,650
Investment income (loss)	4,978	-	-	26,657	7,915	-	-	39,550	21,341	60,891
Investment income transfer	5,489	-	-	-	(5,489)	-	-	-	-	-
<b>Total revenues</b>	<b>768,900</b>	<b>237,000</b>	<b>14,646</b>	<b>35,861</b>	<b>2,526</b>	<b>19,309</b>	<b>32,845</b>	<b>1,111,087</b>	<b>62,349</b>	<b>1,173,436</b>
<b>Expenses</b>										
Salaries, wages and benefits	509,688	117,000	-	-	-	25,244	22,903	674,836	4,376	679,212
All other expenses	196,182	63,000	72,596	2,535	182	14,854	10,051	359,400	(2,377)	357,023
Amortization expense	-	-	-	-	-	-	-	-	80,652	80,652
Transfers to (from) other funds	82,003	(19,340)	(76,755)	20,867	707	(7,488)	6	-	-	-
Debt and financing charges	18,410	-	(9,350)	-	-	5,243	-	14,304	(1,153)	13,151
<b>Total expenses</b>	<b>806,283</b>	<b>160,660</b>	<b>(13,509)</b>	<b>23,402</b>	<b>889</b>	<b>37,854</b>	<b>32,960</b>	<b>1,048,539</b>	<b>81,499</b>	<b>1,130,038</b>
<b>Excess of revenues over expenses</b>	<b>(37,383)</b>	<b>76,340</b>	<b>28,154</b>	<b>12,459</b>	<b>1,637</b>	<b>(18,545)</b>	<b>(115)</b>	<b>62,548</b>	<b>(19,150)</b>	<b>43,398</b>



Table 28: Consolidated 2021/22 Budget by Fund

(\$ thousands)

	Operating Fund	Research Fund	Capital Fund	External Endowment	Internal Endowment	Ancillary Fund	Externally Funded	Total	GAAP Adjustment	Full Accrual Basis
<b>Revenues</b>										
Operating grants	235,863	-	5,970	-	-	-	-	241,833	35,945	277,778
Research grants and contracts	-	188,000	-	-	-	-	-	188,000	(4,555)	183,445
Tuition fees	456,282	-	-	-	-	-	-	456,282	15,970	472,252
Ancillary sales and services	-	-	-	-	-	93,259	-	93,259	(0)	93,259
Other revenues	139,678	-	92,835	2,577	100	-	32,864	268,054	(61,353)	206,701
Amortization of deferred capital contributions	-	-	-	-	-	-	-	-	39,037	39,037
Investment income (loss)	3,836	-	-	27,678	8,095	-	-	39,609	31,164	70,773
Investment income transfer	5,631	-	-	-	(5,631)	-	-	-	-	-
<b>Total revenues</b>	<b>841,290</b>	<b>188,000</b>	<b>98,805</b>	<b>30,255</b>	<b>2,564</b>	<b>93,259</b>	<b>32,864</b>	<b>1,287,038</b>	<b>56,207</b>	<b>1,343,245</b>
<b>Expenses</b>										
Salaries, wages and benefits	552,334	121,000	-	-	-	32,877	22,854	729,065	35,834	764,899
All other expenses	232,098	63,000	265,894	3,898	169	33,473	10,303	608,835	(235,117)	373,718
Amortization expense	-	-	-	-	-	-	-	-	86,395	86,395
Transfers to (from) other funds	31,949	(14,698)	(49,225)	20,531	723	10,906	(187)	-	-	-
Debt and financing charges	25,539	-	(16,569)	-	-	7,603	-	16,573	991	17,564
<b>Total expenses</b>	<b>841,920</b>	<b>169,302</b>	<b>200,100</b>	<b>24,429</b>	<b>892</b>	<b>84,859</b>	<b>32,970</b>	<b>1,354,473</b>	<b>(111,897)</b>	<b>1,242,576</b>
<b>Excess of revenues over expenses</b>	<b>(630)</b>	<b>18,698</b>	<b>(101,295)</b>	<b>5,826</b>	<b>1,672</b>	<b>8,400</b>	<b>(106)</b>	<b>(67,435)</b>	<b>168,104</b>	<b>100,669</b>

Table 29: Consolidated 2022/23 Plan by Fund

(\$ thousands)										
	Operating Fund	Research Fund	Capital Fund	External Endowment	Internal Endowment	Ancillary Fund	Externally Funded	Total	GAAP Adjustment	Full Accrual Basis
<b>Revenues</b>										
Operating grants	235,585	-	5,330	-	-	-	-	240,915	36,484	277,399
Research grants and contracts	-	190,000	-	-	-	-	-	190,000	(1,969)	188,031
Tuition fees	492,998	-	-	-	-	-	-	492,998	17,255	510,253
Ancillary sales and services	-	-	-	-	-	103,791	-	103,791	0	103,791
Other revenues	141,722	-	148,710	20,320	101	-	32,148	343,001	(122,899)	220,102
Amortization of deferred capital contributions	-	-	-	-	-	-	-	-	44,989	44,989
Investment income (loss)	3,836	-	-	28,005	8,188	-	-	40,029	31,874	71,903
Investment income transfer	5,631	-	-	-	(5,631)	-	-	-	-	-
<b>Total revenues</b>	<b>879,772</b>	<b>190,000</b>	<b>154,040</b>	<b>48,325</b>	<b>2,658</b>	<b>103,791</b>	<b>32,148</b>	<b>1,410,734</b>	<b>5,734</b>	<b>1,416,468</b>
<b>Expenses</b>										
Salaries, wages and benefits	576,459	123,000	-	-	-	35,102	23,059	757,621	47,316	804,937
All other expenses	244,422	63,000	257,923	3,862	173	36,061	9,412	614,853	(212,672)	402,181
Amortization expense	-	-	-	-	-	-	-	-	92,022	92,022
Transfers to (from) other funds	25,190	(14,745)	(48,594)	20,734	731	16,878	(193)	-	-	-
Debt and financing charges	24,893	-	(18,740)	-	-	9,417	-	15,570	1,947	17,517
<b>Total expenses</b>	<b>870,963</b>	<b>171,255</b>	<b>190,589</b>	<b>24,596</b>	<b>904</b>	<b>97,459</b>	<b>32,279</b>	<b>1,388,043</b>	<b>(71,386)</b>	<b>1,316,657</b>
<b>Excess of revenues over expenses</b>	<b>8,809</b>	<b>18,745</b>	<b>(36,549)</b>	<b>23,729</b>	<b>1,754</b>	<b>6,332</b>	<b>(131)</b>	<b>22,690</b>	<b>77,121</b>	<b>99,811</b>

Table 30: Consolidated 2023/24 Plan by Fund

(\$ thousands)

	Operating Fund	Research Fund	Capital Fund	External Endowment	Internal Endowment	Ancillary Fund	Externally Funded	Total	GAAP Adjustment	Full Accrual Basis
<b>Revenues</b>										
Operating grants	234,736	-	5,330	-	-	-	-	240,066	32,800	272,866
Research grants and contracts	-	204,000	-	-	-	-	-	204,000	(13,192)	190,808
Tuition fees	437,368	-	-	-	-	-	-	437,368	23,217	460,585
Ancillary sales and services	-	-	-	-	-	97,335	-	97,335	(15,536)	81,799
Other revenues	144,087	-	110,800	2,559	101	-	31,657	289,205	(52,349)	236,856
Amortization of deferred capital contributions	-	-	-	-	-	-	-	-	45,267	45,267
Investment income (loss)	4,820	-	-	21,944	6,505	-	-	33,269	21,647	54,916
Investment income transfer	4,647	-	-	-	(4,647)	-	-	-	-	-
<b>Total revenues</b>	<b>825,658</b>	<b>204,000</b>	<b>116,130</b>	<b>24,503</b>	<b>1,959</b>	<b>97,335</b>	<b>31,657</b>	<b>1,301,243</b>	<b>41,854</b>	<b>1,343,097</b>
<b>Expenses</b>										
Salaries, wages and benefits	541,224	114,000	-	-	-	34,452	23,073	712,750	20,113	732,863
All other expenses	246,122	86,000	154,436	2,545	-	34,107	8,582	531,793	(98,081)	433,712
Amortization expense	-	-	-	-	-	-	-	-	106,731	106,731
Transfers to (from) other funds	32,826	(14,459)	(55,052)	19,065	581	17,207	(169)	0	(0)	-
Debt and financing charges	21,092	-	(17,746)	-	-	9,577	-	12,922	5,276	18,198
<b>Total expenses</b>	<b>841,265</b>	<b>185,541</b>	<b>81,638</b>	<b>21,610</b>	<b>581</b>	<b>95,344</b>	<b>31,486</b>	<b>1,257,465</b>	<b>34,039</b>	<b>1,291,504</b>
<b>Excess of revenues over expenses</b>	<b>(15,606)</b>	<b>18,459</b>	<b>34,492</b>	<b>2,893</b>	<b>1,378</b>	<b>1,991</b>	<b>171</b>	<b>43,778</b>	<b>7,815</b>	<b>51,593</b>

## APPENDIX 5 – 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 change to endowment net assets. Income realized from the investment, to the extent it is allocated, is recorded as deferred contributions and recorded as revenue in the periods in which the related expenses are incurred.

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.

3) Collections and works of art: The McMaster Museum of Art has significant collections of works of art and coins. The value of collections has been excluded from the Statement of Financial Position except for a nominal value of \$1. Donations of works of art are recorded in operations as revenue at values based on appraisals and are expensed in the year received. Purchased collections are expensed in the year of acquisition.

4) 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. The current service cost and finance cost for the year are charged to excess of revenues over expenses. The actuarial method of determining the accrued benefit obligations for the defined benefit plans uses the funding valuation method, which reflects the long-term nature of the plans and uses management's estimates of investment yields, salary inflation, benefit cost trends and other factors.

- Remeasurement 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. Remeasurement 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.

5) 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. Investments in publicly traded research entities not subject to significant influence are carried in investments at fair values. Changes in fair values are included in other income. Investments in private research entities are carried in other asset at cost, net of any impairment.

6) Net assets: Net assets are classified as follows:

- Internally restricted: Employee future benefits represent the unfunded portion of pension and other non-pension retirement and post-employment benefits, net of funds set aside to meet estimated future obligations. Other internal reserves, as approved by the Board, include unexpended departmental carry forward amounts for future expenditures or amounts set aside to settle future-oriented obligations.
- Equity in capital assets: Funds invested in capital assets, exclusive of capital assets financed through long-term obligations or deferred capital contributions.
- Internal endowments: Unrestricted contributions including unspent investment income which have been restricted by action of the Board.
- External endowments: External contributions, the principal of which is non-expendable pursuant to the restrictions by the donor, and income retained under the endowment capital protection policy.

7) Endowment capital protection policy: In order to protect the capital value of endowment investments, an endowment capital protection policy limits the amount of investment income allocated for spending to 4%, plus 1% administration spending, and requires the reinvestment of excess income earned (interest, dividends, realized and unrealized capital gains, net of investment expenses). Should endowment spending commitments exceed allocated income, amounts will be drawn from accumulated net investment income balances to fund deficiencies. For endowments without sufficient accumulated investment income, temporary encroachment on capital is permitted where the terms allow. The encroached amounts will be recovered from future investment returns.

## APPENDIX 6 – OPERATING FUND ENVELOPE GROUPINGS

Major areas and depts included in envelopes:

### Activity Units

#### DeGroote School of Business

Accounting and Financial Management  
Executive Education  
Finance and Business Economics  
Health Policy and Management  
Human Resources and Management  
Information Systems  
Marketing  
Operations Management  
Strategic Management  
Research Centres  
McMaster eBusiness 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  
Centre of Excellence in Protective Equipment and Materials  
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  
Interdisciplinary Science  
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  
Gillbrea Centre for Studies in Aging  
Institute on Globalization and the Human Condition  
Centre for Research in Empirical Social Sciences

#### Arts & Science Program

## Support Units

### Academic Support

Provost and Vice-President (Academic) Office  
Equity and Inclusion Office  
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 Operations and Facilities  
Research Communications  
Research Ethics  
Research Finance  
Research High Performance Computing  
Research Office for Administration, Development and Support  
Research Centres  
Accelerator Lab  
Biomedical engineering and Advanced Manufacturing Research Centre  
Brockhouse Institute for Material Research  
Canadian Centre for Electron Microscopy  
Canadian Research Data Centre Network  
Interface: McMaster Institute for Multi-Hazard Systemic Risk Studies  
MacData Institute  
McMaster Indigenous Research Institute  
McMaster Institute for Healthier Equity  
McMaster Institute for Research on Aging  
McMaster Institute for Transportation and Logistics  
Statistics Canada Research Data Centre at McMaster  
Vice-President (Research) Discretionary Fund

### 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  
Legal  
Office of the President  
University Secretariat  
University Technology Services

### Institutional Priorities

Marketing and Branding  
Pension  
President's Strategic Support Fund  
Technology Renewal

### Student Support

School of Graduate Studies  
Student Affairs  
Athletics and Recreation  
Career Planning and Employment  
Indigenous Student Services  
International Student Services  
Student Accessibility Services  
Student Success Centre  
Student Transition and Development  
Student Wellness Centre  
Graduate Scholarships  
Undergraduate Scholarships

## APPENDIX 7 – ACRONYMS

<b>AODA</b>	Accessibility for Ontarians with Disabilities Act	<b>MD</b>	Medical Doctorate
<b>BIMR</b>	Brockhouse Institute for Materials Research	<b>MELD</b>	McMaster English Language Development
<b>BIPOC</b>	Black, Indigenous and People of Colour	<b>MIBI</b>	Multiplex Ion Beam Imaging
<b>BWRI</b>	Brighter World Research Initiative	<b>MILO</b>	McMaster Industry Liaison Office
<b>CEPEM</b>	Centre of Excellence in Protective Equipment and Materials	<b>MIRI</b>	McMaster Indigenous Research Institute
<b>CCRM</b>	Centre for Commercialization of Regenerative Medicine	<b>MIS</b>	Management Information System
<b>COG</b>	Core Operating Grant	<b>MNR</b>	McMaster Nuclear Reactor
<b>COU</b>	Council for Ontario Universities	<b>MPS</b>	Media Production Services
<b>CPA</b>	Chartered Professional Accountant	<b>MREB</b>	McMaster Research Ethics Board
<b>CRC</b>	Canada Research Chair	<b>MSI</b>	Major Science Initiatives
<b>CRKN</b>	Canadian Research Knowledge Network	<b>MUMC</b>	McMaster University Medical Centre
<b>CRM</b>	Client Relationship Management	<b>NFRF</b>	New Frontiers in Research Fund
<b>CV</b>	Curriculum Vitae	<b>NOF</b>	Nuclear Operations and Facilities
<b>DB</b>	Defined Benefit	<b>OAPPA</b>	Ontario Association of Physical Plant Administrators
<b>DSB</b>	DeGroote School of Business	<b>OER</b>	Ontario Electricity Rebate
<b>EDI</b>	Equity, Diversity, and Inclusion	<b>OREC</b>	Ontario Rebate for Electricity Consumers
<b>ERM</b>	Enterprise Risk Management	<b>OSAP</b>	Ontario Student Access Program
<b>FHS</b>	Faculty of Health Sciences	<b>PfAD</b>	Provision for adverse deviation
<b>FWI</b>	Forward with Integrity	<b>PGCLL</b>	Peter George Centre for Living and Learning
<b>GSR</b>	Graduate Student Residence	<b>PRB</b>	Post-retirement benefit
<b>GAAP</b>	Generally accepted accounting principle	<b>PVP</b>	Presidents and Vice-Presidents
<b>HCS</b>	Housing and Conference Services	<b>ROADS</b>	Research Office for Administration, Development and Support
<b>HR</b>	Human Resources	<b>RRSP</b>	Registered Retirement Savings Plan
<b>HSL</b>	Health Sciences Library	<b>RSF</b>	Research Support Fund
<b>HQP</b>	Highly Qualified Personnel	<b>SAG</b>	Student Access Guarantee
<b>IBDQ</b>	Inflammatory Bowel Disease Questionnaire	<b>SANS</b>	Small Angle Neutron Scattering
<b>IF</b>	Innovation Fund	<b>SF</b>	Square Feet
<b>IP</b>	Intellectual Property	<b>SGS</b>	School of Graduate Studies
<b>IPG</b>	Incremental Projects Grant	<b>SMA</b>	Strategic Mandate Agreement
<b>IQAP</b>	Institutional Quality Assurance Process	<b>SPICES</b>	Student Proposals for Intellectual Community and Engages Scholarship
<b>ISS</b>	Indigenous Student Services	<b>UA</b>	University Advancement
<b>IT</b>	Information Technology	<b>UN</b>	United Nations
<b>MA</b>	Master of Arts	<b>UTS</b>	University Technology Services
<b>MARC</b>	McMaster Automotive Resource Centre	<b>VPR</b>	Vice-President Research
<b>MBA</b>	Master of Business Administration	<b>WACC</b>	Weighted Average Cost of Capital
<b>MCE</b>	McMaster Continuing Education	<b>WGU</b>	Weighted Grant Units
<b>MCU</b>	Ministry of Colleges and Universities	<b>WW</b>	Welcome Week





April 2021

TO: University Planning Committee

FROM: Kim DeJ  
(Acting) Vice-Provost, Faculty

Doug Welch  
Vice-Provost and Dean of Graduate Studies

RE: 2018 - 2020 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.

#### 2018 -2019 IQAP CYCLICAL PROGRAM REVIEWS

The following programs were reviewed during 2018-19:

##### Undergraduate Programs

Kinesiology  
Bachelor of Commerce  
Midwifery Education Program  
Indigenous Studies Program

##### Graduate Programs

Kinesiology  
Master of Business Administration (MBA)  
Mechanical Engineering M.A.Sc.  
Mechanical Engineering Ph.D.  
Gender Studies and Feminist Research M.A.  
Gender Studies and Feminist Research G.Dip  
Economics M.A.  
Economics Ph.D.

#### 2019 – 2020 IQAP CYCLICAL PROGRAM REVIEWS

##### Undergraduate Programs

Social Psychology

##### Graduate Programs

Biochemistry M.Sc.  
Biochemistry Ph.D.  
Health Science Education M.Sc.  
Radiation Sciences M.Sc.  
Radiation Sciences Ph.D.

The Final Assessment Reports for the reviews are attached.



## **FINAL ASSESSMENT REPORT**

### **Institutional Quality Assurance Program (IQAP) Review**

#### **Kinesiology – B.Sc., M.Sc., Ph.D.**

**Date of Review: April 23 – 24, 2019**

*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 undergraduate and graduate programs delivered by the Department of Kinesiology. 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 Review**

In accordance with the Institutional Quality Assurance Process (IQAP), the Department of Kinesiology submitted two self-studies, one for the undergraduate program and one for the graduate program, in March 2019 to the Vice-Provost, Faculty and Vice-Provost and Dean of Graduate Studies to initiate the cyclical program review of its undergraduate and 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-studies 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 from Ontario and one internal reviewer were endorsed by the Dean, Faculty of Science and selected by the Vice-Provost, Faculty and 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 23 – 24, 2019. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost, Faculty, Vice-Provost and Dean of Graduate Studies, Associate Dean (Academic), 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 Science submitted responses to the Reviewers' Report (July 2019). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

The reviewers' report was deemed to be extremely positive overall, and it provided a concise and accurate summary of the present state of the unit.

### **Strengths**

The program strengths highlighted included:

- the undergraduate (UG) and graduate program attract excellent students
- excellent researchers within the faculty complement
- outstanding laboratories and the PACE facilities, which facilitate excellent research training and experiential learning opportunities
- collegial culture and transparent system of governance

### **Areas for Enhancement or Improvement**

The areas for improvement are largely reflected in the recommendations listed below, but included:

- an increasing trend of dissatisfaction by undergraduate students owing largely to an inability to enrol in high demand, upper-level courses
- under-resourcing in terms of the capacity for the FTE to deliver the undergraduate curriculum in the medium term (next 3 – 5 years)
- further leveraging the PACE experiential learning opportunities and other revenue-generating efforts

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

<b>Recommendation</b>	<b>Proposed Follow-Up</b>	<b>Responsibility for Leading Follow-Up</b>	<b>Timeline for Addressing Recommendation</b>
1) Monitor GPA and retention rates of undergraduate students given the change in admission requirements	The department will endeavour to monitor retention rates as recommended, as well as incoming admission averages and overall performance metrics as students progress through the program.	Associate Chair (Undergraduate Studies), in consultation with the unit Executive Committee with the Office of the Associate Dean of Science (Academic)	Implement monitoring with first incoming class affected and continue annual monitoring thereafter.
2) Consider recruitment strategies for graduate students,	Recommendation to be considered by unit Graduate Curriculum and Policy Committee,	Associate Chair (Graduate Studies), in consultation with the unit Executive	2018-19 academic year

particularly international students.	which included elected graduate student representatives.	Committee and the Office of the Associate Dean of Science (SGA)	
3) Retain the current budget for CLAs and sessional for another three years	The Chair will seek approval from the Dean to retain the current budget. (A recent request by the unit for a 2-year CLA appointment was recently approved by the Dean and Provost and a search is currently underway.	Chair in consultation with Dean of Science.	Next three years
4) Consider the use of Post-Doc Fellows and effective teachers within the PhD pool of students to increase capacity to offer more upper year courses, thus addressing student demand and reducing upper year class sizes	The department will consider this recommendation with the goal of implementing the suggestions and facilitation opportunities for senior trainees in appropriate circumstances.	Chair, in consultation with the unit Executive Committee and Dean of Science (given potential budgetary impacts), and with input from relevant faculty supervisors.	First consideration in early 2020 as part of initial planning for 2020-2021 curriculum cycle
5) Increase the course weight of the undergraduate thesis from the current 6 units to 9 units	Recommendation to be considered by the unit Undergraduate Curriculum and Policy Committee, which includes elected undergraduate student representatives	Associate Chair (Undergraduate Studies) in consultation with the unit Executive Committees	2019-20 academic year
6) Consider a strategic vertical undergraduate curriculum strand of experiential education	Recommendation to be considered by unit Undergraduate Curriculum and Policy Committee, which includes elected graduate student representatives	Associate Chair (Undergraduate Studies)	2019-20 academic year
7) Revisit the purpose and format of the comprehensive	Recommendation to be considered by unit Graduate Curriculum and Policy Committee,	Associate Chair (Graduate Studies)	2019-20 academic year

examination process	which includes elected graduate student representatives		
8) Consider methods of delivery for graduate level advanced statistical analyses	Review of the issue already has been initiated, and the recommendation will be further considered by the unit's Graduate Curriculum and Policy Committee during 2019-20 year.	Associate Chair (Graduate Studies)	2019-20 academic year
9) Continue growing assessment protocols related to demonstration of practical skills/observations, reflective learning, laboratory sessions and written reports and research papers with either individual or group presentations.	The unit will make every effort to continue growing assessment protocols as recommended in this regard, and develop a strategy to monitor appropriate metrics in this regard.	Associate Chair (Undergraduate Studies)	2019-20 academic year, and ongoing thereafter
10) Conduct and disseminate an equipment inventory	Current equipment inventory lists to be reviewed, updated, and a master list disseminated	Administrator, in consultation with administrative and laboratory staff	2019-20 academic year
11) Consider having the current Chair lead the next academic planning process	The current Chair recently facilitated a unit retreat for faculty and staff (June 2019) and one of the primary objectives was to inform the unit's next academic plan. Given recent direction received from the Faculty, it is expected that the unit's next academic plan will be finalized in early 2020 and thus the process is likely to be led by the current Chair	Chair, in consultation with the Dean of Science and Department of Kinesiology Executive Committee	2019-20 academic year

**Dean's Response, Faculty of Science:**

The Dean notes that the review team report accurately highlights the strengths of the undergraduate and graduate programs in Kinesiology in the Faculty of Science, and in the broader University, as well as the challenges presented. During the period of time leading up to the review, the Faculty of Science experienced very difficult resourcing decisions in many units and approached the subsequent academic and operational issues in an equitable and prioritized fashion. The capacity to address faculty renewal simply did not exist for a number of years and it is now being addressed through a broad consultation process that involves participation of representatives from all academic units in the Faculty of Science.

The course of action the Department has proposed in response to the specific recommendations is appropriate and reasonable, and there are several areas central Faculty and University initiatives are aligning with the action plan developed within the Department of Kinesiology, including continued assessment of space requirements, faculty renewal, and unit level participation in faculty wide finance and academic appointments considerations. With respect to specific recommendations, the Dean would like to highlight that item 7 (consideration of the purpose and format of the comprehensive examination process) is one that is currently being considered by a university committee and the outcomes will likely inform unit level decisions to some degree.

It is noted that the Program level response did not include an implementation plan for the 3 items included in the external report related to program enhancement and potential areas of improvement. These were not specific recommendations and while an implementation plan is not required, the Dean notes that she will work with the unit to ensure that the recommendations to 1. Leverage the PACE, 2. Consider the development of a professional Master's degree, and 3) Consider enhancing the continuing education/professional development offerings, are all included in the strategic planning process that will be undertaken in the 2019-20 academic year.

The academic programs in Kinesiology are clearly excellent and the IQAP process has provided the unit with an opportunity to benchmark their progress and reflect on their programs. The Faculty of Science will continue to provide support to the unit to ensure that the quality is maintained and a focus on improvement and reflection is sustained.

**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 an 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.**



## **FINAL ASSESSMENT REPORT**

### **Institutional Quality Assurance Program (IQAP) Review**

#### **Bachelor of Commerce Program**

**Date of Review: April 22 – 23, 2019**

*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 undergraduate program delivered by DeGroote School of Business. 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), DeGroote School of Business submitted a self-study in April 2019 to the Vice-Provost, Faculty to initiate the cyclical program review of its undergraduate 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, one from Manitoba and the other from Alberta, and one internal reviewer were endorsed by the Dean, DeGroote School of Business 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 April 22 – 23, 2019. The visit included interviews with the Provost and Vice-President (Academic); Associate Vice-President, Faculty, Associate Dean, and meetings with groups of current students, full-time faculty and support staff.

The Associate Dean and the Dean of the DeGroote School of Business submitted responses to the Reviewers' Report (June 2019). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

The review team provided a comprehensive report with actionable recommendations for the Bachelor of Commerce (Honours) Program. The recommendations focus on improving student learning and

student experience. For student learning, recommendations relate to the number of required courses both inside and outside of the faculty as well as processes for better coordination and staffing of courses. For student experience, recommendations relate to the uneven student engagement in the program and extra-curricular activities.

The DeGroote School of Business is very appreciative of the reviewers and their recommendations. DeGroote is in the beginning stages of a B.Com Curriculum Redesign, thus, these recommendations are extremely relevant and timely. The Associate Dean along with the Decanal Team and Student Experience Office will begin working on the implementation of the recommendations over the next year.

#### **Strengths**

- Direct entry for students from high school
- Attracts high quality domestic and international students
- Capable and energized faculty; outstanding support staff
- The faculty provides a wide range of experiential learning opportunities (e.g. internships, case competitions, 24 hour case, career counselling)
- Programs are accredited by external professional/business organizations (e.g., BTM, CHRP, CPA)
- New building under construction will significantly enhance the physical teaching and student engagement environment

#### **Areas for Enhancement or Improvement**

- More emphasis needed on strategically developing online/blended learning courses. The program office should strategically identify courses where online/blended learning will be most useful and then convert courses into this format, and provide financial resources to help instructors make the transition
- More systematic focus on developing general (and discipline specific) data analytics capabilities. Students should be able to create a minor in data analytics, or at least have some systematic exposure to data analytics in their area of expertise
- Be more responsive to new (e.g., digital marketing, sustainability, soft skills) and broader contextual developments in the business environment (e.g., corporate social responsibility, sustainability, entrepreneurship).

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

<b>Recommendation</b>	<b>Proposed Follow-Up</b>	<b>Responsibility for Leading Follow-Up</b>	<b>Timeline for Addressing Recommendation</b>
1. The number of courses students are <u>required</u> to take <u>outside</u> the	The curriculum committee is reviewing the degree requirements as part of	Associate Dean (Academic)	This recommendation is being addressed as part of the B.Com Curriculum Redesign

faculty should be reduced.	an overall B.Com Redesign. The appropriate number of required courses outside of the faculty will be a key discussion point.		Process. The B.Com redesign will be incremental with a goal of major components being implemented within the next 4 years.
2. The number of courses students are <u>required</u> to take <u>inside</u> the faculty should be scaled back.	The curriculum committee is reviewing the degree requirements as part of an overall B.Com Redesign. The appropriate number of required courses inside of the faculty will be a key discussion point.	Associate Dean (Academic)	This recommendation is being addressed as part of the B.Com Curriculum Redesign Process. The B.Com redesign will be incremental with a goal of major components being implemented within the next 4 years.
3. The sequence of courses needs to be reconfigured. Right now students take too many breadth courses and not enough courses in their area of specialization during the first two years of the program.	The curriculum committee is reviewing the program sequencing as part of the overall B.Com Redesign. Discussions will include allowing for more business courses in level 1 and then opportunity for business electives in level 2.	Associate Dean (Academic)	This recommendation is being addressed as part of the B.Com Curriculum Redesign Process. The B.Com redesign will be incremental with a goal of major components being implemented within the next 4 years.
4. Student Engagement is uneven (bimodal with some students engaging extensively in various extra-curricular activities, and some being disengaged). Students could be assigned to cohorts and/or required to engage in at least on additional extra-curricular activity.	The Associate Dean, Student Experience Office, DeGroote Commerce Society and Faculty are collaborating to increase student engagement. Mandatory experiential learning activities have been added to level 1 and will added to level 2. The curriculum committee is addressing student engagement as part of the B.Com Redesign –	Associate Dean (Academic) Student Experience Office DeGroote Commerce Society	New initiatives to increase student engagement will be implemented for level 2 and levels 3/4 students in the 2019/20 school year. Additional initiatives will be created and added over the next 4 years.

	cohorts and other avenues to promote student engagement are being discusses.		
5. There is a need for more formal co-ordination of multiple sections of required classes, sequences of courses in a particular area (e.g. financial accounting), and a more formal plan for how different types of faculty (permanent and non-permanent) are assigned to courses and extra-curricular activities.	<p>The Dean and Decanal Team will work with Area Chairs to provide formal coordination of multiple sections of required classes.</p> <p>In addition, the Areas will be asked to review and report on the sequencing of courses in a particular area, with recommendations and implementation plans for any necessary changes to sequencing.</p> <p>The Dean and Decanal Team will work with the Area Chairs to develop a process for assigning faculty to courses and extra-curricular activities.</p>	Dean and Decanal Team and Area Chairs	<p>The Dean and Decanal Team will work with the Area Chairs over the next 2 years to ensure coordination of multiple section classes.</p> <p>The Dean and Decanal Team will ask the Areas to review and report on the sequencing of courses in a particular area over the next year, with a plan for changes to be implemented over the next 2 years.</p>
6. There are too many departments, and there is need for more tenure track/tenured faculty for the size and complexity of the teaching programs. The number of departments should be reduced substantially.	The Dean will consult with the Provost on the need for more faculty and the number of departments.	Dean	The Dean will consult with the Provost over the next year regarding the number of faculty and departments.
7. The faculty needs more and better data for internal decision making. The faculty should benchmark itself against	DeGroote has hired an analytics officer to provide better data and analysis to support internal decision making. Metrics are being developed and	Associate Dean with Analytics Office and Student Experience Office	The Analytics Officer has been hired. Development of metrics and initial data gathering has begun. The metric development and data

peers/closest competitors on both curriculum and extra-curricular activities	data is beginning to be gathered for all aspects of the B.Com program. This data and analysis will be used for key strategic decisions as well as for benchmarking analysis.		gathering process will continue to evolve to support internal decision making with a goal of the initial key metrics being complete within the next year.
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#### **Dean's Response, DeGroote School of Business:**

The Dean would like to thank the external reviewers and the internal reviewer. Their review was extensive and most helpful to the School going forward.

The comprehensive and actionable assessment of the B.Com program is very timely and valuable as the School begins a curriculum redesign. The Associate Dean (Academic) has addressed the recommendations via the above implementation plan. The majority of the recommendations will provide guidance for the curriculum redesign.

The Dean would like to highlight that recommendation 6 related to the number of departments and need for more faculty will require consultation with the Provost and President. This recommendation is not directly relevant to the B.Com program and thus will be discussed in a broader context and not as part of the curriculum redesign.

#### **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**

#### **Midwifery Education Program**

**Date of Review: April 29 – 30, 2019**

*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 undergraduate program delivered by the **Midwifery Education 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 Midwifery Education Program submitted a self-study in April 2019 to the Vice-Provost, Faculty to initiate the cyclical program review of its undergraduate 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 Executive Vice-Dean, Faculty of Health Sciences 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 April 29 – 30, 2019. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost, Faculty, Vice-Dean, Health Professional Education, Assistant Dean of the department and meetings with groups of current students, full-time faculty and support staff.

The Chair of the department and the Vice-Dean, Health Professional Education of the Faculty of Health Sciences submitted responses to the Reviewers' Report (June 2019). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

### **Strengths**

- Alignment with the McMaster university mission with commitment to research, student experience, tradition of PBL, community engagement, and alignment with indigenous efforts
- Alignment of outcomes between undergraduate Degree Level Expectations and competencies for practice
- Well-defined admission requirements that include the established MMI
- Collaboration with the regulatory body to provide educational opportunities that support expansion of the scope of midwifery and ensure advanced skills are included in curriculum
- Required courses in indigenous health and interprofessional learning
- Contributions to the development of the profession and innovation by creating the McMaster Midwifery Research Centre, interactive e-books, and a continuing education program
- Having a vision to create a Master of Midwifery program and a School of Midwifery Staff who provide critical support to students, faculty, and the Assistant Dean
- Encouragement for students to access to university centres for success, wellness, chaplaincy, and library resources
- Support for students and preceptors through the student workload review, student advocacy group, faculty advisors, communication through website and student and preceptor newsletters, preceptor support team and implementation of practice education coordinator role
- Implementation of new 90-unit BHS degree option for students not able to complete the MEP
- Support for learning with classroom resources, an impressive anatomy lab, and simulation centre
- Clinical experiences are generous, and expectations are published and reviewed regularly
- Assessment measures are appropriate and clearly described in the syllabi
- Graduatd surveys were favorable for readiness to practice, enhanced oral and written skills, quality of course materials and teaching, availability of instructors and fairness of evaluation

### **Areas for Enhancement or Improvement**

- Continue to be sensitive to the relationship with Six Nations in Indigenization efforts including the Facilitated Indigenous Admissions Process to avoid negatively impacting the Six Nations MEP
- Examine the relationship between admission grades in required courses and success in the MEP
- Update the mapping of midwifery core competencies to courses
- Develop an evaluation plan that includes course evaluations
- Include students in website design and increase clarity about staff support roles
- Develop internationalization initiatives in research and leadership in midwifery globally
- Develop faculty and staff complement plan
- Continue to develop continuing education programming

- Develop a plan for financial sustainability
- Identify/implement steps for becoming a school and developing a Master of Midwifery Program
- Clarify role of Assistant Dean with respect to hiring, teaching assignments, and tenure & promotion, and move faculty appointments to one department

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

<b>Recommendation</b>	<b>Proposed Follow-Up</b>	<b>Responsibility for Leading Follow-Up</b>	<b>Timeline for Addressing Recommendation</b>
Continue to be sensitive to the relationship with Six Nations in Indigenization efforts	Continue communications with Educators of Six Nations MEP that respect the Indigenous MEP and support indigenous applicants who choose not to apply to Six Nations.	L Darling	Now and ongoing
Examine the relationship between grades in required courses and success in the MEP	We are currently reviewing of admissions data to look at predictors of success. We are unsure of our ability to link grades for specific courses with long term performance.	L Darling/ S Israr	Now and ongoing
Map course content to core midwifery competencies	Original mapping document (attached) exists but requires updating. Course outlines will be revised to include specific competencies addressed in each (summary attached).	A Malott	September 2019
Develop an evaluation plan for the MEP (including course evaluations, survey and student feedback, and how these are used for program revision)	Develop an internal plan for evaluation. Post information for students regarding the plan in A2L with forms and documents. Communicate relevant details to preceptors (in program newsletter) and students (e.g., in year one orientation)	A Malott/L Darling/ S Israr	September 2019
Involve students in website design	Continue to use student advocacy group to gather student feedback regarding website design and accessibility of resources	L Darling/ S Israr	Ongoing
Increase clarity about staff support roles	"Staff Spotlight" in monthly newsletter where a staff person is featured and describes a situation where they helped a student	S Israr/M Lynch	September 2019 and ongoing



Develop internationalization initiatives that position the MEP as global leaders	Prepare strategies for supporting research and midwifery leadership globally	B Murray Davis/ L Darling	December 2019
Develop faculty and staff complement plan	Develop a plan for growth/replacement of faculty and staff as part of our Diversity Strategy	L Darling/ S Israr	Fall 2019
Continue to develop courses for Continuing Professional Development (CPD)	List of courses has already been developed. Overarching coordination of CPD is being assigned. Course development, coordination and teaching is being organized	B Murray Davis/ A Malott/ K Demers	Now and ongoing
Develop a plan for financial sustainability	We will leverage work being done within Health Science Education to streamline resources	L Darling/ S Israr	Now and ongoing
Identify/implement steps toward becoming a School	Steps have already been identified and are now being implemented	L Darling/ S Israr	Now and ongoing
Identify/implement steps toward development of graduate program	Steps have already been identified and are now being implemented	L Darling/ S Israr	Now and ongoing
Clarify role of Assistant Dean with respect to faculty oversight and move faculty appointments to one department	We will continue discussions to explore options	L Darling	During 2019-2020 academic year

#### **Dean's Response, Faculty of Health Sciences:**

The Vice Dean, Health Professional Education submitted a response as the Dean's delegate.

The Faculty appreciates that the Review Team identified that the many strengths of the program align with McMaster's mission. In particular, the commitment to research, student experience, tradition of PBL, community engagement and alignment with Indigenous Efforts were all highlighted. It was noted that the admission requirements to the program were well defined and there was clear consistency between the undergraduate degree expectations and competencies required for the clinical practice of Midwifery.

As a Faculty of Health Sciences, we are proud of the contribution of the Midwifery program to research in the Faculty, particularly through the creation of the McMaster Midwifery Research Centre. As well as commitment to research, it was clear to the reviewers that the Midwifery Education Program is dedicated to supporting the students in organization of the curriculum, Student Support Services and the teaching resources provided for the students.

The Faculty and Program have carefully reviewed the recommendations for improvement in the report. As with all education programs in the Faculty of Health Sciences, we are sensitive to our relationship with Six Nations, particularly in regard to the admission of Indigenous students to our Health Professional Programs and will continue to work with Indigenous leaders to optimize our processes.

The Midwifery Education program accepts the suggestion of developing a revised mapping document for linking the courses in the curriculum to professional core competencies and this should be available in course syllabi beginning September 2018.

Program evaluation with input from evaluations and student feedback will be revised and improved and efforts made to share details of program evaluation activities with preceptors via the preceptor newsletter.

The program clearly encouraged by reviewers to involve students more in developing the program website. In addition, the Midwifery Education Program newsletter will regularly feature individual staff to outline the role that they play to support students to make it more obvious how each staff position is designed to support and advise students. We note comments in the IQAP report that have identified both fiscal sustainability issues and the desire of the Midwifery Education Program to become a School. Both of these issues are under active discussion in the Faculty as the Faculty of Health Sciences reviews its entire budgeting process. Finally, we will support the Midwifery Education Program, Assistant Dean as the program considers moving all of their faculty appointments into one department and clarifies the role of the Assistant Dean with respect to the hiring of new faculty as well as teaching assignments and Tenure and Promotion.

#### **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**

#### **Indigenous Studies Program**

**Date of Review: February 28, March 1, 2019**

*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 undergraduate and graduate programs delivered by the **Indigenous Studies Program**. 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 Review**

The Indigenous Studies Program submitted a self-study in January 31 2019 to the Associate Vice-President, Faculty to initiate the cyclical program review of its undergraduate 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 member in the program.

Two arm's length external reviewers, both from Ontario and one internal reviewer were endorsed by the Dean, Faculty of Social Sciences, and selected by the Associate Vice-President, Faculty and Associate Vice-President. The review team reviewed the self-study

documentation and then conducted a site visit to McMaster University on February 28th and March 1st 2019. The visit included meetings in the Indigenous Student Services facilities, brief visits to a number of areas including the library and archives, meetings with Indigenous Studies faculty and students and members of the pertinent administrative units.

The Director of the Indigenous Studies Program and the Dean of the Faculty of Social Sciences submitted responses to the Reviewers' Report (August 2019). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

## **Strengths**

In their report (May 2019), the Review team stated that they are very impressed with the program's accomplishments, especially considering its small faculty complement and the practical challenges that developments such as the Calls to Action of the Truth and Reconciliation Commission final report have generated. The reviewers noted the responsiveness to Indigenous community needs and the integration of community-based pedagogies.

The reviewers highlighted the following strengths of the program:

1. Its faculty have exemplary records in terms of both the scholarly work they do, and the rootedness of the faculty in the Indigenous community.

The curriculum delves into most of the topics that constitute the discipline.

2. The program is cognizant of the source of Indigenous knowledge and ensures this is reflected in its pedagogy. Students' community-based learning activities – an integral feature of any Indigenous studies program -- focus mainly on the First Nations proximate to McMaster and involve land-based experiential learning.

The faculty are extremely resourceful in providing current students and alumni with opportunities to acquire research skills through service as research assistants or project officers.

3. The program provides excellent support by virtue of Indigenous Student Services and the facilities it offers students.

## **Areas for Improvement**

The review team had no major concerns but did identify some suggestions for alterations and a few observations of the program as a whole.

- The full-time faculty complement warrants enhancement in order to ensure that students doing an honours thesis receive proper support and also that input from the Indigenous standpoint is provided in the numerous governance forums discussing matters that potentially have ramifications for Indigenous students.
- There is a need to build greater recognition on the part of the ISP faculty members' home departments the breadth and types of activities that constitute Indigenous scholarship, more specifically that it is not limited to academic publications.
- Tenure and promotion criteria need to be made more flexible in order that the kinds of vital research in which ISP faculty engage are recognized.
- While the self-study indicates the Indigenous language resources that have been developed, it does not address the extent of the institutional commitment required if the program is to contribute substantively to the preservation and revitalization of the languages. It does recognize the role of Six Nations Polytechnic with respect to the languages offered there. The commitment required of the ISP is development of a cohesive set of curriculum resources that

give learners the solid foundation in the language(s) concerned that will allow them to continue building on their proficiency. This can be achieved only if full-time faculty complement includes members with the relevant expertise.

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

<b>Recommendation</b>	<b>Proposed Follow-Up</b>	<b>Responsibility for Leading Follow-Up</b>	<b>Timeline for Addressing Recommendation</b>
More courses should be offered in order for students to have greater choice of upper-year electives. The program lists many courses but the number offered is limited.	Adding more faculty members to the Indigenous Studies Program will allow for this.	Director; Dean, Social Sciences	Long term goal
That the program examine the language component of its curriculum in order to determine its principal goal: to introduce cultural traditions, values, beliefs and customs, or to facilitate actual revitalization of the Indigenous languages the program offers.	Indigenous languages are in turmoil. Some languages in Canada now have fewer than 10 speakers who grew up with the language and many of these speakers are elderly. Because of this, most individuals that the Indigenous Studies Program have been able to hire are second language learners. In the future, we will look to hire a faculty member(s) with the relevant language expertise. In the short term, we will adjust the calendar to include a broader area of study to include language and culture.	Director	July 1, 2020
That hiring a mid-career tenured faculty member be strongly considered in order to ensure program delivery and to bridge the gap between the more junior and senior level career faculty members.	The Indigenous Studies Program and the Department of History hired a mid-career scholar July 1, 2018. A memo was drafted on March 1, 2019 to the Dean, Social Sciences outlining the urgency for a need for a second faculty hire. A job ad has been created and the Indigenous Studies	Director, Dean of Social Sciences	July 1, 2020

	Program is in the process of recruiting an established scholar. The appointment will be joint between the Indigenous Studies Program and a relevant department. This position will help respond to our need for more mid-career tenured faculty members.		
That the university move to create a department of Indigenous Studies	The ISP has added a number of junior and senior faculty in the last couple of years with the intent to continue further hires. Additionally, a long term goal would be to move Indigenous Studies from a program to a department.	Director; Dean of Social Sciences	Long term goal
That the space for faculty offices in the L.R. Wilson Hall building area be increased.	Forward this recommendation to Senior Administration	Director; Dean of Social Sciences	Long term goal
That courses in years 2, 3, and 4 of the program be reviewed with the intention of adding relevant prerequisites so that students taking these courses are not burdened by others in the class who do not understand the basics of Indigenous studies.	We adjusted the cross list for this calendar year. The Arts & Science course, 1C03, was previously cross listed with 2MM3 (Research and Methods) and now with 1AA3 to ensure that those students are getting an introductory level understanding.	Director, Staff	July 1, 2019
Given the growth in the program, it is recommended that the ISP, once a department, look at developing a graduate level program.	Similar to recommendation 4, with the continued growth of the program which includes more faculty hires, the creation of a graduate program is an additional long term goal.	Director	Long term goal
That the program director be a tenured faculty member.	For a number of years, junior faculty have taken on a leadership role of the program. A tenured faculty	Director; Dean of Social Sciences	July 1, 2019

	<p>member would not face the added burden of having to juggle the governance responsibilities along with the research demands that are especially pressing for tenure-stream faculty members. As noted in recommendation #3, the Indigenous Studies Program is in the process of recruiting an established scholar which will add to our number of 5 tenured positions (these positions are cross appointed in Indigenous Studies and other disciplines). We are now better situated and have enough tenured faculty where this should no longer be an issue. These positions will help respond to our need for stability in the leadership of the program.</p>		
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#### **Dean's Response, Faculty of Social Sciences:**

Overall, the review team provides a highly positive assessment of the program and particularly praised the commitment and scholarly records of our Indigenous faculty, the strong community orientation of the ISP, the integration of Indigenous knowledge and ways of knowing, and the space in Wilson Hall, and the services available to Indigenous students.

The review naturally also identified areas for improvement, and made a set of specific recommendations in this regard. The Program's response outlines specific steps that it will take in response to these recommendations. Below I offer some comments on each of the major recommendations and on the program's response to the recommendation.

**That more courses be offered in order that students have a greater choice of upper-year electives. The program lists many courses but the number offered is limited.**

This can be addressed in a few ways. One is recruitment of additional Indigenous faculty into the ISP. For instance, the ISP is recruiting a new faculty member (with rank open) this year with an expected start of July 1, 2020. A second is the recruitment of Indigenous faculty to other Faculties at McMaster as part of McMaster's overall commitment to expand the complement of Indigenous faculty. Although much of their teaching will be in the specialized area associated with the Faculty/Department of appointment, in some cases an affiliation with the ISP would be of interest and they may be keen to deliver an upper-

year course suitable for the ISP. Finally, given the community focus of the ISP, in some cases it would be desirable for a knowledgeable Indigenous community member to present a course within the ISP (as already occurs). As Dean I am more than willing to work with the ISP to pursue all these strategies so as to strengthen the upper-year offerings within the program, which will only grow more important as enrolment expands.

**That the program examine the language component of its curriculum in order to determine its principal goal: to introduce cultural traditions, values, beliefs and customs, or to facilitate actual revitalization of the Indigenous languages the program offers.**

This recommendation implicitly includes two components. The first is to examine the curriculum to be clear about the goal of the language component of the ISP. This seems especially important given the close proximity of Six Nations Polytechnic and its language programs. The second is to design the curriculum (and ensure faculty resources) to achieve this goal. The two are linked: while one wants to be aspirational, it makes no sense to set a goal that is not achievable given the various constraints on the curriculum and resources. I, along with my Associate Dean-Academic, will work with the ISP faculty to support this examination and help ensure that the ISP's curriculum and resources are adequate to achieve the goal.

**That hiring a mid-career tenured faculty member be strongly considered in order to ensure program delivery and to bridge the gap between the more junior and senior level career faculty members.**

As the program response notes, the ISP recruited a new faculty member at the level of Associate Professor effective July 1, 2018, and the ISP program is undertaking a recruitment for an appointment at an open rank to start July 1, 2020. The intention is to hire at the level of Associate or Full Professor. The Indigenous scholars at McMaster are currently engaged in a strategic planning exercise that will include an analysis and recommendations regarding the complement of Indigenous faculty at McMaster. This planning exercise can consider this recommendation as part of its deliberations.

**That the university move to create a department of Indigenous Studies.**

Given the goals and interdisciplinary, inter-faculty nature of the ISP, creation of a Department of Indigenous Studies not surprisingly has advantages and disadvantages. These would have to be weighed carefully by the Program faculty in particular. Further, such a recommendation has to be placed in the broader university vision for Indigenous programming and activities, and any such decision would involve the Provost and other senior decision-makers. Again, it would appear appropriate that this recommendation be considered as part of the Indigenous strategic planning exercise currently underway.

**That the space for faculty offices in the L.R. Wilson Hall building area be increased.**

Space is at a premium within the Indigenous Centre, which houses both the ISP and the Indigenous Student Services (ISS). We have been looking this past year at how we can organize people and activities in a way that makes better use of the current space. Options are limited for expanding space contiguous to (or even near) their current location in Wilson Hall. The Faculty and the Assistant Vice-President Student Affairs will work with the ISP and the ISS to address space challenges for these units.



**That courses in years 2, 3 and 4 of the program be reviewed with the intention of adding relevant pre-requisites so that students taking these courses are not burdened by others in the class who do not understand the basics of Indigenous studies.**

This issue has been flagged by Indigenous students for the last few years as interest and enrolments in ISP courses have grown. The program has already made an adjustment to the curriculum that will help address this problem.

**Given the growth in the program, it is recommended that the ISP, once a department, look at developing a graduate level program.**

Creation of a department and creation of a graduate program raise different issues and challenges, and offer distinct advantages to students and Indigenous faculty. I would uncouple them: it is possible to create a graduate program without first becoming a department. Working with my Associate Dean, Graduate Studies, I would be happy work with Indigenous faculty to examine this recommendation. We have exceptional Indigenous scholars at McMaster and the desire to work with graduate students is understandable. Two things suggest that timing of any such expansion would be important. As emphasized by the review, faculty resources are already a challenge for delivering the undergraduate program alone. While further investment as described in this response can address this, one would want to ensure that creation of a graduate program would not over-burden Indigenous faculty or compromise the undergraduate program. Second, provincial funding for graduate students at McMaster is currently capped, so creation of a new graduate program would not attract associated new funding.

**That the program director be a tenured faculty member.**

With the relatively small complement of Indigenous faculty, the last few years have been particularly challenging for filling the Directorship due to the configuration of research leaves and other demands. The university has recently recruited a tenured Indigenous faculty member, the ISP is currently recruiting a new faculty member to an open-rank position with the intention to hire at the rank of Associate or Full Professor, and some current members will naturally progress to tenured status in the near future. The strengthening of the complement and career-stage of Indigenous faculty at McMaster should enable the appointment of tenured faculty members to the directorship in the future.

#### **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**

#### **MBA (Full-Time) and MBA with Co-op Programs**

**Date of Review: May 23 and 24 2019**

*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.B.A. 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 M.B.A. program submitted a self-study in March 2019 to the Vice-Provost and Dean of Graduate Studies to initiate the cyclical program review of its 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 Business 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 May 23<sup>rd</sup> and 24<sup>th</sup> 2019. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost and Dean of Graduate Studies, Associate Dean, Graduate Studies and Research, Director of the program and meetings with groups of current students, full-time faculty and support staff.

The Director of the program and the Dean of the Faculty of Business submitted responses to the Reviewers' Report (July 2019). Specific recommendations were discussed, and clarifications and corrections were presented. Follow-up actions and timelines were included.

- **Strengths**

- The Co-op MBA is a unique and highly successful flagship program for DeGroote and difficult to imitate.
- The Health Sciences specialization represents an area of strength and high reputation for McMaster University and DeGroote
- An exceptionally competent staff manages the recruitment, placement, and preparation processes for both Co-op and FT MBA programs, with impressive outcomes given the increasing number of international students who must be placed.
- There is a high level of community engagement by students, particularly in the Co-op MBA program.
- Overall, students expressed satisfaction with their experience in the MBA programs, particularly in the Co-op program and particularly related to the activities of the Student Experience office.
- The integrated first year curriculum was designed to address the relative inexperience of Co-op students (but it is not clear how successful the integrated courses have been).

- **Areas for Enhancement/Improvement**

- The governance of the MBA program should be changed to empower the MBA Program Director, in consultation with the Program Development Committee, to ensure success of the program. Changes should include giving the MBA Program Director a say in the hiring of MBA instructors and providing financial resources to entice the best instructors to teach in the MBA program.
- The number of full-time, tenure-track, research intensive faculty who teach in the MBA programs should be increased.
- The integrated courses (in the first semester) should be re-evaluated and more effort and resources should be placed into designing new program-specific integrated courses with clearly articulated learning goals, particularly for the Co-op MBA, as well as developing an integrative pedagogical culture among instructors.
- MBA and MBA with Co-op students should have different and separate core courses and MBA (FT) students might not require integrated courses.
- Both MBA and MBA with Co-op programs should be streamlined by reducing significantly the number of specializations and eliminating electives with small enrolments (freeing up academic resources to teach core courses). Suggested specializations are “General MBA”, “Finance”, and “Health Services Management”.
- To meet the program learning goal of providing students with a “global perspective”, courses should be offered in managing and understanding diversity and international business strategy.
- Recruitment staff should be better integrated into admission decisions.

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

<b>Recommendation</b>	<b>Proposed Follow-Up</b>	<b>Responsibility for Leading Follow-Up</b>	<b>Timeline for Addressing Recommendation</b>
Empower MBA Director and provide additional resources	Give MBA Director say in and veto over instructor assignments for MBA courses; Provide additional resources to incentivise teaching MBA courses and require certain FT instructors to teach some MBA courses	Associate Dean (Faculty Affairs & Accreditation) in consultation with Dean of the DeGroote School of Business	Fall, 2019
Increase the number of full-time, tenure-track, research intensive faculty teaching in the MBA program	Require certain FT, tenure-track faculty to teach some MBA courses and hire tenure-track faculty expressly for MBA teaching	Dean of the DeGroote School of Business	Over next five years
Re-evaluate/redesign the integrated courses in the first semester	a) Short-term: Bring together core instructors for planning meetings to facilitate better integration of core curriculum, in consultation with Area Chairs b) Long-term rethinking and redesign of integrated courses	a) MBA Program Director b) Associate Dean (Graduate Studies & Research) and MBA Program Director in consultation with the Dean of the DeGroote School of Business	a) Fall, 2019 – short term improvements in integration b) Fall, 2021 – long-term redesign
Separate core courses for MBA and MBA with Co-op students, possibly eliminating integrated courses for MBA program	Determine the feasibility of having separate core courses <u>or</u> separate cohorts, and of eliminating integrated courses for MBA (FT)	Associate Dean (Graduate Studies & Research) and MBA Program Director and Senior MBA Administrative Staff in consultation with the Dean of the DeGroote School of Business	Fall, 2021
Streamline MBA programs by reducing significantly the	Reduce the number of specializations based on student	Associate Dean (Faculty Affairs & Accreditation) and	Fall, 2020

number of specializations and eliminating electives with small enrolments	enrolment data and eliminate low-enrolment courses	MBA Program Director in consultation with the Dean of the DeGroote School of Business	
Offer courses in "Managing and Understanding Diversity" and in "International Business Strategy"	a) We currently offer a required course, P700 (Business, Government and the Global Environment) which we will review to ensure a higher level of international content; b) We will explore the possibility of offering an elective course in "Managing and Understanding Diversity"; c) We are in the process of encouraging instructors to increase the number of global cases used and global content in other MBA courses.	MBA Program Director with the MBA Program Development Committee and relevant Area Chairs in consultation with the Associate Dean (Graduate Studies & Research)	Fall, 2020
Better integrate recruitment staff into admission decisions	As of June, 2019, recruitment staff are included in admission committee meetings and have a voice in the admission decisions (although, previously, their written recommendations were reviewed and taken into consideration in making admission decisions)	MBA Program Director	Already in place

### Faculty Response

The review team indicated several strengths for the MBA program reflecting the school's commitment to this program with its different streams. The team also outlined several recommendations to further enhance the program. The program has addressed these recommendations in their response with a detailed action plan.

The Dean addressed three of the recommendations:

- The recommendation of considering designing separate core courses for co-op and full time students may result in allowing us to better cater to the needs of each of these groups and help reduce the negative perceptions of full-time students as being secondary in importance. However, given that the full-time program is mostly subscribed by international students, this separation will negatively impact the desire of international students to interact with domestic students. It would also reduce the exposure of our domestic students to global perspectives that international students are able to bring to the table. There are also obvious teaching capacity implications for such a move.

Careful consideration would have to be given, therefore, to the pros and cons of moving in this direction.

- The recommendation to significantly reduce the number of specializations to free academic resources based on student enrollment has been actively pursued at the school for some time now and has already resulted in cancelling several specializations. The Faculty will continue their efforts in that direction. However, the business analytics specialization has only become active recently and, as such, more time is needed to assess its viability.
- The recommendation that serious consideration be given to including courses on managing and understanding diversity and international business strategy is in line with the increasing globalization of business and the rapid growth in the international composition of our student body. It is not clear from the recommendation whether these courses should be required or elective courses. Adding required courses to the curriculum would necessitate the replacement of existing required courses or a reduction in the number of elective courses available to students. Such a change in curriculum requires further consideration and consultation with various stakeholders. It should be noted that efforts are underway to increase the global content of our required capstone policy course, P700 (Business, Government and the Global Environment), and the global content in other required as well as in elective courses. The Faculty will also explore interest in a new elective course in Managing and Understanding Diversity, in addition to the existing elective course International Financial Management.

#### **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 an 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.**

## **FINAL ASSESSMENT REPORT**

### **Institutional Quality Assurance Program (IQAP) Review**

#### **Mechanical Engineering (M.A.Sc. and Ph.D.)**

**Date of Review: February 26 and 27, 2019**

*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 Mechanical 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 Department of Mechanical Engineering program submitted a self-study in January 2019 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 February 26<sup>th</sup> and 27<sup>th</sup>, 2019. 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, 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 2019). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

## Strengths

The Reviewers determined that there were three areas of strength in the Mechanical Engineering graduate program: (i) Quality of the Faculty and Training, (ii) Learning Environment and (iii) Institutional Support. Most faculty have active research programs with healthy funding and productive research dissemination. The research facilities were found to be excellent and conducive for performing leading edge research in a broad range of areas in mechanical engineering. One point of note was that the research environment was collaborative, which fostered multidisciplinary research projects, many of which are supported by industry. The students were found to be satisfied with the quality of their training and pleased with their choice of institution for their graduate program. The reviewers found a high level of institutional support for the graduate program, including continuous improvements to student welfare, including seating and quiet spaces for study. The department has been successful in hiring several female faculty members in the last five years which has significantly improved the gender balance of the faculty.

## Areas for Enhancement or Improvement

While the Review Team concluded that “there were no major challenges to the success of this unit”, six areas for enhancement were identified: (i) Graduate Courses, (ii) PhD Comprehensive Examination, (iii) Student Space, (iv) TA duties, (v) Domestic Graduate Student Recruitment and (vi) International Focus. The availability of relevant courses, especially for doctoral students who have completed their MASc at McMaster was found to be limited. The PhD comprehensive exam was found to be a point of contention with graduate students, especially the assignment of the subject areas for examination. While graduate students expressed overall satisfaction with their Teaching Assistant experience, the lack of feedback on their performance was a concern. The difficulty of recruiting domestic students to the PhD program was of particular concern.

## 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
<b>PhD Comprehensive Exam:</b> (i) Re-examine objectives and ensure current examination format is meeting objectives and (ii) Split examination into two parts, taken at end of Year 1 and half way through Year II.	The department will re-examine the objectives of the PhD Comprehensive Exam. The exam format of other Engineering Departments at McMaster and Mechanical Engineering units in other universities will be reviewed. Potential revised formats are: <b>(i)</b>	Associate Chair (Graduate Studies)	These proposals will be discussed at the departmental retreat in May 2019 for faculty feedback. The graduate curriculum committee will re-examine the PhD comprehensive exam and develop any necessary changes over the academic year 2019/20 for approval



	Develop a set of core subject areas from which student will pick two (relevant to their research and approved by their supervisor) to be examined for Part A. Complete Part A between 8 to 12 months of start of program. Complete Part B (Research Proposal) between 18 to 24 months of start of program. <b>(ii)</b> Remove Part A of the comprehensive exam and keep only Part B. Expand Part B to include two topic areas related to the research that the student will be orally examined on.		by the department and implemented in 2020/2021.
<b>Course Offerings:</b> Examine ways to offer more flexibility to Ph.D. students in terms of course selection.	Current regulations require that 50 percent of the courses must be from the home department. Unfortunately, this cannot be waived by School of Graduate Studies. To alleviate this, and provide more flexibility in courses, the department has recently (2018/19) cross listed several courses from ECE, Chem Eng, SEPT, and Materials as Mech Eng Courses. Additional courses from other departments have been identified to be useful to our students,	Associate Chair (Graduate Studies/Graduate Administrator)	Additional relevant graduate courses from other departments for cross listing as MECH ENG courses will be submitted to GCPC for approval in the academic year 2019/2020. This will provide a wider range of courses for PhD students, especially those working in multidisciplinary areas, and will address the 50 percent home department course rule.

	and will be cross-listed in the next academic year.		
<b>Department Weekly Seminar Course (ME758):</b> (i) Revisit format to increase number of presentations on general topics and (ii) Re-evaluate attendance criteria for fulfilling course requirements.	Students are provided with the option of presenting their own research or on a general topic in engineering. The department will solicit input from the graduate student body on the format of the presentations. The procedure for missing a seminar is announced at the beginning of each semester, posted on the department website, on the A2L course site and on the weekly announcements that are also posted on the course site and circulated by email to all graduate students.	Associate Chair (Graduate Studies)/Graduate Administrator	The procedure for missing a seminar will continue to be announced at the beginning of each term, highlighted on the department website and in both the weekly email to the students and on the A2L announcements. Graduate student and faculty feedback on the seminar format will be solicited over summer 2019. This is also an agenda item at the Department Retreat in 2019. Any changes resulting from this review will be implemented in the academic year 2019/2020.
<b>Incoming Students in Winter and Spring Semesters:</b> Provide better orientation information to incoming students starting in January and May of each academic year.	Currently, the Graduate Administrative Assistant provides individual orientations to incoming January and May Grad students, upon arrival. The process will be formalized with a scheduled orientation session for all incoming students in January and May of each year. This will not supersede the orientation events organized by the Department and	Associate Chair (Graduate Studies)/Graduate Administrator	A formal spring orientation will be held for incoming students in May 2019. This will be continued in January and May of each year. Students attending this orientation will also be invited to attend all orientation events that are held in September of each year.

	University in September of each year.		
<b>Student Space:</b> Continue survey of student space usage and plans for room renovations and expansion of student space into new Engineering tower and determine equitable solution.	JHE313 was completely refurbished in 2018 with seating for 19, hotel style. In addition, JHE326 was refurbished and repurposed as a computational graduate room with assigned desks for 12 grad students. JHE311 will be refurbished in summer 2019. Graduate student input on the layout for JHE311 will be incorporated into the design. Evaluation of student space will be an on-going activity to meet anticipated increase in graduate student enrolment.	Ms. Leslie Kocis, Administrator	Consultation with Graduate Students, coordinated through the Grad Student Representative, is underway. The design of the room layout will be finalized and refurbishment of JHE311 will be done over Summer 2019.
<b>TA Duties:</b> Provide feedback on TA performance.	Currently, the Course Instructor meets with each TA at the beginning of each semester to complete the TA Hours of Work form and a Department implemented "TA Expectations" form. The latter outlines the responsibilities and expectations of the TA and the Course Instructor. An exit meeting between the Instructor and the TA will be formalized at the end of the course (after the course	Associate Chair (Graduate Studies)/Graduate Administrator	The TA exit meeting form will be developed during the summer 2019. The exit meeting between the Course Instructor and the TA will be implemented in the academic year 2019/2020.

	evaluations are received) to complete the loop. A TA evaluation form will be developed to facilitate feedback on the TA performance. Any specific comments from the students pertaining to the TA in the course evaluation form will be conveyed to the TA.		
<b>Domestic PhD Graduate Student Recruitment:</b> Consider recruitment of PhD domestic students by way of a five-year combined Bachelor-Master program.	An ad hoc department committee will be formed to determine the feasibility of a five-year combined Bachelor-Master program. The committee will also, additionally, develop other strategies on improving domestic PhD student recruitment.	Chair	The committee will be formed in Spring 2019, and perform the study in the academic year 2019/2020. The committee will present their findings at the Departmental retreat in 2020 for action.

### Dean's Response, Faculty of Engineering

The reviewers in their assessment of the Department of Mechanical Engineering found it to be a research powerhouse, well-structured in its curriculum and well run. Its strengths include its innovative and excellence in research, its multidisciplinary collaborative projects, good student morale, recruitment strength, and healthy gender balance. The Dean was pleased to see such a complementary assessment and aimed to help the Department with the helpful recommendations provided.

In the series of recommendations made in the report, the majority are seen as minor changes (in the words of the reviewers) and will be beneficial to the student experience. Re-evaluating comprehensive examination procedures is valuable every few years. The Dean noted the need to see better incorporation of the principles of equity and inclusion throughout the academic landscape, and comprehensive examinations are repeatedly becoming a point where issues arise frequently. The department may find their procedures are adequate, but the Faculty is very supportive of them taking a fresh look at its layout. Flexibility in course selection is a challenging issue in the face of Graduate Studies regulations that the Faculty understands well and is continually looking for creative solutions.

The Dean is highly supportive of an interdisciplinary curriculum and recognize the strength of the Department of Mechanical Engineering in this area. This is a point where the Associate Dean may be helpful and will be able to assist the Associate Chair, Graduate of the Department in addressing the program's vision. Student space is a continual issue with the Faculty's ever-growing graduate population, but with new available space in a soon-to-open engineering building, some of this stress should be alleviated and the Faculty will continually try to allocate funds over time to re-fresh their current spaces. The Faculty sees opportunities to support and help the Department in fostering international collaborations/exchanges so long as domestic recruitment remains the priority for the Department's graduate programs. The accelerated Master's degree that the Department is considering is already in use in several departments within the School of Engineering and Applied Sciences and the Faculty can link the leadership in the Department of Mechanical Engineering with the other programs to gain advice on how to effectively implement. The Dean pledged to continually work with the Department on these aspiring changes.

### **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 an 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.**

## FINAL ASSESSMENT REPORT

### Institutional Quality Assurance Program (IQAP) Review

#### Gender Studies and Feminist Research (M.A. and Ph.D. Graduate Diploma)

**Date of Review: April 10<sup>th</sup> and 11<sup>th</sup>, 2019**

*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 Gender Studies and Feminist Research. 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 Gender Studies and Feminist Research program submitted a self-study in February 2019 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 Humanities, 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 10<sup>th</sup>-11<sup>th</sup>, 2019. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost and Dean of Graduate Studies, Associate Dean, Graduate Studies and Research, Director of the program and meetings with groups of current students, full-time faculty and support staff.

The Acting Director and the Dean of the Faculty of Humanities submitted responses to the Reviewers' Report (July and August 2019). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

- **Strengths**
- **Faculty Excellence:** "Passionate scholars who are experts in their research fields and in pedagogical innovation, as evidenced by, for example, peer-reviewed publications (books, edited collections, journal articles, etc.), teaching awards, internal and external grants, journal editorial work, leadership positions with research centres, and national and international research dissemination through conference presentations and keynote and invited lectures" (p. 2).

- **Transdisciplinarity:** “The program’s clear commitment to transdisciplinarity, creativity, and continual self-reflective engagement. Despite limited resources and institutional obstacles, the program’s teaching and research attempts to span the Humanities and Social Sciences (and with the occasional course in Health Sciences too), with classes and scholarship that challenge assumed barriers between these fields. Classes and the IRP encourage both conventional and creative engagement with the ideas, and the courses emphasize introspection and self- critique.”
- **Community Engagement:** “The integration of community engaged work and experiential learning within the program. For example, the “Knowledge in Action” course connects abstract theories and debates to hands-on learning through the assigned community work. At the same time, the course problematizes the history and the notion of community engagement, thus continually challenging students to both “be the change you want to see” while always self- reflecting on the limitations and ideologies that can affect social justice and equity-oriented work” (p. 2).
- **Commitment to Equity, Diversity, and Inclusion:** “The program’s connections to the broader university mandate to promote access, equity, diversity, and inclusion, and the faculty’s service work around this. As stated in section 3.0 of the Strategic Mandate Agreement, there is a clear institutional commitment to supporting efforts to increase equity and access at McMaster. The program’s faculty, courses, research, internal policies, and community-building--both within the university and between the university and the wider Hamilton region--clearly supports this goal. Indeed, the program is a vital source of knowledge and inspiration for understanding and strengthening access and equity commitments on a theoretical and substantive level” (p. 2).
- **Areas for Enhancement or Improvement**
- **Faculty Complement:** “As was evidenced by the self-study and the interviews with faculty, students and upper administration, there is an urgent problem with insufficient faculty to address the needs of the program that must be addressed quickly” (p. 2).
- **Equity and Diversity:** “As noted in the self-study, and elaborated upon during interviews with faculty and students, there is a lack of diversity among the core faculty in relation both to equity factors (for example, there are no appointed faculty who are Indigenous, Black or people of colour), and in relation to expertise of the appointed faculty, which is concentrated within the Humanities (in particular English and Cultural Studies, and Communication Studies and Multi-Media Arts). Though the possible electives are diverse, they are limited in quantity, are still disproportionately concentrated in the Humanities, and are sometimes offered inconsistently” (p. 2-3).
- **University Structures, Budget and Siloing:** “The university structure and budget model have created barriers to sharing resources and cross-appointments across faculties. This forces the director to continually expend time and energy every year negotiating with deans and faculty to piece together sufficient teaching staff and resources to run the program” (p. 3).
- **Visibility/Promotion:** “The commendable success of the program could be further promoted within the broader university, in particular the Research Symposium and the community engagement component” (p. 3).

Recommendation	GSFR Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing
<b>1. Urgent need for faculty replacement and expansion, given retirements in the current year and near-future.</b>	<b>GSFR agrees.</b>  GSFR will work with Dean Humanities to discuss possibilities of securing a GSFR hire and temporary cross-appointments;	<b>Acting Director/Director</b>	<b>Immediate/Medium-Term</b>



<p><b>1.a. One dedicated hire</b> that addresses program concerns about faculty diversity</p> <p><b>1.b. Location:</b> This new position, should be housed in GSFR, and if it is a cross-appointment, should be housed in GSFR as the “home” unit, with service and tenure and promotion decisions being well delineated as lying within the GSFR program</p>	<p>and <b>with</b> VP EDI, and BIPOC Group.</p> <p><b>1.a.</b> GSFR will request a hire from the Dean Humanities.</p> <p><b>1.b.</b> A new hire could be undertaken in GSFR in collaboration with various other university initiatives, such as EIO, BIPOC/ EDI developments. Acting Director will discuss possibilities with Dean Humanities.</p> <p>GSFR should take the lead in developing a job ad and hiring process for a new hire, in collaboration with other department(s); teaching and service duties should lie primarily within GSFR.</p>		<p><b>1.a., 1.b. Medium Term:</b> Acting Director to meet with Humanities Dean in Summer and Fall 2019. Further discussions to ensue.</p> <p>Conversations/decisions are contingent upon other more immediate securing of resources— e.g., the “temporary cross-appointments”, along with longer-term planning for the program and its possible transformation.</p>
<p><b>1.c. Temporary cross-appointments:</b> Implementing a structure to create temporary cross-appointments of faculty members from other departments and</p>	<p><b>GSFR agrees.</b></p> <p>This would help solve immediate needs, as well as ensuring future stability.</p> <p>GSFR will work with Dean Humanities in</p>	<p><b>GSFR Acting Director, Dean Humanities</b></p>	<p><b>Immediate</b></p> <p>Course management begins in November 2019; plans to offer 2020-21 courses should be in place by December 2019.</p>

<p>Faculties for a duration of 3-5 years, during which a faculty member's teaching and service would be spread across two (or more) units....These new positions would stabilize the faculty complement and curriculum/course offerings, expand on electives, and strengthen ties and connections to other units on campus; this is an especially exciting possibility for growing resources if the program decides to reorganize into a broader institute structure (p. 9)</p>	<p>collaboration with various Chairs/Directors with whom temporary cross-appointments could be made. Ideas include Philosophy, ECS, CSMM, IGHC and various Social Sciences programs, etc., and further developing EDI/BIPOC initiatives.</p> <p>GSFR and Dean Humanities should identify the appropriate number of cross-appointments, duration, and location, which would solidify the next three years of GSFR.</p>		<p>GSFR Acting Director will meet and consult with Dean Humanities and other Chairs in Summer into Fall of 2019, and beyond as necessary.</p>
<p><b>3. Clarify Faculty Relationships:</b> There is an urgent need to clarify the relationship between the Humanities and Social Sciences Faculties in order to strengthen connections in terms of both faculty and curricular resources; ensure the easiness of crossing existing Faculty and disciplinary</p>	<p><b>GSFR agrees.</b>  This recommendation will facilitate deep interdisciplinarity, working towards structurally de-siloing faculties and departments that need the freedom and flexibility to deliver a truly interdisciplinary program such as GSFR.</p>	<p><b>Dean Humanities, Dean Social Sciences, Provost, in collaboration with GSFR Acting/Director and other Chairs/Directors</b></p>	<p><b>Medium-term to Long-term</b>  Conversations about sharing resources can follow with Dean Humanities' assistance in working with Social Sciences and other faculties to secure "temporary cross-appointments" noted in 1.c.</p> <p>Timeline for this must coincide with timelines</p>

boundaries (p 10);	Some of the formalities of an arrangement depend on long-term planning for GSFR.		exploring Recommendations 5 & 6.
<b>4. Develop 400/600 Courses:</b> We recommend that the program explore the creation of 400/600 cross-level courses, which will have the benefit of increasing elective options for Masters students while also building the profile of the undergraduate minor, and thus priming it for future growth (p 13)	<b>GSFR agrees.</b>  GSFR acknowledges that this recommendation would speak to providing more electives, and building the profile of the minor, and is open to the possibility if there are no administrative impediments.  GSFR is excited to re-introduce a WMST fourth-year course to strengthen the minor as well as contribute to the grad program and any development of new program(s)	<b>GSFR Director, in consultation with GSFR Executive Committee.</b>	<b>Immediate</b>  As undergraduate curriculum submissions are required in September 2019, GSFR Executive will discuss this possibility alongside other minor curriculum changes. Summer 2019/September 2019 GSFR Exec will meet, will consult with Advisory and potential instructors
<b>5.a. Visioning: Undergraduate Program in Social Justice:</b> Consider the idea of (re)establishing an undergraduate major focused on identity and social justice (p	<b>GSFR agrees.</b>  Exploring a broadened undergraduate program in EDI/social justice is very appealing.	<b>GSFR Director in consultation with Executive and Advisory Committee; Dean Humanities; Assistant Dean Humanities; Director Peace Studies; VP</b>	<b>Medium-term</b>  AY 2019-20 should find opportunities to engage in visioning exercises to profile WGS/GSFR at both levels as a way of potential transformation into

13)	GSFR Acting Director will meet with Dean Humanities to discuss possibilities. GSFR Exec and Advisory Committee will meet in Fall to begin “visioning exercises”	<b>EDI; BIPOC group</b>	new program.  Conversations should start immediately and unfold organically and appropriately.
<b>5.b. (implied in 6.b.)</b>	<b>5.b.</b> Developing a new undergraduate program should be met with faculty release time and additional administrative support.		<b>5.b.</b> Course release and administrative support should be provided as soon as possible.
<b>6a. Visioning: Research Centre, Institute, and/or Broader MA Program</b> With the existing intersectional commitment of the program, the evolution of WGS departments, and the increasing societal interest in social justice and equity issues, we suggest time and resources be dedicated to a revisioning exercise, for the purpose of seriously considering a reorganization and potentially renaming of the program: for	<b>GSFR Agrees.</b>  Visioning around both the grad (6.a.) and undergrad (5.a.) programs, and whether to create a centre or institute, will be an exciting opportunity to reflect on and consider broader coalitions, structures, and partnerships.	<b>GSFR Director, in collaboration with Executive and Advisory Committee; Dean Humanities, and numerous stakeholders (including, at least, VP EDI, Provost, Dean Social Sciences, Associate Dean Grad Studies &amp; Research, Humanities)</b>	<b>Immediate to Medium-Term</b>  GSFR Acting Director to discuss with Dean Humanities in Summer 2019. AY 2019-2020 should include a series of visioning exercises within GSFR, and external meetings with other stakeholders. Depending on outcomes, proposals for program changes to be solidified in AY 2020-2021.  <b>6.b.</b> Course release and administrative support should be provided as soon as possible.

<p>instance, as the self-study proposed, leveraging the new Equity and Inclusion office to rethink how to articulate GSFR's work. This process would include research and consultation to consider and potentially realize the idea of an institute and/or program that encompassed a broad range of issues and lenses, which may include social justice, equity, feminism, intersectionality, and diversity in its title and/or mandate.</p>			
<p><b>5b/6b: Support for Visioning:</b> We recommend that a faculty member is given release time and resources to accomplish this [visioning] work (p 7).</p>	<p>6.b. GSFR agrees with the reviewers that this visioning process will involve much work: visioning and consultation within GSFR, consultation with stakeholders, seeking collaborators, discussions with senior administrators, seeking and assessing feedback, program/curriculum development – will necessitate</p>		

	additional course release for the Director or Leader, as well as additional administrative staff support.		
<p><b>7. Recognition &amp; Promotion:</b></p> <p>Given the program’s contribution to research and teaching excellence and community building, we recommend stronger institutional recognition and promotion. GSFR models many of the Principles and values laid out in the Strategic Mandate Agreement and the “Forward with Integrity” letter and has innovative graduate programming, e.g., “Knowledge in Action” course; Research Symposium, that deserves to be more widely recognized (p 16)</p>	<p><b>GSFR Agrees.</b></p> <p>Reviewers noted that GSFR was the first program to offer an experiential-based graduate course, and also noted the absence of celebration of that fact in the wider community.</p> <p>GSFR Director, Instructors, and Administrative Staff; office of Associate Dean Grad Studies and Research, to raise the visibility of GSFR’s unique contribution to experiential education.</p> <p>GSFR Director, Instructors, to work with Community Engagement Office to help showcase our work and/or to share successes in CE workshop</p> <p>GSFR Director, Instructors—work with McPherson –</p>	<p><b>GSFR Director, Instructors, and Administrative Staff; in collaboration with office of Associate Dean Grad Studies and Research; Community Engagement Office; McPherson Institute</b></p>	<p><b>Immediate</b></p> <p>AY 2019-20 should end with more widely publicized recognition; showcasing GSFR work and expertise</p>

	opportunities for students and faculty to participate in workshops or other events around CE pedagogy		
<b>8. Secure Space</b>  Secure two more offices for GSFR faculty; space for student/faculty gathering. This will be especially important if the program develops into a broader based social justice institute, and growth in undergraduate program (p. 10-11)	<b>GSFR agrees.</b>  GSFR would like to have a space that can function as a sessional office (currently sessionals meet in the Director's office). The program would also like a small gathering place for program meetings  If a future Institute or Centre develops, it would need to be housed appropriately.	<b>GSFR Acting Director/Director; Administrative Staff; Dean Humanities</b>	<b>Immediate/Long Term</b>

#### Dean's Response

The Dean thanked the Review team members and the GSFR faculty, staff, and students for their thorough and constructive approach to the review of the program and was pleased to see that the Reviewers recognized the high quality of the students and curriculum, and the strong efforts by affiliated faculty to build and maintain the program. They reiterated that GSFR has been a model for the institution when it comes to community engaged research and learning at the graduate level. It is also the only Humanities program to offer a PhD diploma to graduate students across HUM and FSS, and in doing so serves as a model of transdisciplinarity and creative credentialing at the graduate level.

The Review team quite clearly identified the main challenges facing the program. The first is that GSFR has a very small affiliated faculty complement, and it is in the process of losing three key members to retirement. The second is that it is an interdisciplinary program, which like other similar programs on campus, struggles to share resources across Faculty borders. In light of these challenges, the Review

team made several recommendations and the Acting Director has offered her response. What follows is the Dean's assessment of the most significant recommendations.

### **Recommendations**

*Faculty Complement:* The Reviewers rightly identified the losses, due to retirement, of faculty teaching resources as the most pressing problem facing GSFR. The Dean's office has already begun to look for ways to ease this crisis.

- The Dean's hope is that we can engage new faculty members in the work of GSFR and do so by arranging 2-3 year secondments of 3 or 6 units of teaching. This is a strategy that the Arts and Science Program has employed with success, and it would mean the Director of GSFR would not have to scramble every year to find instructors.
- In 2019 the Department of Philosophy will be running a tenure track search in Feminist Philosophy. The Dean has spoken with the chair and their understanding is that one aim of the search is to find someone who can contribute to GSFR in an on-going capacity.
- Communications and Multi Media hired three new faculty members in 2018-2019, on the understanding that there would be a contribution of teaching units to the Faculty. The Dean will work out the specifics of this arrangement with the Chair of CSMM and the Acting Director of GSFR.
- GSFR also reports that they are interested in creating 600 level seminars to provide new electives to their students. This is a commendable plan. The Dean has already spoken to Dr. Quail about this suggestion and we should have time to make headway before the curriculum submissions this fall.

*Equity and Diversity:* The insufficient diversity within our faculty complement has been recognized as a serious problem that needs to be addressed. We have already begun this process.

- Hiring committees in 2018-2019 began following the University's new EDI guidelines for faculty searches and we will continue to do so.
- If central university funds become available for targeted hiring in this regard the Dean will make every effort to see that Humanities participates.

### *University Structures/Space:*

- The Dean has begun discussions with Dean Hurley and the Director of the Globalization MA about possible arrangements in which teaching resources are shared across Faculties. The Reviewers' Report notes that such sharing has been difficult in recent years, but the Dean is hopeful that they might make headway as both programs (Globalization and GSFR) have shown interest in doing so.



- The Dean has asked their space manager to review the space needs of GSFR with Dr. Quail. If there are immediate needs that are not currently being met, they will seek to provide them within the Faculty's current space allocation.

*Visibility:* The Dean supported the Program's desire to raise awareness about the MA and diploma programs. I would be happy to help support initiatives with this end in mind.

- This spring I extended support to GSFR (alongside all our Faculty's grad programs) to provide a stipend to current a student who will serve as social media ambassador for the program this year.
- 600 courses may also help draw students from the Faculty's undergraduate majors to GSFR. The Dean was less certain that creating a level IV seminar in Women's Studies makes sense, given that as a minor WS does not currently have level IV courses, but the Dean would expect that some existing 400 level seminars in Humanities might be found to serve this purpose. I have asked Associate Dean Corner to investigate these options.

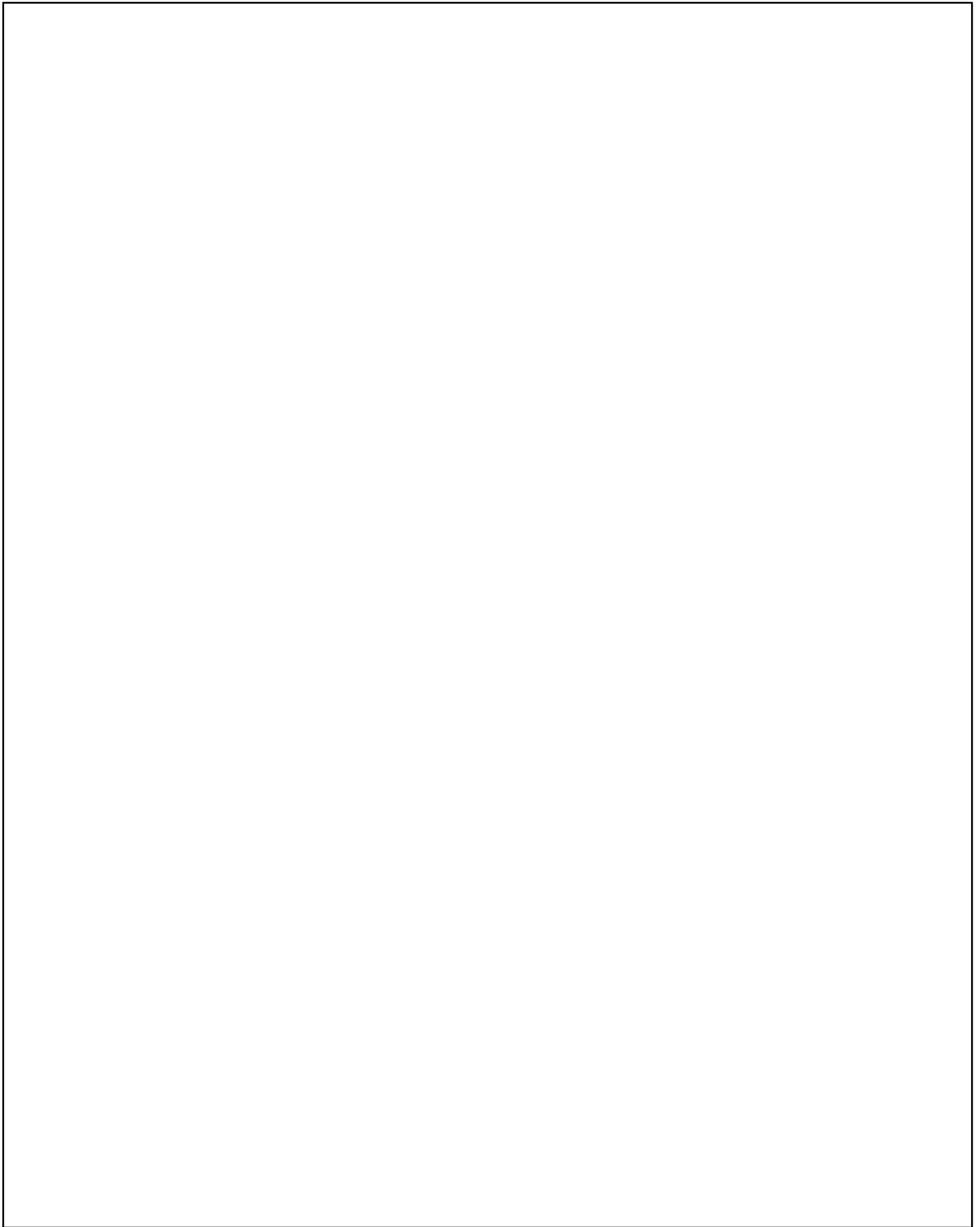
*Visioning:* The Faculty of Humanities is undergoing a significant shift in leadership. The Dean, two Associate Deans, and four chairs and directors of programs are all new in 2019-2020.

- It is a sensible time to take stock and also do some visioning and planning for the future. The Dean intended to lead such a process and will work with GSFR faculty and students and others to explore whether GSFR should continue to stand alone or be integrated into an existing department or new centre on campus.

The Dean looked forward to working with the acting director of GSFR to find ways to ensure that this small program remains financially viable and can continue to offer a quality program to its students.

#### **Quality Assurance Committee Recommendation**

**In their report, the external reviewers noted that the program itself was of good quality; however, several issues were raised with regard to resourcing of the program. The QAC noted that there could be challenges implementing the recommendations with the existing resources. The QAC agreed that the program could benefit from engaging in an earlier review to assess the status of the program and its sustainability with the resources that are available. As a result, the Quality Assurance Committee is recommending that the Gender Studies and Feminist Research program should follow a modified course of action with an 18-month follow up report and a full external cyclical review to be conducted no later than 5 years after the start of the last review to assess the follow-up actions' impact on the program.**



## **FINAL ASSESSMENT REPORT**

### **Institutional Quality Assurance Program (IQAP) Review**

#### **Economics M.A., Ph.D., Economic Policy M.A.**

**Date of Review: March 25 and 26, 2019**

*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 Economics. 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 Economics program submitted a self-study in February 2019 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 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 25<sup>th</sup> and 26<sup>th</sup>, 2019. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost and Dean of Graduate Studies, Associate Dean, Graduate Studies and Research, Chair of the department and meetings with groups of current students, full-time faculty and support staff.

The Graduate Chair of the department and the Dean of the Faculty of Social Sciences submitted responses to the Reviewers' Report (May 2019). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

- **Strengths**

Selected quotes from the external report bring out the key strengths of our programs.

- “The Department of Economics has a tradition of high-quality research and training for which it is recognized and known, and despite recent staff losses remains a home for several well-known and innovative researchers capable of offering doctoral training at the highest levels.” (Page 4)
- “A special feature of the program at McMaster is the co-op option. Students who choose this option must work in a placement with a significant research opportunity for a four- or an eight-month term. This option is particularly useful for students seeking employment outside academia.” (Page 6)
- “In the Self-Study and in our visits, we noticed several initiatives for innovation. We were impressed by the computer lab, the Experimental Economics lab, the co-op option for all graduate students, the “flipped classroom” strategy for Health Economics, the addition of lab sessions to the first core econometrics course, and the abundance of research/term papers used in McMaster’s graduate economics courses.” (Page 9)
- “Overall, we have the impression of a department with a strong culture of dedication to quality teaching, student success, and a democratic scholarly environment.” (Page 10)

- **Areas for Enhancement or Improvement**

- “The size of both the graduate programs and the faculty complement are insufficient to take full advantage of the prestige of the Department, its programs, and its strength in research.” (Page 4)
- “Because of recent retirements and departures, even given the current hires, the department is well under its past strength and under the size that would normally be associated with a department of its reputation and past success in graduate training and research. As well, several members of the Department are on secondment in administrative positions.” (Page 11)
- “...the Department should aim to have at least 25 tenure track professors. The recommendation is as valid today as it was ten years ago.” (Page 15)
- “PhD specializations are restricted to the areas in which faculty members are able to provide first-rate training, a set which nevertheless could expand if active new faculty members are hired.” (Page 9)
- Additional points made in the external report are highlighted in the table below.

**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
Expand in tandem the size of the graduate programs and the faculty	Faculty complement: The department will continue to advocate for resources to replace	Chair, Assoc. Chair for faculty expansion and	Given the lags involved in the approval of

<p>complement. The quality and prestige of the graduate programs of the Department are jeopardized by the insufficient size of its faculty. As mentioned in the previous review, the Department should aim to have at least 25 tenure track professors. We understand that for the increase to be viable more resources should be generated. For this reason, we also recommend increasing the size of the graduate programs with the view of generating more revenue.</p>	<p>departed/retired faculty in a speedy manner. We will advocate for positions at the Assoc. and Full Professor level to replace unexpected departures of mid-career faculty. This is particularly important in the context of the discussion in section 6.1.2 of the external review report.</p> <p>The department has already begun implementing a plan to expand the number of entering graduate students. The Chair of Graduate Studies has begun discussions with FSS and SGS in order to discuss how best to ensure that this expansion is possible by re-aligning the funding of future graduate students, especially international students.</p> <p>The Graduate Studies Committee of the department is discussing additional pathways for undergraduate students with insufficient preparation, including a qualifying year/semester or a graduate diploma prior to joining our current Masters programs.</p> <p>An expanded summer preparatory camp is another option on the table.</p>	<p>Graduate Chair for the rest.</p>	<p>program changes though all stages at the university, the posting of job ads and hiring of faculty, a period of 24 months will be required.</p>
<p>Consider the possibility of enhancing the MAEP to become a professional program. The success of the MAEP program could be exploited to get revenue for the</p>	<p>The department is interested in exploring the possibilities of either opening a new professional masters program or integrating the existing MAEP into a professional program. Recent discussions within the department have suggested that a large number of issues need to be considered and we will strike a committee to explore these</p>	<p>Department Chair and Graduate Chair will lead discussions and strike a committee.</p>	<p>Recommendations will be made in 6 months.</p>

<p>expansion of the Department and the graduate programs. The program should be attractive to many more international students than those currently enrolled. Also, with some enhancements, such as adding an extra term, the program could generate more revenue, and could be an attractive professional program. For these enhancements to be sustainable, the bulk of the extra revenue should be reinvested in the Department of Economics and its graduate programs.</p>	<p>possibilities and bring recommendations to the department after a careful cost-benefit analysis.</p> <p>We will need to conduct discussions with FSS and SGS also regarding revenue and cost sharing with the department. In addition, as discussed in the previous recommendation, a significant expansion of our graduate programs will need additional faculty resources.</p> <p>Some minor resources to hire a work-study student may be required to conduct background research into similar programs elsewhere to identify “best-practices” and avoid implementation mistakes.</p>		
<p>Modify how the math camp is offered to allow students more time to assimilate the material and to avoid interference with the courses taken in the first semester. The current format of four days at the beginning of the fall semester does not serve students well. We suggest offering the math camp prior to the beginning of the</p>	<p>The department has already begun implementing this recommendation. This change has been discussed at the recent department meeting. A minor increase in resources will be needed to expand the preparatory camp to two weeks from the current model since instructors will need to be compensated for their hours of work.</p>	<p>Department Chair and Graduate Chair.</p>	<p>We expect this to be in place for the incoming cohort of students in the 2019-20 academic year.</p>

fall semester over the span of two weeks and avoiding the evaluation of the math camp to interfere with the fall courses.			
Enhance the research experience of PhD students by upgrading the research activities of PhD students who are still taking courses, and by maintaining research support for advanced students. This research experience may be a component of regular courses, or, preferably on our view, it may take the form of a new research paper during the second year and the beginning of the third year. This paper not only would be useful to give student research experience at an early stage, it would also serve as a tool for exploring a potential topic for their dissertations.	<p>The department agrees that the addition of a research paper in the second year is a good idea. We have begun discussions at the last department meeting and a formal change to our graduate regulations will be made in the coming academic year. Additional changes to the requirements for PhD students including more semesters in the thesis workshops are also under consideration by the graduate studies committee.</p> <p>In addition, a grad research skills workshop where students would be provided a refresher on searching articles using ECONLIT and web of science SSCI, searching working papers from major credible research institutions (NBER etc.), where to look for data, how to write an academic paper, how to identify research questions etc. could be added.</p>	Chair of Graduate Studies.	One academic year to obtain approval for changes to the graduate calendar at various levels.

<p>Enhance the marketing of all graduate programs to better target the programs offered to the students' needs. Better advertising the programs strengths, in particular in the case of the MAEP, is a major part of this enhancement. In addition, the set of potential applicants, domestic and international, could be broaden by offering realistic paths to join the programs to top students with some deficiencies in their admission requirements. Finally, the Department should provide better guidance in the choice between the MA and the MAEP programs.</p>	<p>The department is considering a number of ways to improve the marketing of our graduate programs and to highlight several key distinguishing features of our programs.</p> <p>Much of this work involves improving our web pages. Minor resources for a work-study student with web design skills would be immensely useful in this regard.</p> <p>We need to highlight how well our students do in finding meaningful jobs.</p> <p>We also need to enhance marketing of our highly successful co-op program. This program is very popular with students and is currently operating with no resources beyond the good-will of a few faculty members. The reviewers state on page 14 of the report that... "Creating and enhancing the interaction of students with potential employers helps the successful placement of students. We encourage the Department to continue these efforts." As the department expands the number of masters students, the co-op will generate significant resources for the university. Some of these funds need to be redirected to the department to allow job placement and co-op placement to continue to achieve the high standards of the past.</p>	<p>Chair of graduate studies.</p>	<p>6 months and on-going. Marketing of programs requires resources every fall.</p>
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### **Dean's Response, Faculty of Social Sciences**

The Dean was heartened by the very positive assessment of Economics' graduate programs. The reviewers noted the high overall regard for the program outside McMaster and highlighted a number of strong features of the program, the high quality of the students' training experience, and the high levels of satisfaction among the students. They noted in particular, the co-op option, the research facilities available to students, innovations in teaching, the opportunities for students to write papers and undertake research papers through their coursework, and the extra-lab time integrated into the core econometrics course.

Naturally, they also identified areas for improvement, and made a set of specific recommendations in this regard. The department response outlines specific steps that the department will take in response to these recommendations, in many cases starting almost immediately. The Dean appreciated this strong response by the department. Below he offered some comments on each of the major recommendations and on the department's response to the recommendation.

#### **1. Expand in tandem the size of the graduate programs and the faculty complement**

The reviewers state that the quality and prestige of the graduate programs are jeopardized by an insufficient faculty complement. Expanding the graduate programs, they suggest, could generate revenue that can finance expansion of the faculty complement.

The Faculty has demonstrated a strong commitment to the department in the last few years as the department has experienced an unusual number of retirements and departures. At the end of hires currently in progress, the FTE complement of tenure research faculty will be 23.50, less than 0.50 lower than its highest level since 2012/13, while the complement of teaching-stream faculty has been increased by 1.0 FTE. This is below the target of 25 tenured faculty cited in the report, but the last number of years have focused simply on restoring the complement in light of the unusual number of losses. The Faculty remains committed to working with the department to enhance its faculty complement. This will be a challenge in the near term as the Faculty absorbs the recent 10% reduction in tuition fees mandated by the provincial government and the essential freezing for the near term of the nominal value of the provincial operating grant. There is merit in the recommendation to expand enrolment in the graduate programs — as noted, the department offers strong programs that are attractive to students; further, among departments in the social sciences, Economics currently has the third lowest number of graduate students per tenured faculty member. But expansion simply of the research graduate programs will not generate sufficient revenue to finance new faculty positions. Financing new faculty positions through expanded graduate training be advanced far more through the creation of professional programs that generate a larger

revenue stream. As the departmental response indicates, the department has begun to expand MA enrolment this year, and as per the second recommendation, it has committed to examining options for professional programs. The Faculty is committed to working with the department as it examines options and support it in pursuing the most promising ones. This is fully consistent with larger strategic directions of the university.

## **2. Consider enhancing the MAEP to become a professional program**

The reviewers are correct that the MAEP is a logical place to consider a professional program. The challenge in the domestic market is that although students value the more policy-oriented training offered through the MAEP (compared to the traditional MA), students also know that they can get good jobs in the public and private sectors with the traditional MA. It is not clear that students would pay a large premium for a professional MAEP without substantial enhancement. The department has committed to examine this issue, and as part of that will have to assess what enhancements and modifications might make it attractive as a professional program. One option would be to adapt it to create an internationally focused MAEP and target international students seeking to enhance their marketability in their home countries, for which such a degree may be attractive. There may be other ways to focus a professional program on niche markets willing to pay the higher tuition. The department will have to consider all such options as it examines this issue.

## **3. Modify the way in which the math camp is offered**

The department has already begun implementation of this recommendation.

## **4. Enhance the research experience of PhD students, especially while they are still taking coursework**

The issue identified by the reviewers is common to PhD programs with heavy course requirements (as is true of all North American doctoral programs in economics, and increasingly so internationally). The department has already committed to act on this during the coming year and obtain the required changed into the calendar for the start of next year. The introduction of a research paper in the second year is one promising mechanism for achieving the underlying goal, but other approaches may also help and the Dean was glad to see that the department is also looking at other ways it can enhance the research experience of students earlier in their training.

## **5. Enhance the marketing of all graduate programs, including better targeting of the programs offered to students' needs**

Better marketing of our graduate programs has been a focus of the Faculty for the last number of years, with a particular focus on websites. To that end, the Faculty has made available to all graduate programs strategic resources provided by the Provost intended to

enhance marketing and recruitment. The department has committed to acting on this recommendation immediately, and the Faculty will continue to work with the department on this issue. Both the reviewers and the departmental response highlight enhancement of the interactions between students and potential employers. The department may benefit by drawing on the Faculty's Experiential Education office, which has expertise in identifying and arranging internships and other work-integrated learning experiences and is in regular contact with public- and private- sector employers interested in student placements.

### **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 an 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.**

## **FINAL ASSESSMENT REPORT**

### **Institutional Quality Assurance Program (IQAP) Review**

#### **Social Psychology Program**

**Date of Review: March 3 - 4, 2020**

*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 undergraduate and graduate programs delivered by the **Social Psychology Program**. 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 Review**

The Social Psychology Program submitted a self-study in January 2020 to the Vice-Provost, Faculty to initiate the cyclical program review of its undergraduate 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 member in the program.

Two arm's length external reviewers, both from Ontario and one internal reviewer were endorsed by the Dean, Faculty of Social Sciences, 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 March 3 – 4, 2020. The visit included meetings with the Provost, Vice-Provost, Faculty, Dean of Social Sciences, Director, faculty, staff and, students.

The Director of the Social Psychology program and the Dean of the Faculty of Social Sciences submitted responses to the Reviewers' Report (August 2020). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

### Strengths

The program furnishes a richly interdisciplinary, innovative, and intellectually rewarding experience. Students learn about a variety of methodologies and receive hands-on research experience in the capstone course. Satisfaction with the program is high amongst both current students and alumni; they strongly identify with the program and feel that it has prepared them well for launching their careers. Program faculty are committed and have made the most of the resources they have been allocated. Return on investment in the program has been high.

### Areas for Improvement

The curriculum needs to be indigenized and decolonized. Students require further academic skills training in writing, reviewing literature, and research methods. The program relies too heavily on sessional instructors and CLAs and would benefit from hiring tenure-stream or tenured faculty who can contribute expertise both in sociological and psychological social psychology.

### 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
<b>1. PROGRAM</b> <b>(a) Indigenization</b>			
1.1 Address issues of Indigenization and decolonization throughout the discussions arising from this report. 3.2. The program hold a retreat to develop ideas about how to work toward Indigenizing and decolonizing the social psychology curriculum.	We will hold a faculty retreat to discuss changes to the social psychology curriculum, including issues of Indigenization and decolonization.	Program faculty	2020-21
3.11. Program members jointly undertake a curricular review to ensure that the broader considerations	We will discuss these issues at our faculty retreat (see section 1.1).	Program faculty	2020-21

captured by “diversity” are addressed throughout the curriculum.			
3.1. The institutional template for the IQAP self-study and review report be revised to foreground Indigenization and decolonization.	We will make these recommendations to the MacPherson Institute.	Tara Marshall	Fall 2020
<b>1. PROGRAM</b>			
<b>(b) Program vs Department</b>			
1.3. Develop a multi-year plan to either strengthen social psychology as an undergraduate program or develop an academic plan for the departmentalization of the program.	The program faculty will discuss the possibility of departmentalization at a faculty retreat. The faculty will continue to work on strengthening the program and will discuss next steps with the Dean.	Program faculty	Fall 2020
1.4. Rather than undertaking an undergraduate journal initiative, enhance the dissemination of undergraduate research by highlighting and archiving student poster presentations on the program’s website	<p>We have archived the poster presentations on our website and plan to do so every year from now on.</p> <p>Our undergraduate journal is modest in scope and facilitated by the library, so there is little additional labour required by the faculty to implement the journal. We have posted guidelines on the journal website (hosted by the library) that indicate that (a) only capstone projects that receive a mark of at least 85% will be considered for publication; (b) there will be no additional peer review for submissions, since final capstone papers already go</p>	Sarah Clancy	<p>Poster presentations: achieved</p> <p>Undergraduate journal: first issue will be published in summer 2020</p>

	through multiple stages of review by the instructor. This type of student journal is consistent with those developed in other departments at McMaster.		
<b>3. CURRICULUM</b> <b>(a) Course offerings</b>			
1.2. Explore future practicum/placement opportunities to enhance community engagement.	We will meet with representatives of Experiential Education and explore ways to augment our experiential provision. We currently do not have the capacity to include a practicum/placement course but remain highly interested if given an opportunity to allocate the necessary resources to such a course.	Tara Marshall	2020-2021
3.3. A mechanism be provided for students to apply to have courses not presently on the multidisciplinary list be counted toward their multidisciplinary course requirement. This mechanism should be made prominent in the calendar and on the program website.	Currently, students who take a course not on the multidisciplinary list can have it counted towards their multidisciplinary course requirement after discussing it with the Academic Advising office and then obtaining permission from the Social Psychology Program Director. We can make this process more transparent on our program website and ask for it to be added to the calendar when we present program changes at the Undergraduate Curriculum meeting in the fall.	Emma Pechmann	Fall 2020
3.4. The multidisciplinary course list be reviewed with the goal of reducing the number	Our Program Administrator will review the course list and identify courses with prerequisites. The Program Director will then review	Emma Pechmann, Tara Marshall, and the Social Psychology faculty	Fall 2020

of courses with prerequisites.	these courses, flag any that might be removed, and present these removals to the rest of the Social Psychology faculty for feedback. If we agree on courses to be removed from the multidisciplinary list, we will present the changes at the Undergraduate Curriculum meeting in the fall.		
3.7. The methods/statistics requirements be increased by one 3-credit course, at Level III. The SOCPSY 3L03 course to be introduced in 2020/2021 would be one course that could fulfill this requirement.	SOCPSY 3L03 is being introduced as an optional course in 2020-21. This course is cross-listed with Health, Aging & Society, so it is not possible to offer it as a requirement for Social Psychology students (HAS feels that making it a required course for Social Psychology would dramatically increase the class size, thereby detracting from the quality of learning for HAS students). We anticipate that Social Psychology students who wish to pursue research-based graduate studies may take this course. Nonetheless, we may work towards offering a required Level III course in methods/statistics solely for Social Psychology students within the coming years, provided we have the teaching staff to do so.	Tara Marshall	2020-2025
8. A qualitative methods course that could fulfill a new Level III methods requirement should be introduced. Ethnography would be	While SOCPSY 3L03 covers both quantitative methods and qualitative methods, we agree that it would be ideal to develop a new course focusing exclusively on qualitative methods. This may	Tara Marshall	2025



a promising subject for it, given current expertise in the program.	become feasible once we have more permanent faculty members contributing to our program.		
<b>3. CURRICULUM</b> <b>(b) Capstone</b>			
3.5. The capstone course size be capped, conceivably by dividing it into two sections.	Given increasing student enrollments, it is no longer feasible for the capstone course to be delivered by one instructor only. In fall 2020, we will request additional teaching resources so that we may divide this course into two sections as of 2021-22.	Tara Marshall and Sarah Clancy	Fall 2020
3.6. The ethics training in the capstone course be simplified and streamlined. For example, instead of having each group independently prepare iterations of the ethics documents, a single ethics document could be prepared that would cover all groups wishing to survey the general student body – a popular choice of method in the posters we viewed. Each such group could simply contribute questions to an “omnibus” survey questionnaire. Groups wishing to use other methods, such as in-depth interviews for other populations, could still do group-specific ethics paperwork, but could	Currently, templates for ethics documents are provided for the students, and the instructor provides an in-class seminar to go over the completion of said documents. We appreciate the reviewers’ suggestion for an omnibus questionnaire and will keep it in mind when there are very similar student projects (and those similar projects are quantitative in nature). This would likely result in a reduction of workload for the instructor, while at the same time ensuring groups contribute equitably and equally to the project design and there is no discrepancy between groups.	Sarah Clancy	Fall 2020

be provided with typical language and a “fill in the blank” format for incorporating their own plans.			
3.9. Students be required to have completed the Level II methods and statistics requirements before taking the capstone course. Further, we recommend that students be advised to complete the new Level III methods requirement prior to taking the capstone course	<p>We will add the methods course (SOCPSY 2K03) as a prerequisite for the capstone course. We will inform the Associate Dean’s Office and present the change at the Undergraduate Curriculum meeting.</p> <p>Until we have a required Level III methods course in place, we will encourage our students to take the optional methods course (SOCPSY 3L03) before taking the capstone course.</p>	Tara Marshall, Emma Pechmann, and the Associate Dean’s Office	Fall 2020
3.10. The program consider developing an alternative to the capstone, one in which students can explore the relationship between social psychology and community placements.	<p>(See response to 1.2). We will meet with representatives of Experiential Education and explore ways to augment our experiential provision. However, we have reservations about this possibility on two fronts: (1) placements would require additional resources offered by the Faculty, and (2) the capstone course is consistently rated one of the top features of our program, and we are reluctant to make changes that might harm its standing. We think a practicum/placement course at Level III might better satisfy the experiential education component of our program than in lieu of the capstone.</p>	Tara Marshall	Fall 2020

	However, we will discuss this possibility at a faculty retreat.		
<b>4. TEACHING AND ASSESSMENT</b>			
4.1. The program identify opportunities to develop literature review skills (including referencing), beginning in the lower years of the program.	Currently, students learn how to write literature reviews for SOCPSY 1Z03 and 2B03, but we think it would be worthwhile to incorporate a literature review assessment into SOCPSY 2YY3 (Theories in Social Psychology), which is a required course. While our sessional instructors have done an excellent job teaching this course over the last few years, we believe it should be taught by permanent faculty to ensure consistency in teaching foundational skills such as reviewing literature. We will discuss further ways to develop literature review skills at the curriculum review faculty retreat.	Program faculty	2020-21
<b>5. RESOURCES TO MEET PROGRAM REQUIREMENTS</b>			
5.1. Reduce the number of units of instruction taught by faculty with contractually limited or sessional positions to afford the program greater stability in course offering and staffing.	<p>Plans are afoot to convert Sarah Clancy's CLA to a teaching professor position by July 2021.</p> <p>We seek additional tenure-stream faculty to teach units in our department that, at present, are taught by sessional instructors. These teaching units are germane to our program (Theories in Social Psychology, Self &amp; Identity) and are best taught by a sociological social</p>	<p>CLA conversion: Tara Marshall, Jim Dunn (Chair of Health, Aging &amp; Society), and the Dean.</p> <p>Hiring additional tenure-track faculty: we will discuss this with the Dean.</p>	<p>July 2021 (CLA conversion)</p> <p>2021-2025: hire additional tenure-track faculty</p>

	<p>psychologist with expertise in symbolic interactionism. To satisfy the student desire for additional psychological social psychology, we seek to hire a tenure-stream experimental social psychologist who could teach units that are essential to a well-grounded education in psychological social psychology (e.g., intergroup relations, close relationships). We are particularly keen on hiring at least one BIPOC individual for these positions.</p>		
<p>5.2. Consider both the conversion of the current CLA to continuing status and an increased, ongoing commitment from the departments of Sociology and Psychology to contribute teaching power in support of this program.</p>	<p>As noted in 5.1, Sarah Clancy's position will be converted to a teaching professor position by July 2021.</p> <p>Rather than an increased commitment from Sociology, we would prefer to decrease Sociology's 9-unit commitment to our program. Until we have permanent staff to teach these units, we could hire sessional instructors or a CLA. While the teaching provided by Sociology faculty has been excellent, we do not know on a year-to-year basis who will be teaching these units, and there have been years that Sociology was unable to deliver on this commitment due to a lack of available faculty. We have similar misgivings about seeking a teaching commitment from the Department of Psychology, Neuroscience, and Behaviour (PNB). They do</p>	<p>We will discuss this with the Dean.</p>	<p>2020-2021</p>

	<p>not have any research-stream faculty who specialize in social psychology and might not be able to teach units in our program.</p> <p>Rather than seeking a commitment of additional teaching units from Sociology or PNB, we would prefer to discuss the possibility of a joint appointment for a CLA or tenure-stream professor.</p>		
5.3. Review space issues with the goal of ending the program's reliance on "borrowed space" for core operations.	We are in complete agreement with this recommendation.	We will discuss this with the Dean.	2020-2025
5.4. Critically review the annual budget to ensure that funding of the student experience in smaller programs and departments is reasonably comparable to that of larger departments. This is not simply a resources issue: it is an equity issue.	We are in complete agreement with this recommendation.	We will discuss this with the Dean.	2020-21
<b>7. PROGRAM ENHANCEMENT</b>			
7.1. Track the numbers of students enrolling in independent study courses and the projects they work on. The application form for such courses should collect data	Our program administrator will track independent study students and put the titles of their studies on our website. We will also devise a survey to ask these students about their motives for doing the independent study.	Emma Pechmann and Tara Marshall	2020

about the students' motivations.			
7.2. Identify the kinds of inconsistency in SOCPSY 2K03 that have proven troublesome in the past, and accordingly amend the Curriculum Map, as well as any longer, internal course description document that the program may use.	There has been inconsistency in who has taught this course due to faculty unavailability (e.g., parental leave). We will ask the course instructor to look over the course description and make amendments if necessary and change the Curriculum Map accordingly.	Paul Glavin	Fall 2020
7.3. Develop more precise learning outcomes for SOCPSY 2K03.	We will ask the faculty member who regularly teaches this course to provide more detail on the course outline for SOCPSY 2K03. Along these lines, we will ask all instructors to incorporate Program learning outcomes into their outlines for 2020-21.	Paul Glavin	2020
7.4. Use program faculty meetings or a teaching retreat to continue to discuss the connections among courses in support of the learning objectives. Use syllabi as resources in these discussions.	We will discuss connections among courses in support of learning objectives at a faculty retreat in fall 2020 focused on curriculum development.	Program faculty	Fall 2020
7.5. Experiment with a Level II orientation to paths through the program.	To reach all Level II students, we will introduce an orientation to paths through the program as part of a required course - SOCPSY 2YY3. Tara Marshall delivered an orientation along these lines for students taking	Tara Marshall	Fall 2020

	SOCPSY 2B03 in fall 2019; however, 2B03 is not mandatory for all Level II students and would be better delivered in SOCPSY 2YYY3.		
7.6. Compare students' views of multidisciplinary by level of study.	We will develop a short online survey that asks students in each level of study about their views of multidisciplinary.	Tara Marshall and Emma Pechmann	2020-21
7.7. Track changes in the Level I GPA of entering students.	We agree with this recommendation and will do so over the coming years.	Tara Marshall and Emma Pechmann	2020-2027
7.8. Partner with the Academic Skills unit and Student Success Center to provide enhanced support for under-prepared learners.	We will liaise with the Student Success Center to see what support they can provide for our students.	Tara Marshall	2020-21
7.9. Create a Faculty Advisor role.	The faculty will discuss this role at a retreat.	Program faculty	2020-21
7.10. Publicize student research by exhibiting posters from the capstone course on the program website.	In March 2020, Sarah Clancy created a virtual slideshow of the capstone poster session (cancelled due to the COVID-19 pandemic). We have posted it on our website and have decided to do this every year from now on to highlight the projects that our students work so hard on.	Sarah Clancy, Emma Pechmann	We will do this every year from now on
7.11. Investigate whether the Social Psychology Student Society's Facebook page could be used to track the careers of a greater number of alumni.	We will investigate the possibility of posting a link to an online survey on the Student Society's Facebook page that asks alumni about their careers.	Tara Marshall, Emma Pechmann	2020

7.12. Revise the careers information in the program website to better reflect the diversity of graduates' career paths.	We have recently collected information on career paths from over a dozen alumni and will revise the careers information on our program website in accordance with this information.	Tara Marshall, Sarah Clancy, Emma Pechmann	Fall 2020
7.13. Seek out an opportunity for the curriculum to address how responses to traumatic course material can be understood using social psychological concepts.	We will discuss this issue at our faculty retreat focused on curriculum development.	Program faculty	Fall 2020
7.14. Preserve the expertise in sociological social psychology (symbolic interaction) being lost through retirement via a targeted hiring in the area and ensure that the terms and conditions of employment for this appointment include the teaching of 6-9 units of instruction in SOCPSY.	We agree with this recommendation, but the details of faculty hires must be negotiated at the Faculty level.	We will discuss this with the Dean.	2020-2025
7.15. If there is a move to departmentalize the program, then an expansionary position in psychological social psychology would be beneficial.	We agree with this recommendation, but the details of faculty hires must be negotiated at the Faculty level.	We will discuss this with the Dean.	2020-2025
7.16. Expand the number of faculty	As suggested in section 5.2, we wish to hire program-	We will discuss this with the Dean.	2020-2025



members contributing to the program and teaching SOCPSY courses.	specific faculty rather than to “borrow” teaching units from other departments on an ad hoc basis. The details of faculty hires must be negotiated at the Faculty level.		
7.17. Review the academic calendar and web-based resources that address progress from this program to potential graduate study and careers for transparency, accuracy, constancy of message and completeness.	We appreciate this recommendation and will review these sources.	Tara Marshall and Emma Pechmann	Fall 2020
<b>8. SYSTEM OF GOVERNANCE</b>			
8.1. The complement of faculty members who have “cross-appointments” to Social Psychology be increased over time for the purpose of providing curricular stability to the program and decreasing the program’s reliance on a contingent/sessional faculty.	<p>We partially addressed this point in section 5.2.</p> <p>Part of the problem is that there are few existing faculty members outside of our program who do any research, teaching, or practice related to social psychology. Non-specialists can deliver classes on research methods/statistics or content more peripheral to social psychology, but core content should be taught by social psychologists. We prefer to hire social psychologists who self-identify as social psychologists.</p>	We will discuss this with the Dean.	2020-21
8.2. While we address this issue elsewhere in the report, as a governance matter, the program	We are in complete agreement that the program coordinator should not have to “beg and borrow” for teaching resources. However,	We will discuss this with the Dean.	2020-21

<p>coordinator should have access to increased teaching resources that are not contingent on having to “beg and borrow” resources from department Chairs. This does not require an expansion of faculty complement in the Social Sciences but a firm commitment to the allocation (or potential reallocation) of teaching workload.</p>	<p>we would rather hire self-identified social psychologists than have our units taught by redeployed faculty whose disciplinary identification and teaching preferences lie within their home department.</p>		
<p>8.3. Program members should adopt a more “department-like” schedule of meetings to address curricular and program-related matters to enhance collegial governance practices and to increase the extent to which those teaching within the program interact with each other on that basis.</p>	<p>At a faculty retreat, we will discuss the possibility of introducing more “department-like” meetings during the fall and winter terms. We are mindful of balancing the goal of faculty interaction with not over-burdening faculty with additional labour.</p>	<p>Program faculty</p>	<p>2020-21</p>
<p>4. Service to the Social Psychology program should be fully considered by the home department during evaluative processes.</p>	<p>We agree with this recommendation and further propose that any new roles we add to the program (e.g., Faculty Advisor role) should come with a reduced service commitment in the home department.</p>	<p>We will discuss this with the Chairs of the respective home departments and with the Dean.</p>	<p>2020-21</p>

**Dean’s Response, Faculty of Social Sciences:**

The reviewers offered high praise for the program. They noted the high level of student engagement and commitment, the high level of student identification with the program, and the consistently positive comments by program alumni. They highlighted a number of innovative aspects of the curriculum, including the group-and project-based capstone course (which students consistently praised as well), the extent to which the program enabled students to think creatively about multi-disciplinarity alongside the inherently interdisciplinary nature of social psychology, and the commitment of the faculty to the program and the students. Clearly the program is doing many things “right” — enrolment has grown steadily since the program was introduced seven years ago. The review confirms that it is a program of which the Faculty of Social Sciences can be very proud.

Naturally, the reviewers also identified areas for enhancement, many of them linked to the tremendous growth of the program, which is creating strains, and to the status of Social Psychology as a free-standing program outside a department or school. The reviewers provided over 40 specific recommendations addressing matters ranging from relatively minor issues to those vital for the continued success of the program. The program has provided a detailed response to all the reviewer recommendations, groups into thematic areas. Through its response, the program clearly demonstrates its commitment to thoughtfully considering all the recommendations, and to taking specific actions to address them as appropriate in a timely manner. I focus my comments on those recommendations that bear on actions that must be taken by the Dean or which are of particular importance to the continued success of the program.

## **1. Curriculum**

### **Capstone Project**

- The reviewers emphasize the success of the capstone project in addressing numerous program learning objectives, and the high regard with which the capstone course is held among students. The capstone course occupies a pivotal place in the curriculum. But the growth of the program enrolment means that it is no longer tenable to offer a single course section taught by a single instructor. The obvious solution is to offer multiple sections of the capstone course. The Faculty will support this change with the resources necessary to implement it.
- The reviewers offer some recommendations regarding design enhancements to the curriculum that the program will consider, perhaps the most significant of which is creating the option to do a community placement rather than the capstone course. I will leave it to the program to consider the merits of this suggestion given the overall learning goals of the program and the role of the capstone course in meeting those goals, but the Faculty’s Office of Experiential Education, which facilitates internships and placement for students in the Faculty of Social Sciences stands ready to work with the program to create this option if desired. The introduction of such an option is consistent with the Faculty’s growing emphasis on experiential learning. In my view, the capstone course and a placement are not either/or—it may be possible and desirable to create a placement option even for those who take the regular capstone course.

### Diversity and Indigenization of the Curriculum

- The program will take up these recommendations at a retreat to be held this academic year. These issues have become more important in these last few months, and the revisions can be undertaken as part of a larger initiative of the Faculty to examine program curricula and course content through a diversity lens. As the reviewers note, it is essential that this work be undertaken in a manner that fully respects the history and cultures of Indigenous peoples and people of colour, but that it also does not place unreasonable demands upon them to “do the work” of revising curricula.
- The Faculty will recommend to the MacPherson Institute that the IQAP template be modified to address the absence of a component that asks programs to address issues of Indigenization of its curriculum.

### Methods Training

- The program has identified an interim measure to address the recommendation that a 3rd-year methods course be introduced. The interim measure, however, does not fully address the problem as it does not allow the program to make the 3<sup>rd</sup>-year methods course mandatory. A full resolution requires additional instructor resources for the program. There are multiple options for this, and this issue has to be integrated into the large discussion of additional faculty resources for the program. The Faculty will work with the program to find a suitable resolution. While awaiting resolution of the larger faculty-resource issue, this issue can be brought forward this coming fall as part of the program’s teaching-resources request to the Faculty.

## 2. Faculty Resources

This is perhaps the most vital issue for the program and underlies many of the more-specific issues raised in the review. As the reviewers note, the program is under-resourced with permanent program faculty. The Faculty began to address this issue two years ago with the recruitment of two new faculty members with specific teaching and service commitments to the Social Psychology program, and it acknowledges that additional work remains to stabilize this popular, high-quality, growing program.

I would like to clarify one point of misunderstanding: the program director does have teaching workload under their control. The director can control the teaching assignments within the program of those faculty with explicit commitments to teaching in the Social Psychology program as part of their letters of appointment. The amount of workload under their control may be too little currently, but it is present.

### Increase permanent faculty affiliated with the program

- The Faculty has obtained approval to convert the contractually limit appointment of Dr. Sarah Clancy to a teaching-stream position, which offers permanence conditional adequate performance in the role. Dr. Clancy plays a pivotal role in the program as instructor of the 1st-year program and of the 4<sup>th</sup> year capstone course. Solidifying her status is essential.

- Hiring additional faculty affiliated with the program is a priority of the Faculty. The COVID pandemic has introduced greater uncertainty regarding the ability of the Faculty to undertake new faculty recruitment in the near-term as the pandemic will affect enrolments in (and therefore the funding to) the Social Sciences as McMaster. The Faculty will work with the program and the Office of the Provost (which must approve all hires) to facilitate such a hire in the context of the Faculty's overall hiring priorities and budget resources.
- The reviewers recommend that additional current permanent faculty in social sciences become affiliated with the program so as to increase the number of courses that can be offered through the social psychology program. As the reviewers note, this will take some creativity to identify inducing arrangements, but the Faculty will work with the program to do this as feasible with faculty it identifies as desirable to have affiliated with the program. Not surprisingly, no other program in the Faculty currently volunteers that it has a surplus of teaching resources available to be re-allocated to another unit, so doing this will likely require net new teaching resources for the Faculty. But there may be situations in which it is advantageous to the program to enter such arrangements rather than getting resources directly.

#### **Program/Department Status**

The reviewers argue that the social psychology program is at a crossroads and that it requires either a firm commitment as a non-department program or a signal that it can transition to a department. Implicit in the way the former option is raised is the notion that it may still be perceived as "experimental." This is unequivocally not case: it is now a core program of the Faculty of Social Sciences and absent some dramatic change will continue indefinitely. Indeed, as emphasized by the reviewers, it is one of the most popular programs that offers an exceptional student experience.

The option of transitioning to a department brings with it both advantages and disadvantages from both the program and the Faculty perspectives. While it does create greater flexibility in certain respects (e.g., in principle with respect to recruitment, since faculty can be appointed to a department but not a program), being a small department does not resolve many of the challenges currently associated with being a small program and it introduces some new challenges. As Dean, I am open to considering this option, but any such a decision will not be taken lightly. The question must be carefully and thoroughly studied and we all must understand exactly what we expect to gain by such a transition that will benefit both the program and the Faculty.

These two, of course, are not the only options. One could consider, for instance, creating a School of Interdisciplinary Studies in the Faculty of Social Sciences that houses multiple interdisciplinary programs (the Faculty has others) within a structure that has all the attributes of a department and which allows the constituent programs to retain their distinctive identities but which captures many of the benefits of a larger administrative unit. Such an option (along with other possibilities) needs to be considered along with becoming a stand-alone department.

Finally, a small matter, but I would note that the program is not located in “borrowed space” on loan from the Department of Health, Aging and Society. While located on the same floor as Health, Aging and Society, the space it occupies is the program’s space, not Health, Aging and Society’s.

#### **Summary Comments**

This review has been timely. The program recently transitioned from leadership under its founding Director, Dr. Dorothy Pawluch, who deserves rich praise for creating such a strong program, to a new Director, Dr. Tara Marshall. The program has grown to the point where some aspects of the original design need to be reconsidered to accommodate increased program enrolment. And with two recent hires affiliated with the program, there is new energy and scope for modifications that build on the successes to date. I want to again thank the reviewers for their detailed, thoughtful, and comprehensive recommendations. It is not often that reviewers engage in such a way so as to offer their best recommendations to improve a program. They are to be commended. Finally, as Dean, I am committed to work with the program to implement the many valuable recommendations of the review.

#### **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**

#### **Biochemistry, M.Sc. and Ph.D.**

**Date of Review: June 22<sup>nd</sup> and 23<sup>rd</sup>**

*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 Biochemistry. 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 Biochemistry program submitted a self-study in February 2020 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 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 June 22<sup>nd</sup> and 23<sup>rd</sup>, 2020. The visit included interviews with the Vice-Provost and Dean of Graduate Studies, Executive Vice-Dean and Associate Vice-President (Health Sciences), Associate Dean, Grad Studies and Research Health Sciences, Chair of the department and meetings with groups of current students, faculty and support staff.

The assistant dean of the department and the Dean of the Faculty of Health Sciences submitted responses to the Reviewers' Report (July 2020). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

### Strengths

- Size of program and program growth, especially when normalized to number of core faculty: ~135 students, 23 core faculty
- Favorable ratio of PhD:MSc students (2:1), reflective of research intensity
- Track record of student success in major national scholarship competitions (eg. CGS-M, CGS-D, Vanier)
- Exceptional number and quality of student-led publications
- Reputation and funding levels of core faculty
- Strong recruitment of graduate students nationally (and internationally)
- Robust system of program governance

### Areas for Enhancement or Improvement

- Graduate courses: Although satisfaction of students enrolled in specific graduate courses was very high, there was a desire for a “core curriculum” that emphasizes skills broadly applicable to the diverse fields of research of the Department, and a move away from “Special Topics” courses that, while of high quality, were of limited relevance to many students.
- Mental health: Some students expressed dissatisfaction with mental health resources available on campus. A more structured framework for helping students navigate available mental health resources within and outside of the University was recommended. It was felt that such a resource would be of value to all FHS students (or even all SGS students more broadly) and might best be coordinated centrally.
- Career Preparedness: Students expressed a desire for expansion of program initiatives focused on career preparedness, especially careers outside of academia.
- Data Tracking: The reviewers felt that a more robust system to track graduates (eg. the PhD Exit Survey) would be of significant value.
- Administrative Support: It was clear to reviewers that given the size of the program, additional administrative support is required to alleviate the overwhelming workload currently carried by our sole staff member, Graduate Officer, Ms. Kush.

### 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
We recommend that the Graduate Program proceed with plans to implement a core curriculum of four courses including the	Program will proceed with plans to implement a four-course core curriculum. We will ensure that the	Dr. Miller will oversee core curriculum changes and monitor enrollment pressure on BIOCHEM 732.	Special Topics courses have been suspended beginning in Fall 2020 Term.



new Modern Techniques and Technologies course and a Career Preparedness course. As part of this recommendation, the capacity of BIOCHEM 732 (Scientific Writing) in particular should be expanded and offered in each semester to ensure all new students have access.	structure of this new curriculum allows an opportunity for all interested students to enrol in BIOCHEM 732 (Scientific Writing) – which is a new and very popular course.	Dr. Leigh Wilson (MILO) will be primarily responsible for development of the new career-focused course in consultation with Dr. Miller  A coordinator for the new Modern Biochemical Techniques/Technologies course will be identified in the Fall term. This individual will develop the new course curriculum with Dr. Miller.	New Careers course to be offered in Winter 2021 term.  BIOCHEM 732 to be offered annually beginning in the 2020/21 academic year.
As part of the Career Preparedness plan, we recommend that a speaker from industry or other suitable non-academic career path, be invited once per semester on a trial basis, to present in the departmental seminar series with provision of ample opportunity for students to meet with these individuals to discuss their career.	Non-academic speakers will be invited to present in the BBS Seminar series (and/or the BBS Research Symposium) at least twice annually, with “lunch-and-learn” sessions scheduled to facilitate interaction with students.	Dr. Sloboda (Associate Chair, Research) coordinates the seminar series and will be responsible for implementation with Dr. Miller.	The COVID-19 pandemic has necessitated a remote seminar series for the foreseeable future. Nevertheless, we will implement this initiative remotely beginning in the 2020/21 academic year.
Given the continued expansion of the Biochemistry Graduate Program, we recommend that resources be made available from the Faculty of Health Sciences to hire a part-time employee (at a	Discussions will be initiated between the Department, Dr. Hanna, and FHS senior leadership to find the resources required to support an additional 0.5 FTE whose role will be to provide administrative support	Dr. Coombes (Chair) and Ms. Dawn Lilley (Director of Administration) will be responsible for follow up with FHS leadership.	Discussions will be initiated in Fall 2020 with the intention of securing resources and completing hiring in 2021.

minimum at 0.5 FTE) to assist Lisa Kush with the administrative management of the Biochemistry Graduate Program.	for the Biochemistry Graduate Program.		
We recommend that the exit surveys for the graduating students are completed each year and the data are provided to the Department of Biochemistry and Biomedical Sciences	<p>PhD exit surveys are administered by SGS. It is therefore not clear whether missing data reflects a failure to administer the survey in the years mentioned by the reviewers, or simply a lack of completion. It is also unclear how much follow-up there is to encourage completion by SGS.</p> <p>The Program feels that there would be significant value in having more detailed information about our graduates post-graduation. However, Ms. Kush is already overburdened as noted above. It is feasible that the department could implement an internal data-gathering procedure for graduates under the purview of a new 0.5 FTE graduate administrative assistant, as noted in the reviewer recommendations.</p>	<p>Administration of PhD exit surveys falls under the purview of SGS.</p> <p>If resources can be secured for an addition 0.5FTE, Dr. Miller and Ms. Lilley will develop a plan for gathering data from our graduates which can become part of the new employee's job description.</p>	Contingent upon hiring a new 0.5FTE. Implementation no earlier than 2021/22 academic year.

Development of a more explicit mental health resources document/map to increase student awareness and guide students to the appropriate supports based on their specific needs.	<p>The Program will undertake a specific consultation with our graduate student body in order to better understand their specific perceptions around mental health needs/shortfalls.</p> <p>This consultation will inform a resource mapping/flow chart to be developed in consultation with FHSGS, Student Wellness (and potentially SGS, if interested).</p>	<p>Dr. Miller will coordinate consultation with the study body.</p> <p>Subsequent resource development efforts will be done in consultation with Dr. Hanna and relevant experts from Student Wellness.</p>	Consultation and resource development will begin in the 2020/2021 academic year, with a plan to implement/distribute the resource in 2021/2022
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#### **Faculty Response**

The Executive Vice-Dean and Associate Vice-President Academic and the Vice-Dean and Associate Dean of Graduate Studies thanked the reviewers for their thorough, thoughtful, and constructive review of the Masters and PhD programs in Biochemistry at McMaster University. They appreciated that the reviewers identified strengths of the program including the depth in the lineup of highly qualified and well-funded faculty supervisors, the demonstrated research productivity of the students and their proven success in competitive scholarship competitions. The reviewers note that the program's international reputation for excellence is a valuable recruitment tool.

They reviewed the program's response to the review and strongly supported Dr. Matt Miller's detailed plan for addressing the recommendations. While recognizing that the Biochemistry program has moved in a planful way toward a research-intensive program with few required courses, they support the program's proposal to consider a renewal of the core course curriculum, as well as enhanced offerings related to career development. In regard to the availability of mental health supports, they agreed with Dr. Miller's observation that such supports are the responsibility of the central university, but that students can be better directed to what is available. They appreciated that the reviewers recognized the stalwart work of Ms. Kush as the program administrator and agree that better direction to students about appropriate sources of support may help with managing Ms. Kush's workload. In the Faculty of Health Sciences, program costs are resourced from the educational revenues to the sponsoring departments, and so the feasibility of increased administrative support should be considered within the budget and priorities of the Department of Biochemistry.

#### **Quality Assurance Committee Recommendation**

**That the Quality Assurance Committee recommend that the Biochemistry M.Sc. and Ph.D. programs should follow the regular course of action with an 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.**

## **FINAL ASSESSMENT REPORT**

### **Institutional Quality Assurance Program (IQAP) Review**

#### **Health Science Education, M.Sc.**

#### **Date of Review: April 27<sup>th</sup> and 28<sup>th</sup>**

*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 Health Science Education M.Sc.. 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 Health Science Education program submitted a self-study in February 2020 to the Vice-Provost and Dean of Graduate Studies to initiate the cyclical program review of its graduate 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 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 remote review on April 27<sup>th</sup> and 28<sup>th</sup>, 2020. The visit included interviews with the Provost and Vice-President (Academic); Vice-Provost and Dean of Graduate Studies, Associate Dean, Grad Studies and Research, Assistant Dean of the program and meetings with groups of current students, full-time faculty and support staff.

The Assistant Dean of the program and the Dean of the Faculty of Health Sciences submitted responses to the Reviewers' Report (May 2020). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

In their report (May 2020) the Review team noted the following strengths and areas for enhancement:

#### **Strengths**

- A commitment to positive student experience and student centeredness.
- The high quality of courses, an excellent caliber of instruction, and the national and international reputations of many of the Program's educators.
- The largely asynchronous delivery of online content, which promotes learning accessibility for learners with diverse professional and personal responsibilities.
- The breadth of inter-disciplinarity and inter-professionalism throughout the program, in terms of both faculty and learners, and the strong inter-professional communication and collaboration that results.
- Staff and faculty responsiveness and nimbleness in meeting individual learner needs.
- Strong emphasis on continuous quality improvement and assurance throughout the program, at the level of the courses, assignments, annual academic events, and overall curriculum.
- The nimbleness and responsiveness of the Graduate Officer (Radomirovic).
- The procedural and content leadership of the Assistant Dean (Grierson).

#### **Areas for Enhancement or Improvement**

- A limited scope of course offerings, which reflect faculty expertise and focus primarily on disciplines oriented towards individual learning.
- Relatively insular governance and administrative structures with contributing members situated primarily in the Faculty of Health Sciences and HSED Program respectively.
- Limited explicit attention to potential issues related to Equity-Diversity-Inclusion.
- Limited tracking and engagement of alumni
- The academic output of the students in the program is limited.

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

*“Specific follow up in a specific timeframe”* details are hyperlinked to the chart for maximal clarity.

Recommendation	Proposed Follow-Up	Responsibility for Leading Follow-Up	Timeline for Addressing Recommendation
<a href="#">1. Add Education Foundations Component</a>	- HS EDUC 700 will be reformed to include these components. - Appropriate faculty contributors will be identified and recruited	Grierson, HSED Curriculum Committee, Monteiro, Bayer, Radomirovic	May 27 <sup>th</sup> , 2020 through June 11 <sup>th</sup> , 2021, and beyond.
<a href="#">2. Recruit Internationally</a>	- Enhance marketing at international conferences - Enhance marketing through global professional networks	Grierson, Sherbino	Beginning September 2021 and thereafter.
<a href="#">3. Revisit the requirement to be a clinician to access the course-based route</a>	-Adjust policy to include access to non-clinician students that have professionally relevant work in a health professional education field.	Grierson, HSED Admissions Chair (Vanstone), Radomirovic	Completed: May 2020
<a href="#">4. Revisit admissions requirements with an eye to EDI.</a>	- Form a Working Group to address 4 objectives related to promoting EDI via admissions	- Grierson, Vanstone	- July 2020 through January 2021, and beyond
<a href="#">5. Potential supervisors provide input regarding admissions of students into the thesis stream</a>	- This recommendation reflects a practice that is already in operation for the HSED program	N/A	N/A
<a href="#">6. Consider how critical social sciences and humanities perspectives could be integrated.</a>	- HS EDUC 700 will be reformed to include these components. - Appropriate faculty contributors will be identified and recruited	Grierson, HSED Curriculum Committee, Monteiro, Bayer, Radomirovic	May 27 <sup>th</sup> , 2020 through June 11 <sup>th</sup> , 2021, and beyond.
<a href="#">7. Include alumni as instructors and/or mentors.</a>	-Develop an HSED mentorship program opportunity that is aligned with MERIT membership program. The program will offer resource and direction to move mentors through a staged progression of larger teaching roles.	Grierson, Sherbino, Chan	-The mentorship opportunity will be in place prior to the residency (HSEDC 700) that starts the 2020/21 academic year (June 3 <sup>rd</sup> 2021).
<a href="#">8. Explore opportunities to identify and communicate with students who may be struggling or falling behind.</a>	- Continue discussions with the Vice Dean, HSGS (Hanna) and the FHS Professionalism Chair (Walton) regarding supporting early-career health professional students that struggle to balance graduate work and clinical practice. -Program-facilitated course monitoring process to be initiated.	Grierson	- Conversations regarding support for early career health professionals are ongoing. These conversations will be intensified over the Summer 2020 term - Program-facilitated process for student monitoring: Fall 2020 term.
<a href="#">9. Upgrade the program coordinator to a program manager</a>	-Review the responsibilities of Graduate Officer and ensure appropriate role is designated	Grierson, Bjilic, Troy-Hempey	July 2020
<a href="#">10. Develop redundancy in leadership</a>	-Dissociate role of Curriculum Committee Chair from that of Assistant Dean, HSED -Develop an Assistant Director Role	Grierson, HSED Curriculum Committee, Bjelic, Troy-Hempey	-Discussions about Chair position: Fall Curriculum Committee Meeting (September 2020) - Discussions re: Assistant Director position: July 2020
<a href="#">11. Integrate some expertise in other areas of education</a>	- HS EDUC 700 will be reformed to include these components. - Appropriate faculty contributors will be identified and recruited	Grierson, HSED Curriculum Committee, Monteiro, Bayer, Radomirovic	May 27 <sup>th</sup> , 2020 through June 11 <sup>th</sup> , 2021, and beyond.
<a href="#">12. Develop part-time thesis option to alleviate the need to provide a stipend.</a>	-HSED offers a part-time thesis pathway for eligible applicants. Stream monitoring continues - Alleviation of financial support for thesis student is not a current goal.	Grierson	Ongoing
<a href="#">13. Invite stakeholders from outside of the program to participate in the Design Thinking Evaluation</a>	-Stakeholder engagement is already a key feature of the Design Thinking Evaluation project.	Bayer	Ongoing
<a href="#">14. Consider broadening curriculum committee membership to allow a less insular structure</a>	-In conjunction with our response to recommendation 10, we will seek members from outside of the HSED faculty	Chair, HSED Curriculum Committee	September 2020 – January 2021
<a href="#">15. Increased collaboration with Program for Faculty Development</a>	-Develop PFD-supported mentorship program	Grierson, Sherbino, Chan	- June 3 <sup>rd</sup> 2021)

### **Recommendation 1**

Consider adding an educational foundations component to the program. This might address philosophy, history, sociology, anthropology, equity, politics, and international perspectives on education. This would address some of the areas of improvement with respect to issues of EDI, and social constructivist perspectives.

**Proposed Follow-up:** Currently, the Program's first residency week (HS EDUC 700) focuses on building up students' competence in managing their self-directed online learning experience, helping them build communities of scholarship, and introducing them to the courses and academic pathways that they may choose to take throughout the Program.

In addition to these goals, one of the stated learning objectives for HS EDUC 700 is that at the completion of the week, students will be able *"to articulate an understanding of the Health Professions Education field, the scope of relevant issues, and the relevance of study within this field to their professional work, which includes: a) recognizing the features and theories of inter-professional health professions education, and to be able to integrate these into their own experience as inter-professional learners within the Program; b) acknowledging the importance of cultural humility (i.e., humbly positioning oneself as a learner with respect to understanding the experiences of others) when interacting within the diverse cultural milieu of health professions education scholarship; and c) understanding the importance of developing a robust command of the HPE literature and skill in academic writing, critical thinking, and scholarly presentation.*

With this objective in mind, HS EDUC 700 presents a natural opportunity to begin our response to this recommendation. The Residency Week already addresses this objective with sessions dedicated to inter-professionalism, equity in education, and unique perspectives on education practice (i.e., humanities-based approaches). We will work to enhance the breadth of these offerings such that the week begins to take the form of an intensive, introductory workshop in education foundations. In particular, we will be mindful to build depth of content in the foundational areas listed above (philosophy, history, sociology, anthropology, equity, politics, and international perspectives on education) and others while also maintaining a focus on preparing students for the online learning environment.

In making this change, Residency Week 1 (HS EDUC 700) will:

1. Serve as a strong foundation for students that choose to build knowledge and expertise in these areas through the pedagogical and education research sessions that support the newly designed capstone portfolio. In mentioning the capstone portfolio, we also wish to draw attention to the seminar series that comprises one arm of this assemblage of academic activities. Several of the listed education foundations are fundamental to topic and perspectives that are shared through this series. Accordingly, we anticipate that student participation in these sessions will enhance their learning with respect to these foundations.
2. Enhance student ability to understand the way in which the content associated with each of their core and elective courses has roots in pertinent education foundations. In this way, we anticipate greater demonstrations of critical integration between the specific course-level perspectives (i.e.,



pertaining to competence assessment) and the general theories that underpin education programming (i.e., the history of outcomes-based curricula).

3. Afford the Program the opportunity to appraise the feasibility of creating a full course in education foundations. While such a course would certainly be a natural fit into our graduate programming, we recognize a need to consider its interaction with current course content, its impact on academic planning, and the faculty expertise needed to deliver such a course. Through a staged approach that begins with the Residency Week, we will be able to determine the most relevant topics for inclusion and to build relationships with faculty that are positioned to offer expertise to our program. Notably, this workshop (and any subsequent course) will require the expertise of faculty that are not currently involved in the Program. In order to recruit faculty with this expertise, the HSED Program will:
  - a. Canvas the Faculty of Health Sciences, MacPherson Institute, and wider McMaster University communities for appropriate Faculty members willing to participate in the HSED Program. Consideration will need to be given to the way in which we present HSED involvement as valuable to contributing faculty.
  - b. Lobby the McMaster Education Research, Innovation, and Theory (MERIT) Program to consider this expertise as they move through current searches for 2 new faculty members. The Assistant Dean, HSED anticipates serving on these search committees.

**Responsibility for Leading Follow-up:**

1. The HSED Curriculum Committee will be responsible for developing a new alignment of learning objectives, teaching and learning activities, and assessments that will form the foundation of a revised HS EDUC 700 Curriculum, which contains explicit attention to enhancing student learning in education foundations. Currently, Residency Week 1 curriculum development is led by committee members Dr. Sandra Monteiro, Dr. Ilana Bayer, and Dr. Lawrence Grierson. We will strike a sub-committee that includes additional HSED members and individuals from outside of the Program to assist in this development.
2. The Assistant Dean, HSED (GRIERSON) will be responsible for identifying and recruiting faculty contributors to this initiative.
3. Identified faculty contributors will be responsible for developing and delivering the education foundations content during Residency Week 1 and/or any subsequent course.
4. The HSED Curriculum Committee will be responsible for evaluating the effectiveness of the revised Residency Week curriculum and determining the value and a viability of building and delivering an Education Foundations course.
5. The Assistant Dean, HSED (GRIERSON) and HSED Graduate Officer (RADOMIROVIC) will be responsible for managing any administrative processes associated with the new development (for e.g., drafting and submitting Curriculum Change Forms where necessary).
6. The HSED Program Staff will be responsible for supporting the development of courseware and the technical operations associated with the dissemination of materials and delivery of content.

**Timeline for Addressing Recommendation:** The proposed timeline for addressing this recommendation is as follows:

- The Assistant Dean, HSED will begin identifying and recruiting potential faculty contributors in concert with submission of this report (May 27<sup>th</sup>, 2020). This will begin with outreach to the MERIT and MacPherson Institute communities.
- An HSED Curriculum Committee sub-committee, which will work to determine the content and form of the new Residency Week 1 activities, will be formed at the next Curriculum Committee meeting: September 15<sup>th</sup>, 2020.
- The sub-committee plans for a revised HS EDUC 700 curriculum will be reviewed and approved by the HSED Curriculum Committee during its Winter term meeting: January 12<sup>th</sup>, 2021
- Revised HS EDUC 700 content and course material will be ready for presentation to the HSED Curriculum Committee Meeting during its Spring meeting: May 11<sup>th</sup>, 2021
- The curriculum will be delivered during the Summer 2021 offering of Residency Week 1 (tentatively: June 7<sup>th</sup> – June 11<sup>th</sup>, 2021).
- Evaluation and appraisal of the education foundations component will occur in concert with the Summer 2021 offering, and will continue throughout the academic year, and subsequent residency week offerings until a determination of its adequacy or need for expansion can be determined.

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## **Recommendation 2**

Explore the possibility of offering the HSED internationally, or perhaps recruiting more internationally.

**Proposed Follow-up:** The HSED Program is an international program. We have students in current cohorts enrolled from United States, United Kingdom, Brazil, Pakistan, Saudi Arabia, and Thailand. However, the majority of our students are domestic, which reflects not only our recruitment efforts but also an adherence to an admission strategy that is contemplative of our ability to matriculate larger cohorts each year and the Weighted Graduate Units process that determines aspects of the Program's funding corridor. At this time, we feel that we have established a sufficient and sustainable base of faculty support and course content to begin expanding recruitment efforts and enrolling more students.

Typically, recruitment has happened in concert with major health professions education conferences in Canada and the United States (for e.g., CCME, AAMC, ICRE). We feel that we have reached a level of saturation with these audiences and will move forward with marketing efforts that will expand recruitment of a more professionally diverse and international cohort of students. In particular, we will ensure that our Program has a marketing presence at future international health professions education and general education conferences (for e.g., Association of Medical Educators of Europe; the Ottawa Conference; EduLearn). We will also be purposeful in our marketing attendance at conferences directed to educators from a wide variety of health professions (i.e., nursing, occupational therapy, dentistry, etc.).

Furthermore, we will make formal recruitment efforts through our professional networks with collaborators in the Netherlands, Australia, Saudi Arabia, and the United States in hopes of recruiting more international students.

**Responsibility for Leading Follow-up:** The Assistant Dean, HSED (GRIERSON) will work with the Assistant Dean, MERIT (SHERBINO) to identify an appropriate list of academic gatherings for marketing efforts and those academic partnerships globally where directed marketing efforts may take place. Dr. Grierson will then spearhead the initiation of these marketing efforts

**Timeline for Addressing Recommendation:** The COVID-19 pandemic casts some doubt on the timeline for future in-person conference activities. We will monitor this situation and begin these efforts in earnest when conferences resume and/or will take advantage of virtual conference interactions that may be available. Contact with global partners will begin in concert with the commencement of the 2020-2021 academic calendar, in September 2021.

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### **Recommendation 3**

Revisit the requirement to be a clinician to access the course-based route

**Proposed Follow-up:** We agree with the Reviewers' comment that the policy that reserves course-based completion pathway to clinicians is overly restrictive. We will adjust this policy such that a broader group of individuals may access this route. We will maintain a focus, however, on admitting individuals into this stream for whom broad coverage of education content is relevant for their professional work. Our goal in this regard is to ensure that any policy revision does not create a situation whereby our course-based Program is open to recent undergraduates looking for graduate training to supplement applications into other fields. Accordingly, the new policy will still contemplate the way in which this stream is appropriate for professionals working in the health education field, but will not be exclusive to clinicians and clinical educators. This change will permit professionals in relevant program coordinator and project management roles to benefit from this education pathway.

**Responsibility for Leading Follow-up:** The Assistant Dean, HSED (GRIERSON) will discuss this policy change with the HSED Admissions Chair (VANSTONE). The Graduate Officer (RADOMIROVIC) will ensure that all program documentation, front-facing web materials, and articulations of policy at the Graduate Studies levels are updated.

**Timeline for Addressing Recommendation:** Immediately. This policy has already been discussed and approved.

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### **Recommendation 4**

Revisit admissions requirements with an eye to EDI.

**Proposed Follow-up:** The HSED Program appreciates the recommendations regarding formal and explicit processes concerning EDI in the admissions and curricular process. We believe that we fundamentally espouse an ethos that is purposeful in promoting equity, inclusivity, and diversity within HSED; but, recognize through this recommendation that, with the exception of dedicated course content, this

philosophy manifests only in an informal way, at the level of the Program culture. To address this we will begin with more formal evocation of these principles in our admissions process. This will begin with the development of an Admissions Committee working group that will address to four objectives pertaining to EDI. These are:

1. To recruit more purposefully individuals from traditionally under-represented groups in health professions education scholarship. We anticipate these groups to reflect representation as a function of health professional affiliation and as a function of identity characteristics. For instance, we may develop marketing efforts designed to recruit potential full-time thesis students associated with the student-led Black Aspiring Physicians of McMaster (BAP-MAC).
2. To identify and develop data sources that will permit the Program to monitor the application pressure and application success of individuals from the identified groups with respect to gaining admission to the HSED Program.
3. To consider mechanisms for operationalized Programmatic funding sources to most appropriately offer financial support and incentive to applicants from the identified groups.
4. To develop education interventions that will support the success of students from the identified groups in the completing the HSED curriculum.

**Responsibility for Leading Follow-up:** This process will begin through conversation between the Assistant Dean, HSED (GRIERSON) and the HSED Admissions Chair (VANSTONE). Grierson and Vanstone are regular medical education research collaborators who have addressed issues of EDI in merit-based forms of admissions in the scientific literature [See: De Freitas, C., Grierson, L., & Vanstone, M. (2019). When I say... merit. *Medical Education*, 53(9), 858-860.]. Through these initial conversations a process for developing a working group will be established. At this time, we anticipate extending invitations to members of the HSED Admissions Committee and Curriculum Committee, members of the wider FHS and McMaster faculty, and external consultants with particular expertise in issues of EDI and admissions and unique perspective as it pertains to the HSED program. In particular, we anticipate extending invitations to the Chair, Diversity and Engagement, Undergraduate MD Program (CAMPBELL) and Director, Indigenous Students Health Sciences Office (SOU CY). With respect to external consultation, we anticipate extending invitations to Chante DeFreitas and Kayonne Christy. DEFREITAS and CHRISTY were both admitted to the HSED program and awarded OGS graduate scholarships within our program. DeFreitas completed the program, *summa cum laude*, and completed thesis work on barriers to students from low-income families in gaining admission to health professional training programs. Christy is co-founder of the BAP-MAC group, and declined the HSED offer, choosing rather to pursue a Master of Sociology at UBC. The HSED Program is prepared to offer financial stipends to engage with external consultants and active students on this matter.

**Timeline for Addressing Recommendation:** Working group to be established during the Summer 2020 term (approx. July 1<sup>st</sup>, 2020), with the hopes of developing an implementable plan in advance of the Winter 2021 admissions cycle (January 2021).

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### **Recommendation 5**

Consider having potential supervisors provide input regarding admissions of students into the thesis stream of the program.

**Proposed Follow-up:** This is already a fundamental part of the process of matriculating students into the thesis-based stream. Students are required to secure a Supervisory commitment before they can be admitted into thesis studies. The Program office facilitates these relationships for interested students as they develop their packages. Furthermore, potential faculty supervisors are invited to review files for all applicants that have indicated an interest in thesis studies. Faculty that express interest in supervising any of these students are connected to the individuals. The relationship between student and faculty is considered when determining acceptance into the Program.

**Responsibility for Leading Follow-up:** The Assistant Dean, HSED (GRIERSON) will ensure these processes continue.

**Timeline for Addressing Recommendation:** The recommendation is already being addressed as suggested.

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### **Recommendation 6**

Consider how critical social sciences and humanities perspectives could be integrated.

**Proposed Follow-up:** See response to Recommendation 1. The described response to that recommendation will enhance our ability to integrate social sciences and humanities approaches into our curriculum. Similarly, recruiting Faculty contributors to facilitate the response to Recommendation 1 will provide additional means to add these forms of expertise to our Program.

**Responsibility for Leading Follow-up:** See described responsibilities for Recommendation 1.

**Timeline for Addressing Recommendation:** See described timeline for Recommendation 1.

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### **Recommendation 7**

Consider whether alumni could be more fulsomely integrated into the program as instructors and/or mentors.

**Proposed Follow-up:** We appreciate this Review comment and are delighted to hear that our alumni are interested in contributing to the Program after graduation. We will work to develop a mentorship opportunity for the HSED Program. We will organize this in a manner aligned with the MERIT membership program that works to build our local community of health professions education expertise. This mentorship will offer instrumental direction and resource to interested alumni as well as opportunities to work with students as they manage their Program requirements. These interactions will be essential at Program outset, during academic planning, and as learners prepare their Capstone Portfolios. We envision

the mentors serving as assignment assessors and, where there is alignment in expertise, as instructors in courses. The mentorship program will also facilitate mentor growth into larger teaching roles (i.e., thesis supervisory committee work; course coordination). Resources for mentors will be developed in concert with MERIT and the FHS Program for Faculty Development (PFD) at McMaster University.

**Responsibility for Leading Follow-up:** The Assistant Deans of the HSED, PFD, and MERIT programs (GRIERSON, CHAN, SHERBINO) meet regularly to discuss conjoint program operations. Drs. Grierson, Chan, and Sherbino will be responsible for following up on this recommendation.

**Timeline for Addressing Recommendation:** Given the integrated nature of the 3 programs, the resources currently available in the PFD Program, MERIT's established membership, and the HSED practice of matriculating graduates into the MERIT community, we are well positioned to articulate the foundations of a mentorship program in short order. We anticipate the details of the program to be developed, as we come to understand the interests of alumni, over time. However, we will aim to have the first iteration of a mentorship opportunity for alumni in place in advance of our the 2020-21 offering of HS EDUC 700 (Residency Week 1), which has been modified this year to accommodate the public response to of COVID-19 pandemic. This curricular component is scheduled as a virtual offering for September 7<sup>th</sup>-8<sup>th</sup>, 2020. We will build and revise the mentorship program so that it is more integrated and operational in time for the 2021-22 offering residency weeks.

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### **Recommendation 8**

Explore whether there are other opportunities to identify, and communicate, with students who may be struggling or falling behind.

**Proposed Follow-up:** Review of our student files indicates that the students most likely to fall behind in our Program are those early in their health professional training career and establishing their clinical practice. Often times, they are concurrently completing another postgraduate degree in a clinical field. These students regularly find themselves with more professional work than anticipated, and are unable to maintain as much progress in HSED as they had anticipated. Interestingly, these students will also be hesitant to declare their challenges with progress, expressing the notion that they need to demonstrate excellence in all facets in order to be perceived favourably in their clinical field. The Program has already initiated discussions with the Vice Dean, HSGS (HANNA) and the FHS Professionalism Chair (WALTON) regarding approaches to identifying and supporting these students. This activity will continue.

There are also opportunities for more active monitoring of student engagement within courses through metrics pertaining to student activity in the course discussion forum that are made available via the Avenue-2-Learn Learning Management System. For the 2020-21 academic year, the HSED Program will commit to reviewing student engagement metrics for all courses at the 1/3 mark of each academic term. These metrics will be assembled and discussed with respective Course Coordinators. Course Coordinators will be encouraged to contact those students for whom engagement levels are concerning to determine whether there are contextual influences that are impacting their ability to participate in the course. These conversations will be a foundation for determining appropriate accommodations to facilitate student

success in the course as well as the Program. After initial discussions, course coordinators will continue to make concerted effort to monitor the subsequent engagement of these students. Students that continue to demonstrate difficulty will be connected with the Assistant Dean, HSED (GRIERSON) for consultation and discussion about academic planning and access to student support resources. Course coordinators will also be reminded to review class activity pertaining to the completion of assignments and performance on evaluations. They will similarly be directed to contact students that are demonstrating challenges in these areas.

**Responsibility for Leading Follow-up:** The Assistant Dean, HSED (GRIERSON) will be responsible for continuing the current discussions about supporting busy early-career professionals in the Program. Each Course Coordinator will be responsible for increasing monitoring and contact with students demonstrating indicators of disengagement.

**Timeline for Addressing Recommendation:** Resources will be developed over the Summer 2020 term, and Course Coordinators will receive direction and guidance about enhanced monitoring at the beginning of the forthcoming term (September 2021).

[\[Return to Chart\]](#)

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#### **Recommendation 9**

Consider upgrading the program coordinator to a program manager

**Proposed Follow-up:** We agree that the current Graduate Officer (RADOMIROVIC) is indispensable to the HSED Program, and we appreciate the Reviewers' recommendation for re-considering her role with the Program. We will begin a review of the roles and responsibilities carried out by the Graduate Officer, the relevant positions in comparable graduate programs in the FHS, and the Officer's personal and professional aspirations. As information is gathered, we will pursue reconfiguration of the position, as necessary, in order to ensure that the Program's needs are appropriately met and that the individuals that provide service to the program are appropriately recognized for their contributions.

**Responsibility for Leading Follow-up:** The Assistant Dean, HSED (GRIERSON) will lead this review, seeking support from administrative leaders in HSGS and Education Services at McMaster University. In particular, the process will begin via discussion with the HSGS Program Manager (BJELIC) and the Executive Director, Education Services (TROY-HEMPEY) to determine appropriate processes that are consistent with McMaster University's hiring and promotion policies.

**Timeline for Addressing Recommendation:** Dr. Grierson will initiate these meetings for early July 2020.

[\[Return to Chart\]](#)

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#### **Recommendation 10**

Consider redundancy in leadership to allow for succession and alleviate burden

**Proposed Follow-up:** The Program will discuss with the Curriculum Committee the dissociation of the role of Curriculum Chair from that of the Assistant Dean, HSED. This arrangement had proved effective

elsewhere in the HSED Program. Specifically, Dr. Meredith Vanstone serves currently as the Admissions Chair for the Program, which frees Dr. Grierson from review of applicant files. This arrangement works well insofar that it allows Dr. Grierson to offer information and direction to candidates without creating conflicts of interest around the admissions process. A similar dissociation of leadership for curriculum would alleviate burden while also providing greater opportunity for other perspectives to come to the fore.

The Program will consider the development of an Assistant Director role for the HSED Program. The potential for such a role will be discussed with Program Manager, HSGS (BJELIC) and Executive Director, Education Services (TROY-HEMPEY) in early July 2020.

**Responsibility for Leading Follow-up:** The Curriculum Committee will consider the dissociation of the role of Chair, Curriculum Committee and Assistant Dean, HSED. The Assistant Dean, HSED will discuss an Assistant Director role with HSGS Program Manager (BJELIC) and Executive Director, Education Services (TROY-HEMPEY).

**Timeline for Addressing Recommendation:** The Curriculum Committee will be approached about the Chair position at its next scheduled meeting (September 15<sup>th</sup>, 2020). The Assistant Dean, HSED will approach HSGS and Education Services in early July 2020 to discuss the possibility of an Assistant Director position in the Program.

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### **Recommendation 11**

Integrate some expertise in other areas of education

**Proposed Follow-up:** See response to Recommendation 1. The described response to that recommendation will enhance our ability to integrate social sciences and humanities approaches into our curriculum. Similarly, in recruiting Faculty contributors to facilitate the response to Recommendation 1 will provide additional means to add these expertise to our Program.

**Responsibility for Leading Follow-up:** See described responsibilities for Recommendation 1.

**Timeline for Addressing Recommendation:** See described timeline for Recommendation 1.

[\[Return to Chart\]](#)

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### **Recommendation 12**

Consider a part-time thesis option to alleviate the need to provide a stipend.

**Proposed Follow-up:** We appreciate the Reviewers' recommendation and understand their desire to promote the alleviation of student stipends through part-time studies. The Program offers a part-time thesis currently, but reserves admission to this stream to those individuals that are not in position to pursue full time theses because they are restricted by full time work responsibilities within the McMaster community. The reason for this is that notions of "thesis" work are rarely aligned with notions of "part



time” studies. The mis-alignment between these two was brought to our attention by the previous Vice Dean, HSGS (HAYWARD), with indication that it may put faculty in difficult positions with respect to the support they provide thesis students during the periods that they are not formally enrolled in studies. Thus, we moved accordingly to dissuade the part-time thesis option.

Tangentially related to this recommendation, the Program has an unfortunate history of admitting full-time thesis students into the Program and not providing any stipend. It has been an explicit effort on behalf of the current Program leadership to ensure that all full time thesis students receive a stipend commensurate with other graduate programs at McMaster University. We feel that this process, while not well received by many faculty, will ensure a higher caliber of thesis student and greater sense of commitment from faculty. Collectively we believe that this will promote better learner success in their program. From this perspective, we anticipate that our new stipend process will encourage students to complete the program in time and will give way to better scholarly outputs associated with thesis completion (i.e., peer reviewed publications).

We will continue to monitor the progress of the limited number of students in the part-time thesis stream, working to identify those features of the program that may be enhanced to create more opportunity in this stream without serving as a work-around for providing the financial support that thesis students need and deserve.

**Responsibility for Leading Follow-up:** The Assistant Dean, HSED (GRIERSON) will ensure that continuous quality assurance of the full-time and part-time thesis streams is maintained.

**Timeline for Addressing Recommendation:** Ongoing.

[\[Return to Chart\]](#)

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### **Recommendation 13**

Consider inviting stakeholders from outside of the program to participate in the Design Thinking Evaluation

**Proposed Follow-up:** The HSED Design Thinking Evaluation project is a pilot project funded through the MacPherson Institute (MI), which is designed to develop a foundation for understanding online approaches to graduate education across the FHS at McMaster University. Accordingly, a plan for engaging stakeholders is already an inherent feature of the evaluation design.

**Responsibility for Leading Follow-up:** The MI funding has been awarded to HSED Faculty Member, Dr. Ilana Bayer, who is responsible for all aspects of the Design Thinking Evaluation Project.

**Timeline for Addressing Recommendation:** Ongoing.

[\[Return to Chart\]](#)

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### **Recommendation 14**

Considering broadening curriculum committee membership to allow a less insular structure

**Proposed Follow-up:** We are excited about this recommendation. It will be refreshing to include other perspectives into the Curriculum Committee. We intend to pursue a response to this recommendation in sequence with our response to Recommendation 10. In particular, we will invite the new Chair, Curriculum Committee to include members from outside of the HSED faculty as advisors and contributors to this committee. By allowing the new Chair to make these invitations, we feel that we are responding in a way that captures the essence of a less insular approach to Program governance.

**Responsibility for Leading Follow-up:** Chair, Curriculum Committee

**Timeline for Addressing Recommendation:** Considerations for a new Chair, Curriculum Committee will begin September 15<sup>th</sup>, 2020. We anticipate invitations for membership to be circulated such that a new, outside member may be added to the Curriculum Committee for the January 12<sup>th</sup>, 2021 meeting.

[\[Return to Chart\]](#)

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### **Recommendation 15**

Consider increased collaboration with/representation from the Program for Faculty Development to be more integrated with this graduate program. Given Dr. Teresa Chan's role in both programs, we see potential for increased collaboration.

**Proposed Follow-up:** See response to Recommendation 7

**Responsibility for Leading Follow-up:** See response to Recommendation 7

**Timeline for Addressing Recommendation:** See response to Recommendation 7

[\[Return to Chart\]](#)

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#### Faculty Response

The Dean thanked the reviewers for their thorough, thoughtful, and constructive review of the Master of Health Science Education Graduate Program and appreciated that the reviewers identified strengths of the program including the student-centered and interprofessional approach, the program's focus on continuous quality improvement, the high caliber of the online courses and participating faculty, and the excellent leadership provided by Dr. Grierson as "a clear driver of success in the program."

They also thanked the reviewers for their thoughtful work in identifying areas for improvement and their specific recommendations. The Dean reviewed the program's response to the review and strongly support Dr. Grierson's detailed plan for addressing the recommendations. In relation to international recruitment, the Faculty will work with the program to ensure that its plans for international enrolment align with the Faculty's overall internationalization and graduate enrolment strategies. The Faculty will also work with Dr. Grierson to ensure that the duties of the program coordinator role are correctly aligned with the appropriate job category, and to consider whether the appointment of an Assistant Director is feasible and required for a program of this scale.

#### Quality Assurance Committee Recommendation

**That the Quality Assurance Committee recommend that the Health Science Education M.Sc. program should follow the regular course of action with an 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**

## **FINAL ASSESSMENT REPORT**

### **Institutional Quality Assurance Program (IQAP) Review**

#### **Health and Radiation Physics and Radiation Sciences Graduate Programs**

**Date of Review: March 3<sup>rd</sup> and 4<sup>th</sup>, 2020**

*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 Radiation Sciences. 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 Radiation Sciences program submitted a self-study in January 2020 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 3<sup>rd</sup> and 4<sup>th</sup>, 2020. 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, full-time faculty and support staff.

The Director of the Program and the Dean of the Faculty of Science submitted responses to the Reviewers' Report (May 2020 and January 2021). Specific recommendations were discussed and clarifications and corrections were presented. Follow-up actions and timelines were included.

### Strengths

- As it is currently constructed and operating, the Radiation Sciences Graduate Program provides a strong foundational training and education for its students. Interactions with faculty appear to be extremely productive and collegial. Faculty are accomplished and, in multiple instances, are considered to be internationally recognized leaders in their respective fields. The program has an excellent history in producing HQP and it is the opinion of the reviewers that it can continue in this capacity moving forward. Invested resources at this time are appropriate for the size and scope of the program. There has been renovation of existing space in order to provide for excellent housing of the current trainees and administrative staff.

### Areas for Enhancement/Improvement

- (from section 8) The placement of Radiation Sciences underneath the “umbrella” of the Department of Physics appears to have been done for administrative or budgetary simplicity rather than for a reason related to the academic mission. Given the potential growth opportunities for the Department moving forward and an expansion of its current mission and profile, removing the Department from Physics and allowing it to grow with a dedicated leadership and vision (perhaps re-branded as “Radiation Medicine” or something similar) is considered by the reviewers to be an appropriate step at this time.
- (from section 7) There may be an opportunity to re-structure the program as an independent Department (with a modified title: “Radiation Medicine”?), with its own Chair, that specializes in four distinct efforts:
  - Radiation Biology: this would require some investment for succession planning, although there are also outstanding mid-career investigators in place that can lead more innovative approaches into human- and animal-health as well as environmental impacts of radiation exposure. This would be an academic stream leading to traditional graduate outcomes.
  - Health Physics: this might be the most promising effort for Radiation Sciences, as it will culminate in the desired professional Masters program. As this would be an on-line delivery, it would require support for its development and launch, but would be internationally appealing (based on the program history and current international need) and should be revenue generating as it would represent a significant option for continuing development for professionals seeking the opportunity.
  - Clinical Medical Physics (CAMPEP): this also has potential for significant returns on investment, although somewhat more difficult to envision than the Health Physics program discussed above. The Canadian marketplace for CAMPEP is already very crowded, with ~13 graduate programs already accredited, and there is some concern that this number may already be oversaturating the demand in radiation physics. What would make McMaster unique as compared to its competitors? It would also require a significant increase in the research funding of the involved faculty to support the trainees. This could perhaps be buffered if the Health Physics program is revenue generating, but this considered to be of secondary importance to the Health Physics Program.
  - Radiation Physics: this would be the default program within the Department that trains students on the fundamental aspects of the discipline leading to traditional outcomes. This would share some crossover with Radiation Biology, but with obvious differences in the final product.

- (from section 1) The geographic distribution appears to be a concern that will only grow in time. A significant number of students are currently in a position where significant amounts of their time is spent traveling back and forth between main campus and the Cancer Center. This travel is associated with not only their coursework requirements, but also for their TA duties. The amount of time that is essentially lost and utterly unproductive on a weekly basis is considerable and can easily reach 10 hours/week/student based on a rough estimate. This concern is also present for the faculty members in the Department that must move between campuses regularly for curricular delivery, etc.

McMaster University and the program in Radiation Sciences is at a crossroads with multiple potential pathways. Left alone, with minimal investment and housed underneath the Department of Physics, the program in Radiation Sciences will likely continue to move forward with low student numbers, a reputation that will become increasingly difficult to maintain, and a faculty that will struggle to maintain sufficient funding to attract and retain more PhD students.

It is recommended that McMaster University engage in a process by which the historic strengths of the program, in combination with the Juravinski Cancer Center and the existing infrastructure in the region are re-evaluated in the context of a broader interdisciplinary academic and continuing professional development mission.

Can McMaster build on the existing and historic strengths of the program in order to fully integrate the basic sciences established within Radiation Sciences with Oncology, health outcomes, epidemiology, etc.? As noted by one of the reviewers “this is medical physics, where is the integration with the medical programs?” A similar approach can be taken with the program expertise in Radiation Biology, where the impact of radiation on human, animal and environmental health outcomes is a critical area for investigation and McMaster appears to be almost uniquely situated to capitalize on this opportunity.

The faculty in Radiation Biology have world-class reputations in an area which can be broadly described as Low Dose Radiation Biology. This is a rapidly developing and very important field which, in fact these investigators had a large part in creating with implications in many areas including environmental, ecological, human health and long-term effects of therapy. Research in other areas of Radiation Biology is however still of more than historical importance and it may be that collaborations with Molecular Biologists and research-oriented Radiation Oncologists would be worth exploring.

From the Continuing Professional Development perspective, it is recommended that the investment into the Masters in Health Physics be continued and, potentially, expanded. This is considered to be an additional area in which McMaster and the region have a competitive advantage over the vast majority of other institutions and that their strong reputation for producing HQP from the program can lead to significant professional and economic benefits. While there is a strong desire on the part of the faculty and students in the program to earn CAMPEP accreditation, and the history of the program and the infrastructure surrounding it certainly makes this appealing, it is unclear that the current funding profile of the faculty will be sufficient to make this investment of time and resources beneficial. It is suggested that this be developed in the aftermath of the Health Physics program, with potential revenue generation buffering the costs associated with additional trainee investment into CAMPEP.

- (from section 3) There was some concern expressed by faculty and students that the first year was very heavy with courses, and that some flexibility would be appreciated so that courses could be selected that are aimed at specific student research areas, and to allow time for research in the lab during the first critical year. The role of and support for the faculty at the

Cancer Center in the evolution of the program needs to be seriously considered. Their involvement will be vital for the program moving forward on multiple fronts, but there appears to be no attention paid to succession planning or support for these members of faculty.

- (from section 4) It is strongly encouraged that more formalized approaches be developed for graduate student presentations of research to broader groups (with the opportunity to receive feedback). Attendance at appropriate clinical Grand Rounds should be strongly encouraged/mandatory.
- (from section 7) More novel areas of investigation such as radiomics, advanced data analytics, AI/machine learning, and direct engagement with the clinical operations were not discussed to a meaningful extent. This is an area for concern as it suggests that there are opportunities on which McMaster may not be capitalizing.

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

<b>Recommendation</b>	<b>Proposed Follow-Up</b>	<b>Responsibility for Leading Follow-Up</b>	<b>Timeline for Addressing Recommendation</b>
Geographic isolation	a) Shuttle b) Enhanced IT c) Event scheduling	Hunter & JCC faculty Chettle/Rheinstadter	Initial evaluation by Dec 2020
(JCC) faculty research funding	Provide low cost access to research students	Hunter Chettle/Rheinstadter	Initial evaluation by Dec 2020
Deeper links with JCC	CAMPEP may lead to greater engagement	Hunter Rheinstadter/Luke	Present recommendation to Dean of Science by May 2021
Succession planning	New appointment in Medical & Biological Physics New faculty appointments	Luke with P&A in consultation with JCC & other key stakeholders	Initial evaluation by May 2021 Full proposals emerging over 2021-24
Community Engagement	Closer links with current graduate student activities in P&A	Rheinstadter	Emerging discussion & integration during 2020-21 academic year
Radiation Biology succession planning	Discussions between P&A and Biology and between Physics and Radiation Oncology at the JCC	Rheinstadter/Chettle with Dept Biology Hunter with Radiation Oncology	
Professional MSc in Occupational Health Physics	Working group engaged in development	Byun with working group	Submit proposal to Faculty of Science for September 2020, follow established time line

	Consult MacPherson re on-line resources		
CAMPEP costs/benefits	Continued evaluation by working group	Wierzbicki & Hayward with Chettle & Rheinstadter	Seek financial advice from within Faculty of Science by end of June 2020, submit proposal to Faculty of Science by September 2020
1 <sup>st</sup> year course heavy	Move Med Phys 775 from Fall to Winter	Byun	Implement for Winter 2021, evaluate at end 2020-21 academic year
Grad student seminars	Participation in P&A Symposium Day Establish journal clubs	Rheinstadter, JCC faculty, Mothersill/Seymour, Byun	Continue existing participation in P&A Symposium Day Establish or re-emphasise journal clubs by December 2020.
Attendance at Grand Rounds	Encourage attendance at P&A colloquia	Rheinstadter and Radiation Sciences faculty supervisors in Med Phys and Health Phys	Renewed emphasis for start of 2020-21 academic year
Radiomics etc.	Include in criteria for succession planning & search criteria	Luke and P&A search committee	Include in discussions beginning September 2020, hopefully resulting a successful search by July 2021.

### Faculty Response

The Dean thanked the review team for their constructive report on the Radiation Sciences Graduate Program and was pleased to see recognition of both the strong international reputation of the faculty in the program and the quality of the training being provided to the students. This program was rehomed within the Department of Physics and Astronomy after the dismantling of the former Department of Medical Radiation Sciences in 2015. While the reviewers offered the suggestion of developing an entirely new Department to house the program as a means to address its perceived isolation, we agree with the program leadership that keeping it placed within the Faculty of Science makes the most sense at the present time. We will support the program in further developing interdisciplinary partnerships within the Faculty of Science and in strengthening their existing linkages with other Faculties. To address one of the concerns about succession planning, we are currently in the process of searching for a new tenure stream faculty appointment in the area of Medical and Biological Physics for a proposed July 1, 2021 start date.

The recommendations made by the review team for enhancement have been carefully considered by the program leadership, and some of these (related to the course balance of the curriculum and increased engagement of graduate students in seminars/colloquia/grand rounds) have been addressed



already. The geographic isolation is an ongoing challenge, but the program is exploring various ways to deal with this issue. We agree with the reviewers that a major first initiative should be the development of the professional Masters in Occupational Health Physics, and the department is in the final stages of completing their proposal for this program. We also agree that it would be wise to delay the process for gaining CAMPEP accreditation until the new professional Master's program is underway, as revenue from the Health Physics Masters could help buffer the costs associated with the CAMPEP accreditation.

One of the new developments at McMaster which will help guide us in the implementation of initiatives with the Radiation Sciences program is the pending arrival of a new Assistant Vice President (Nuclear) in April, 2021. This is a new position designed to advance McMaster's role as a global leader in nuclear research and we expect that the new VP will work closely with the Radiation Sciences graduate program to both enhance the existing research enterprise and develop/lead new initiatives related to research-driven economic development and commercialization.

The Faculty of Science is committed to supporting the Department of Physics and Astronomy as it moves forward with the action plan associated with this review. Together with the program leadership will work to enhance the many strengths while continuing to reflect on our processes to engage in continued program enhancement.

#### **Quality Assurance Committee Recommendations**

**That the Quality Assurance Committee recommend that the Radiation Sciences Program should follow the regular course of action with an 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.**

# FACILITY SERVICES

## ENERGY MANAGEMENT PLAN

2021/2022



FACILITY SERVICES



## A Message from the AVP

Debbie Martin, Assistant Vice President and Chief  
Facilities Officer, MBA, CPA, CGA



In alignment with McMaster University's strategic vision, Facility Services is making a positive impact on our world by focusing on sustainability. Across McMaster's campus, our utilities group is initiating projects that conserve energy and reduce greenhouse gas emissions.

Since 2013, we have completed over 23 energy-savings projects campus-wide, with two currently in progress and plans for another 12 to begin over the coming years.

This year, our team is taking the first step in the university's Net Zero Carbon Roadmap. As part of this journey, by 2050 we are planning to completely negate the amount of greenhouse gases produced by human activity on campus.

I would like to thank our team members who collectively worked to create the university's Net Zero Carbon Roadmap, developing business cases for the various components of the strategy, including some of the projects detailed in this report. For example, an upcoming project that changes power generation on campus will reduce McMaster's carbon footprint by over 30% in 2022.

Once again, we have illustrated how our sustainable energy projects align with the United Nations Sustainable Development Goals (SDG's). Learn more about this on page 13.

I am extremely proud of the work that our staff have done to develop this year's Energy Management Plan as we strive to be a leader in the area of sustainability.

Debbie Martin  
AVP and Chief Facilities Officer

**"At McMaster, we have always challenged our community to come up with big ideas to solve the world's greatest challenges, with a razor-sharp focus on the UN's Sustainable Development Goals"**  
**David Farrar, President, McMaster University**

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# Executive Summary

McMaster is committed to maintaining a safe and sustainable campus. Home to a diverse and innovative faculty and internationally renowned researchers, McMaster University has traditionally affirmed the need for triple-bottom-line decision making considering the environmental, social (i.e. user comfort and safety) and economic ramifications of the University's actions. With this approach, various projects have been evaluated in the past and new projects proposed with the aim of creating a sustainable campus environment.

McMaster aims to reduce its utility consumption and GHG emissions in accordance with the targets outlined in the Net Zero Carbon Roadmap (insert link). This means a reduction of 75% in GHG emissions by 2030 and 90% by 2050. Electricity, and natural gas consumptions will be reduced to meet these goals through various energy and carbon reduction projects. Water consumption will remain at a reduction of 5% annually as per the targets established in the 2019/2020 EMP.

These significant reductions will be accomplished through the various projects proposed in this updated EMP plan with a total investment required of over **\$75M** by 2030. McMaster currently emits **40,400 tonnes of CO<sub>2</sub>e** annually from its district steam system, cogeneration system, emergency generators and fleet vehicles. It is anticipated that McMaster's GHG emissions can be reduced to **15,500 tonnes of CO<sub>2</sub>e** annually by 2030 through the completed, ongoing, and proposed projects highlighted in this report. Future versions of the Energy Management Plan will focus on progress towards meeting these annual targets.

The progress of the energy management plan will be based on existing baselines and benchmarks with other Universities, rooted from utility consumption data. A yearly analysis of the utility consumptions will be conducted to ensure that targets are met. Building performance can be compared and user groups within each building be made aware of how their buildings are performing in comparison to the others in the hopes of stimulating further energy conservation.

Many of the proposed projects are awaiting federal government funding, such as the Municipalities, Universities, Schools and Hospitals (MUSH) program. With the current changes in federal policies concerning carbon pricing, McMaster aims to reduce its usage of natural gas for steam production by implementing various measures (for example, electric boiler installation, demand control ventilation).

In keeping up with various global initiatives, McMaster has adopted Sustainable Development Goals from the United Nations and has identified three distinct SDGs met by the Energy Management Plan. They are as follows:

**7 – Affordable and Clean Energy**

**9 – Industry, Innovation and Infrastructure**

**13 – Climate Action**

With the completion of the net-zero carbon roadmap, the university aims to position its community in an everchanging global environment by continuing to meet the goals in its Energy Management Plan.



# Energy Management Plan Framework

## McMaster University Profile

Founded in 1887, McMaster University is home to more than 30,000 students, and almost 7,500 employees. McMaster University offers a unique educational experience featuring state-of-the-art research facilities, world-renowned educational programs and innovative student services, and located only minutes from Cootes Paradise (a wetland that supports a large variety of plants and animals). Like most Canadian universities, the academic year runs from September until late April, and during this period, just over 4,000 students occupy the university's 13 residence buildings. In the summer months (May-September), many of the residence buildings and classrooms remain unoccupied. Campus occupancy decreases significantly to around 10,000 including summer students, campus maintenance staff, and conference guests. However, this presents a unique challenge to energy management, as the buildings that are partially occupied must have access to heating, lighting and ventilation, thus increasing energy costs, even with lower occupancy.



## Basis for the Plan

McMaster has adopted a triple-bottom-line decision approach when considering new capital projects, policies, and initiatives. This means evaluating each decision based on its environmental, social, and economic impacts. Due to the COVID-19 pandemic, and governmental policy changes in 2020/2021 (federal and provincial), McMaster must strategically position itself when adopting new energy projects and initiatives, to ensure that it benefits its diverse and innovative campus community.

### Environmental

Energy production and usage typically produces greenhouse gases, which contribute to global climate challenges. Concerns about global energy supply and global health effects due to the high consumption of fossil fuels have led many nations and organizations to advocate for a sustainable and responsible energy production/usage. Facility Services is working with the University community and is moving towards greater energy conservation through occupant behaviour change, increased energy efficiency in buildings through technical retrofits, and reduced reliance on fossil fuels (natural gas). Organizations across North America are feeling the challenge of maintaining standards of service, and quality of life, while reducing energy consumption to remain cost competitive.

According to the Independent Electricity System Operator (IESO), the greenhouse gas emissions in Ontario are anticipated to increase to 11 megatonnes CO<sub>2</sub>e by 2030 because of a decline in nuclear production and an increased demand for electricity. This higher demand coinciding with a reduced nuclear generation capacity will partially be made up by an increase in usage of gas-fired generators across the province. Figure 1 shows the IESO's Electricity Sector GHG Emissions, Historical and 20-year forecast. This means that energy projects which reduces direct carbon emissions resulting from burning of fossil fuels, must ensure that the indirect emissions are accounted for in the strategy.

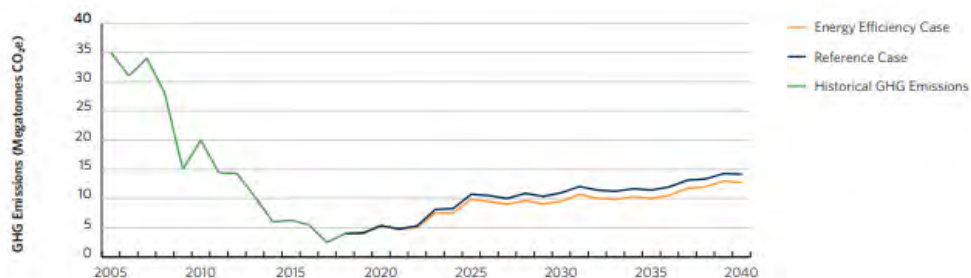


Figure 1: IESO Electricity Sector GHG Emissions, Historical and 20 year Forecast (Reference: IESO Annual Planning Outlook 2020)

This stresses the need for McMaster University to commit to further reducing its Green House Gas emissions. Figure 2 shows McMaster's current GHG emissions trend with no carbon reduction projects in place.

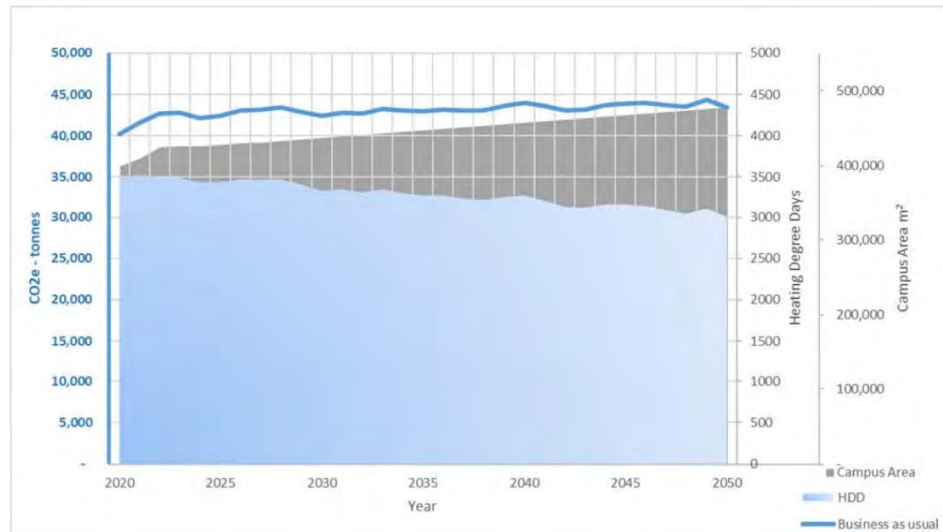


Figure 2: McMaster Baseline Emissions - Business as Usual [Source: Net Zero Carbon Roadmap]



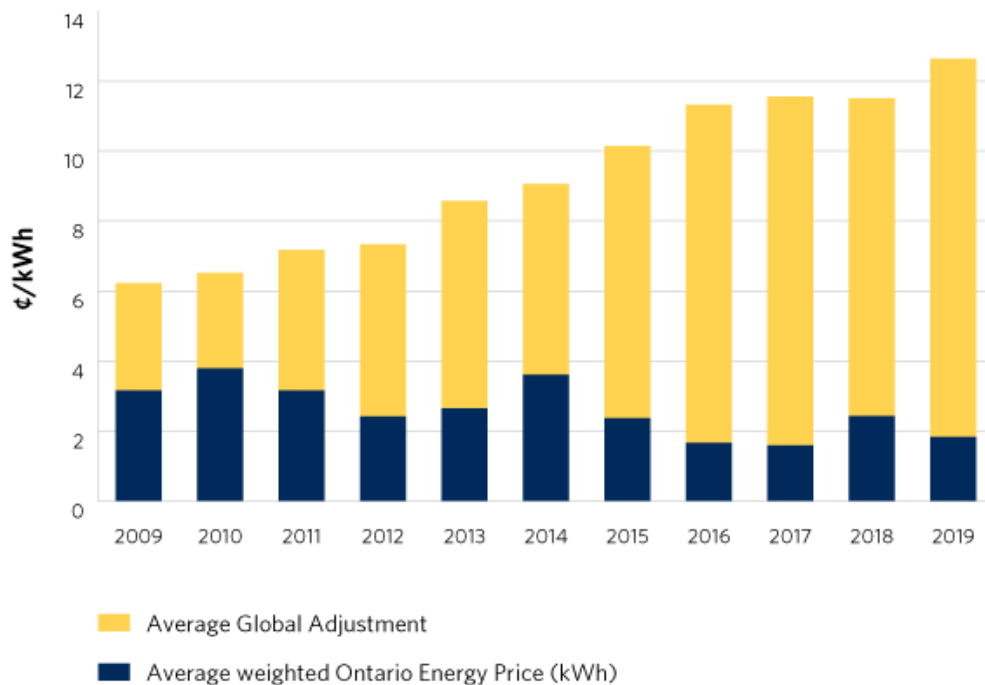
### Economic

Energy is one of the most expensive commodities on campus. Energy consumption is driven by research activities, campus population, facility utilization, new buildings and varying weather.

Energy rates are driven by the provincial market, based on energy demand and government policies.

The price of electricity has increased since 2009 as shown in the Hourly Ontario Energy Price (HOEP) Plus Average Global Adjustment (GA) Cost Graph (Figure 3), which drives the need for energy reduction projects.





**Figure 3: Hourly Energy Ontario Price Plus Average Global Adjustment Cost Graph (<http://www.ieso.ca/Power-Data/Price-Overview/Global-Adjustment>)**

*\* Mid to large businesses pay hourly wholesale prices, also known as Hourly Ontario Energy Price (McMaster University is included in this group), as opposed to time-of-use rates (residential and small business consumers). The total commodity cost of electricity is comprised of the HOEP and the Global Adjustment (GA) cost. The GA cost is intended to cover new electrical infrastructure, maintenance of existing ones and delivery of conservation programs. The GA cost is calculated each month and varies depending on market revenues. For residential and small business consumers, the GA cost is incorporated into time-of-use rates.*

*The cost of electricity for time-of-use rate users are determined when the electricity is used. The Ontario Energy Board (OEB) has provided set rates for off-peak, mid-peak and on-peak hours. These rates are adjusted by the OEB twice a year.*

*As universities no longer qualify for the Ontario Electricity Rebate program as of November 1, 2019 (which provides an electricity rebate of 31.8 percent of the base invoice amount), there will be a stark contrast in electricity rates between residential consumers and the universities across Ontario.*

There have been several policy changes in both the federal and provincial level, affecting both electricity and natural gas prices. McMaster must create a sound strategy to strategically position itself for the next coming years, with the aim of maximizing carbon reduction and minimizing financial implications.

## Social and Research Considerations



One of McMaster University's strategic goals is to develop a “distinctive, personalized, engaging, and sustainable student experience” (Source: McMaster Goals and Priorities, 2021).

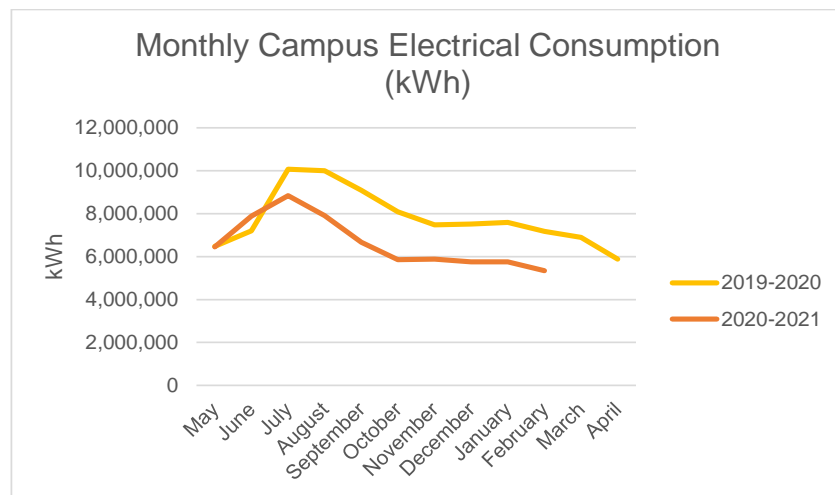
This commitment suggests that one of the highest priorities of the university is to provide an enriching and transformative learning experience for all students. A part of

this is a safe and a comfortable workplace and learning environment for all people using the campus. **Therefore, any energy savings measure, despite its economic savings and environmental benefits must be made in the context of user health, safety, comfort and learning experience.** An effective energy management plan, and novel approaches to new building designs and refurbishments on campus can help to achieve this goal.

McMaster aims to support its academic faculties in delivering a personalized, engaging, and sustainable student experience by providing the utilities and infrastructure required to perform top notch teaching and research. Energy projects such as demand control ventilation allow for a reduction of heating, cooling and ventilation demand in buildings while maintaining the required conditions for proper teaching and laboratory use. Other projects, such as solar panel heating, and rainwater harvesting allow for renewable sources of energy, which reduces the need for district heating and water from McMaster central plant.

## COVID-19 Pandemic

Due to the COVID-19 pandemic, there has been significant changes in the operations of buildings on campus. Since the switch to online learning and work from home strategy for the fall and winter 2020, there has been a decrease in energy consumption on campus. Figure 4 shows McMaster's electricity profile for 2019/2020 and 2020/2021 academic years. For any occupied spaces, McMaster Facility Services has ensured that the spaces are ventilated and thermally conditioned.



*Figure 4: McMaster Electricity Consumption*

However, as McMaster plans for a return to campus for Fall of 2021, there will be an emphasis on adequate ventilation in buildings to reduce risk of COVID-19 transmission. This will require maximizing the delivery of fresh air into the buildings, resulting in a potential increase in heating and electricity (usage will be dependent on occupancy numbers) from the pandemic levels.

With uncertainty posed by the COVID-19 pandemic, McMaster must take a cautious approach in its operations to ensure a good balance between health and safety and energy management.

## Governmental Policy Changes

There have been several changes in the federal and provincial policies regarding carbon and hydro pricing. Some of these changes are a direct result of the COVID-19 pandemic and Canada's commitment to the Paris Accord. A list of significant policy changes is listed below:

- **Ontario Emergency Order (COVID-19):** The provincial government announced early in 2020 that it will defer a portion of the Global Adjustment paid by electricity consumers that do not participate in the Regulated Price Plan (RPP) starting April 1, 2020 to June 30, 2020. Under this order, Class B consumers were charged at a capped rate of \$115/MWh, while Class A consumers received an equal reduction through a Deferral Adjustment Ratio. The total estimated GA deferral is \$800M and is to be recovered in 2021. It is forecasted that this will add \$10.6 million to Class A recovery each month and \$17.2 million to non-RPP Class B recovery.
- **Industrial Conservation Initiative Peak Hiatus:** On June 26<sup>th</sup>, 2020, the Ontario government implemented a "Peak Hiatus" for current ICI participants. This suspended peak chasing for the remainder of 2020. This has effects on the overall provincial peak profile.
- **Increase in Federal Carbon Tax:** On December 2020, the Federal Government announced that it will increase the price on carbon from \$10/tonne of CO<sub>2</sub>e to \$15/tonne of CO<sub>2</sub>e after 2022. This announcement has affected the natural gas price model for McMaster university.
- **Announcement Ontario Budget 2020:** On November 5, 2020, Ontario announced its budget information to the public. The most important portion of the budget as it relates to hydro prices is that the provincial government will transfer approximately 85% of revenue payments currently paid to wind, solar and bioenergy generators from the ratepayer to the tax base. Class B GA consumers are anticipated to pay on average approximately 14% to 16% less of the total invoice. Based on third-party price model/projections, McMaster is expected to have a reduction of 21.5% in its Global Adjustment cost.

## Net-Zero Carbon Road Map

McMaster's continuous commitment to sustainability and carbon reduction has led to the development of a Net Zero Carbon Roadmap. This report was developed by Footprint, which looked at McMaster's current operations and provided several recommendations to achieve net-zero by 2050. The comprehensive report is a culmination of McMaster's past project successes and progressive outlook towards the future. The report highlights the following key recommendations.

- **Energy Conservations Measures:** This focuses on implementing energy saving technologies, such as demand control ventilation (DCV), Energy and Heat Recovery, and Optimization of Building Automation Systems. These measures have been implemented in past projects and will be continually pursued in future renovation and infrastructure upgrades.
- **Reduced Cogeneration Operation:** The cogeneration plant comprises about 30% to 40% of McMaster's greenhouse gas emissions. Reducing its yearly operation will significantly reduce McMaster's campus carbon emissions.
- **Electric Boiler Installation:** McMaster's district steam system provides the heating for all the buildings on campus. With an aging infrastructure, the renewal of the steam system is critical to ensure campus operation resiliency. Instead of investing in traditional gas fired boilers, McMaster will invest in electric boilers to provide part of the campus steam requirements.
- **Installation of Natural Gas Peak Shaving Generators:** To minimize the increase in electricity costs by the electrification of the heating systems on campus, it was recommended to install 10 MW of peak shaving generators and participate in the Industrial Conservation Initiative (ICI) program by the IESO. This program will allow McMaster to realize cost savings from the Global Adjustment portion of its electricity bill.
- **Ground Source Heat Pump – Closed Loop:** A heat pump system uses the stable ground temperature as the source for building heating and heat sink for cooling. With a closed loop system, condenser water is circulated through several u-tube wells drilled to a certain depth. Through the circulation of the condenser water, heat is exchanged between the water medium and the ground.
- **Waste Water Heat Recovery:** This solution utilizes the waste water from buildings on campus as either a heat source or heat sink depending on the energy production requirements. The system uses heat exchangers and heat pumps to extract or expel heat from or to the waste water stream. The conditioned water is then recirculated through a condenser water network using a set of heat pumps.
- **Reactor Heat Recovery:** The nuclear reactor on campus expels heat as part of the reaction process. This solution harnesses this waste heat for campus heating. This is done via a heat exchange system where heat from the reactor is recovered and transferred to a heating loop which is circulated in various buildings. This can be tied in into an overall water condenser loop serving the proposed ground source heat pump system and waste water heat recovery systems.

## Sustainable Development Goals (SDGs)

McMaster is committed to helping in the development of a sustainable and prosperous future. One of the ways McMaster is at the forefront of this initiative is through its adoption of the United Nations' Sustainable Development Goals (SDGs). Twelve of the SDG's focus on various aspects related to energy, such as clean water, climate action, sustainable communities, etc.

The 2021 Energy Management Plan has incorporated three of the 17 SDGs:



7 – Affordable and Clean Energy: Through proposed projects, such as solar panels (refer to Proposed Projects section); McMaster is able to provide clean energy within its campus grounds.



9 – Industry, Innovation and Infrastructure: A number of past projects and proposed projects involves varying innovation for green and sustainable technologies. Some of these include demand control ventilation projects, new fume hood technologies, solar panel roofs, etc.



13 – Climate Action: McMaster recognizes the need for climate action. Through various decarbonisation projects, as highlighted in this Energy Management Plan, McMaster is committed to lowering its overall carbon footprint. Some project examples include but not limited to: electric boiler installation, demand control ventilation, etc.

## Utility Trends and Monitoring

### Utility Baselines

To determine the effectiveness of the Energy Management Plan, proper baselining must be implemented. This entails recording previous Utility trends and actively monitoring changes in Utility consumption/costs to ensure that target goals are met (we will remove the 20/21 figures due to the impact of Covid19 on our campus).

Due to the COVID-19 pandemic and the transition to online learning, utilities across campus have dropped consistently throughout the 2020-2021 academic year.

#### Electricity/Hydro

Reduced occupancy on campus resulted in an overall decrease in electricity consumption for the 2020-2021 academic year. Electricity savings are a result of reduced plug-loads, lighting and HVAC operations. Refer to Figure 5 for McMaster's monthly electrical profile for each academic year.

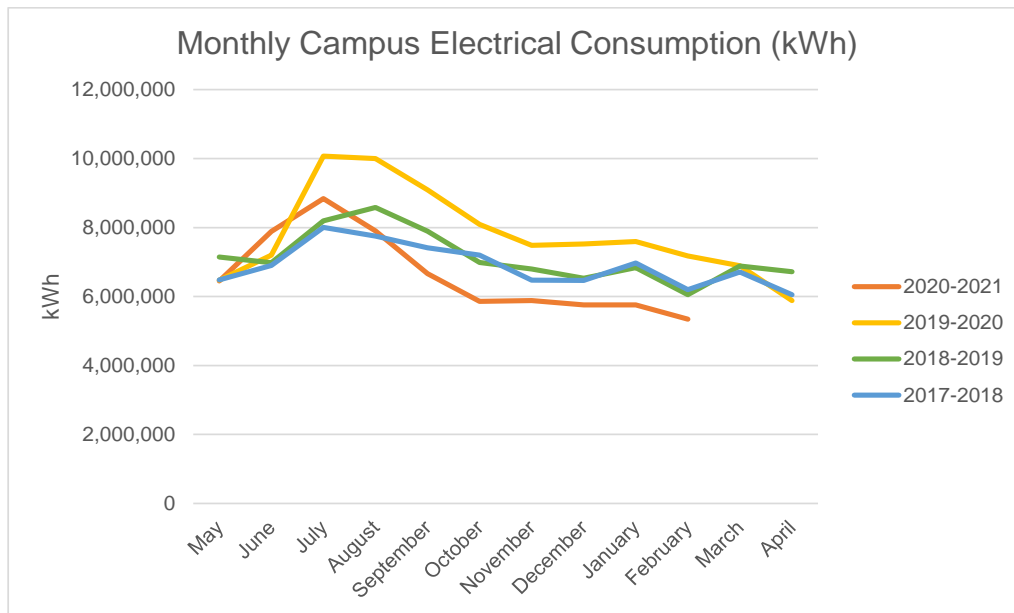


Figure 5: McMaster Campus Electricity Consumption

## Steam

Steam production for 2020-2021 academic year is lower than the 2019-2020 academic year during the months of June to August and from October to December. This is attributed to the reduced occupancy on campus. Refer to Figure 6 for McMaster's monthly steam production profile.

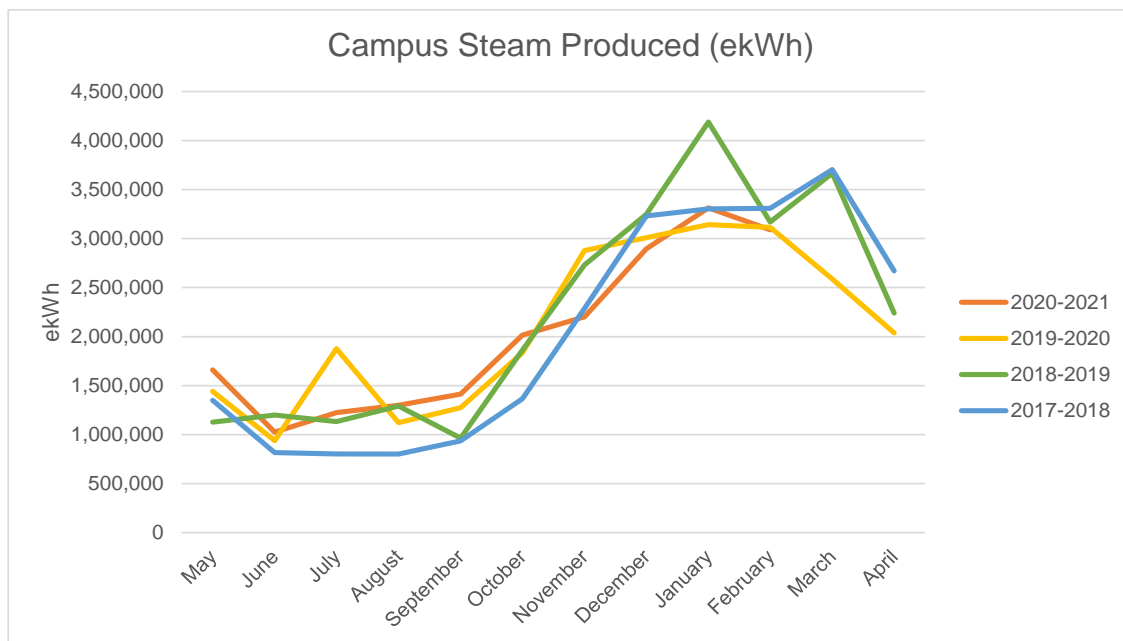


Figure 6: McMaster Campus Steam Production Profile

Steam consumption during the spring and fall season are dependent on ambient conditions. Although there is reduced occupancy on campus, there is not a significant change in steam production profile between 2020-2021 academic year and 2019-2020 academic year. This is mainly because the buildings must remain operational and thermally conditioned. This is to prevent catastrophic failures of equipment and piping services.

Natural gas consumption is predominantly influenced by steam production and power production from the Cogeneration Plant. Refer to Figure 7 for McMaster's monthly natural gas consumption profile. In 2019-2020 academic year, the cogeneration plant did not operate during the months of April, May, and June for maintenance/repairs. This is evident by the significant difference in natural gas consumption for the months of April to June between 2019-2020 academic year and 2020-2021 academic year.



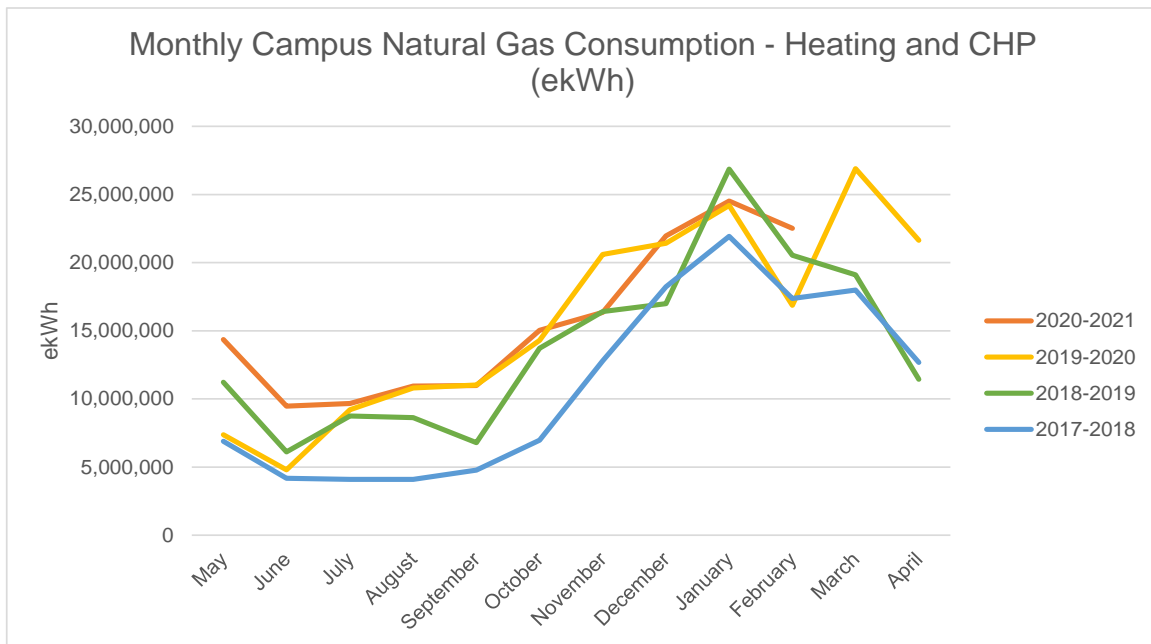


Figure 7: McMaster Campus Natural Gas Consumption - Boilers and CHP

## Domestic Water

Similar to the reduction in electricity consumption resulting from the switch to online classes and work from home strategies, the domestic water consumption has also decreased for the 2020-2021 academic year in comparison to previous years.

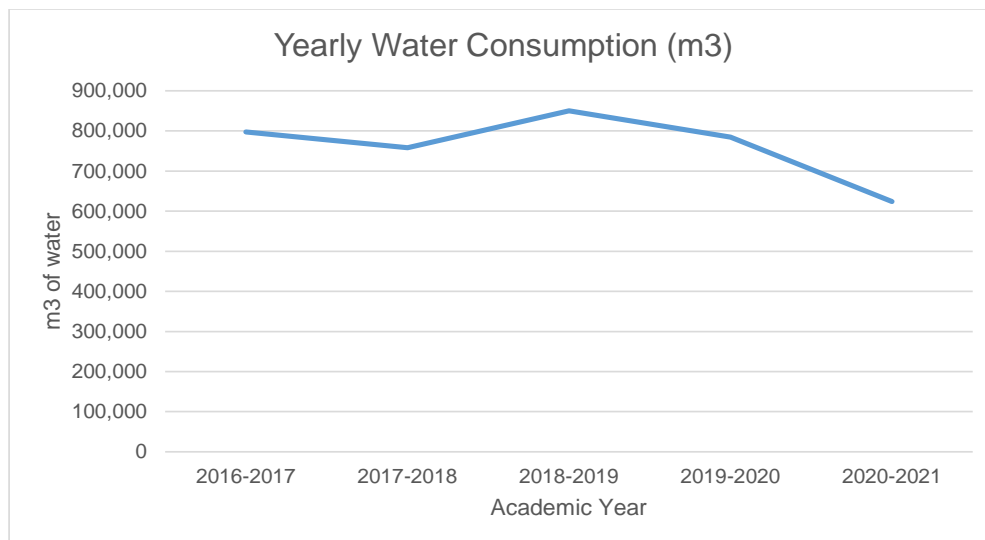


Figure 8: McMaster Domestic Water Consumption

## Utility Intensities

There has not been an increase in net building area on campus between 2019-2020 and 2020-2021 academic years. The change in utility consumption due to COVID-19 is reflected on the utility intensity graphs, as shown in Figure 9, 10 and 11.

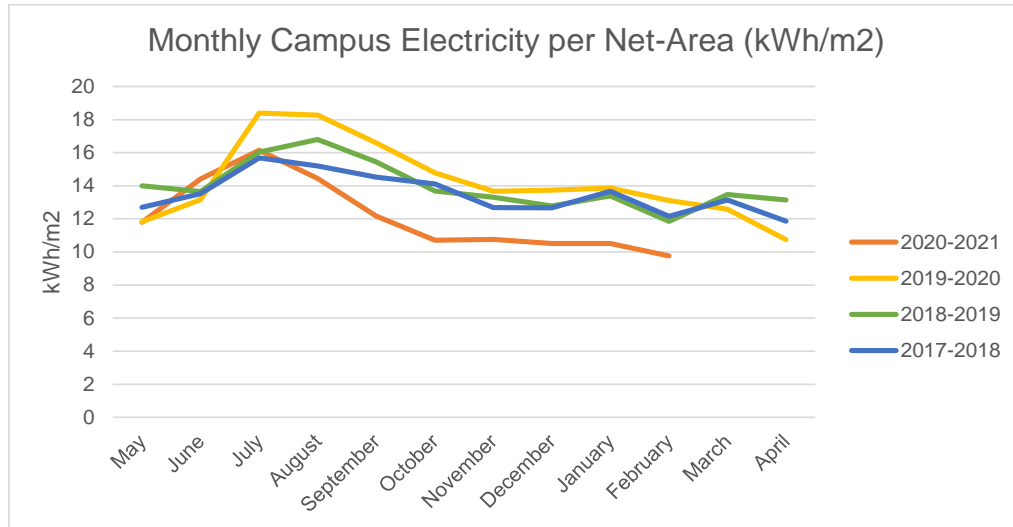


Figure 9: Monthly Campus Electricity per Net-Area (kWh/m2)

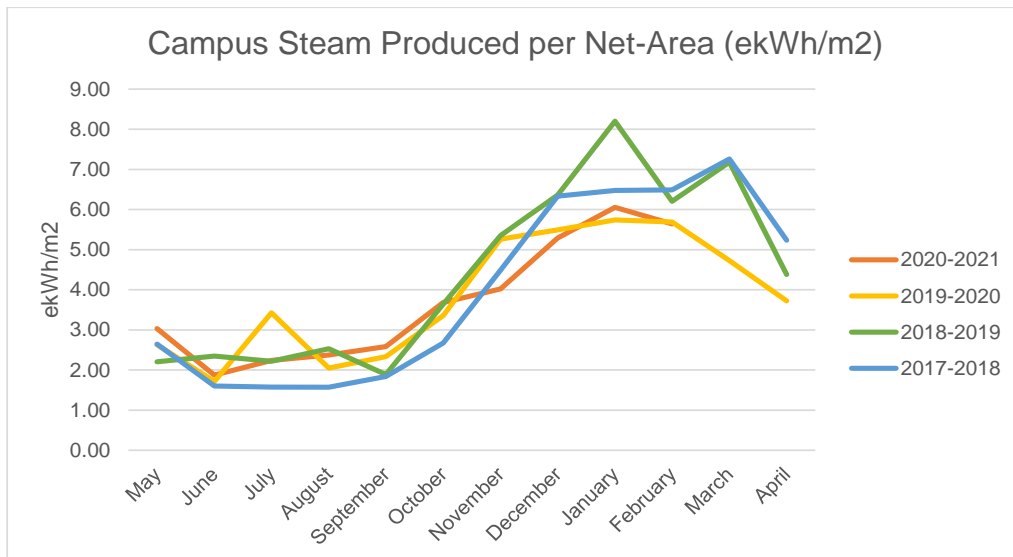


Figure 10: Monthly Steam Produced per Net-Area (ekWh/m2)

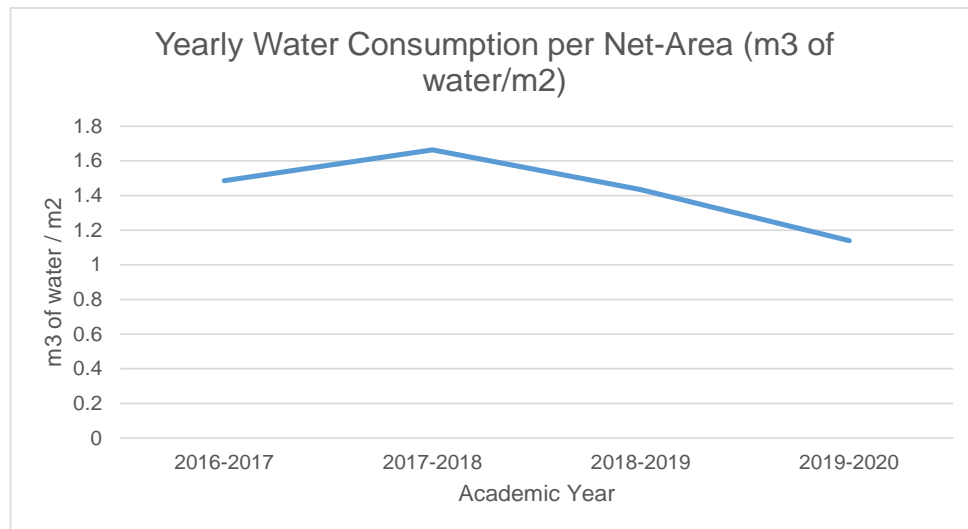


Figure 11: Yearly Water Consumption per Net-Area (m3 of water / m2)

## McMaster GHG Emissions

As part of the Net Zero Carbon Roadmap, an energy model was created to determine the most energy and carbon intensive buildings. Figures 12 and 13 shows the campus models created by Footprint. These models will help McMaster University in prioritizing energy projects in the future.

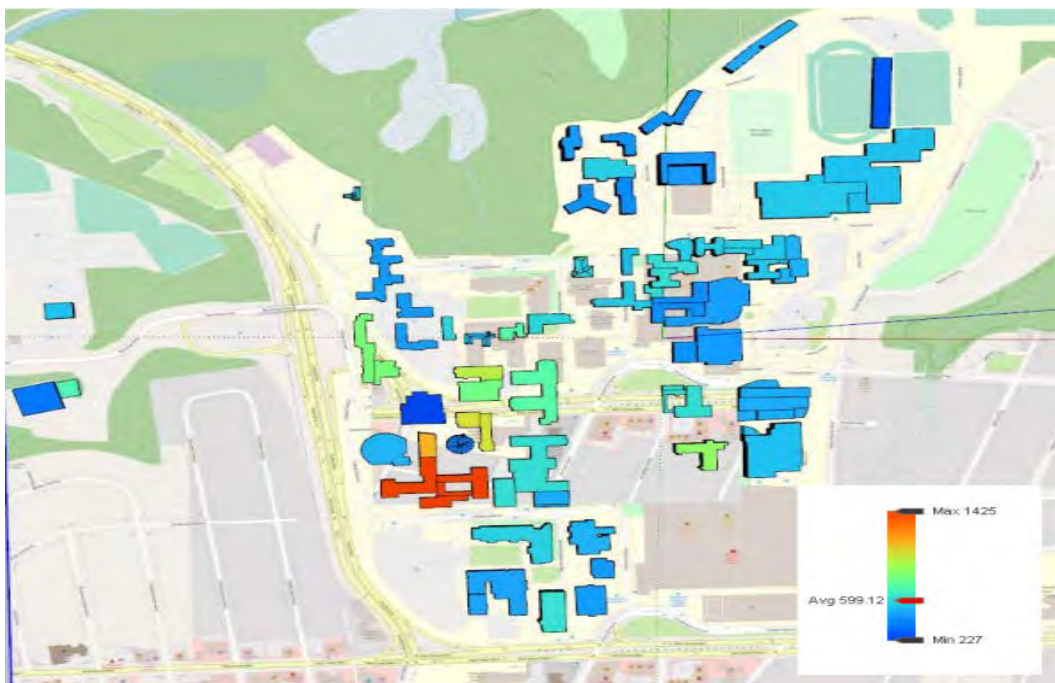


Figure 12: Campus Energy Model [Source: McMaster Net-Zero Carbon Roadmap Report]

Based on the energy model in Figure 12, A.N. Bourns Building (Building 25) is one of the highest energy consuming buildings on campus (red/orange colour), followed by Tandem Accelerator (Bldg 32), General Science Building (Bldg 22), which are yellow in colour. Table 1 summarizes the highest energy consuming buildings on campus and associated action plan to reduce energy consumption.

Building	Energy Consumption (red/orange/yellow)	Action Plan
AN Bourns Building (Bldg 25)	Red/Orange	Recent renovation in ABB has installed Demand Control Ventilation in the Undergraduate Chemistry Wing. There are several other laboratories that could be retrofitted with a DCV system. This will be part of the campus wide DCV project.
Burke Science Building (Bldg 11)	Yellow	Lab systems to be retrofitted with demand control ventilation as part of campus wide DCV project.
Tandem Accelerator (Bldg 32)	Yellow	Lab systems to be retrofitted with demand control ventilation as part of campus wide DCV project.

*Table 1: Highest Energy Consuming buildings*

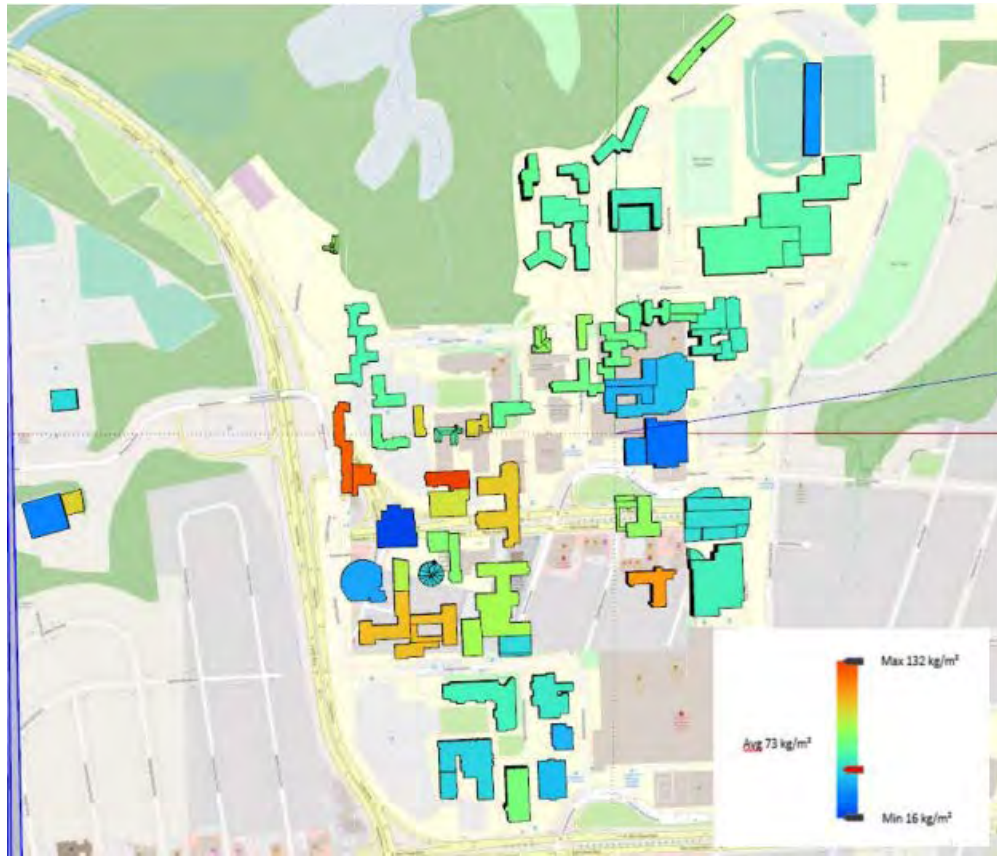


Figure 13: Campus Carbon Emissions Model [Source: McMaster Net-Zero Carbon Roadmap Report]

Currently, McMaster emits approximately 40,400 tonnes of CO<sub>2</sub>e annually. 95% of the emissions are direct emissions stemming from the district steam, cogeneration plant, emergency generators and fleet vehicles. The remaining 5% are indirect emissions from electricity imported from the grid. Figure 14 highlights the amount of carbon emissions resulting from the direct use of natural gas and grid electricity consumption.

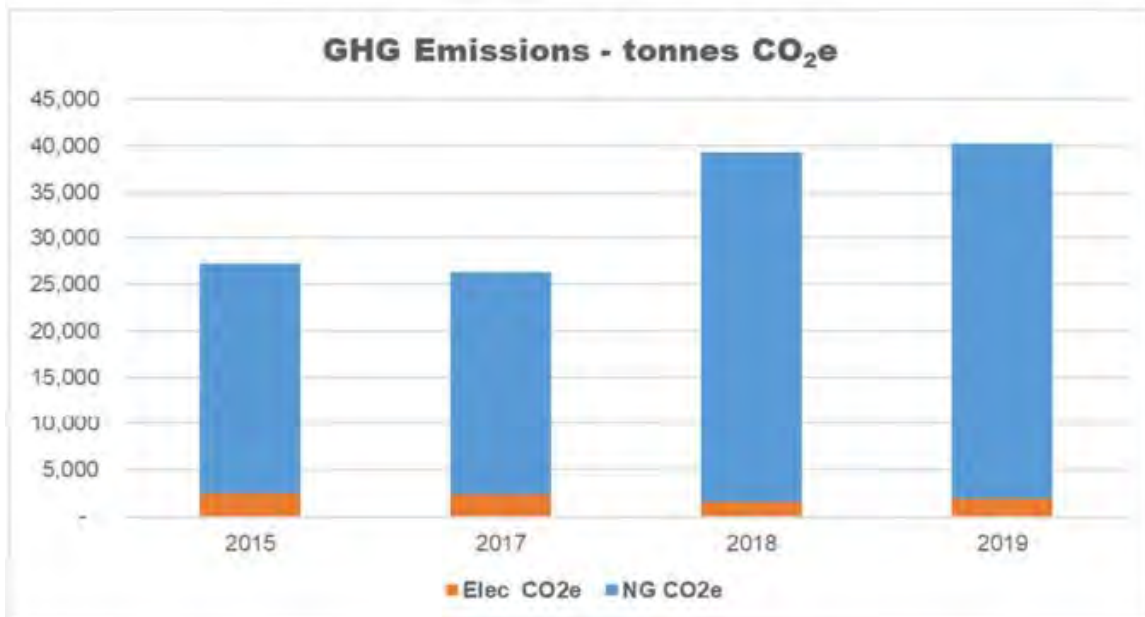


Figure 14: McMaster GHG Emissions [Source: McMaster Net-Zero Carbon Roadmap Report]

This highlights the need for McMaster to actively reduce its carbon emissions through various carbon reduction projects. The suggested carbon pathway to 2050 is shown in Figure 15.

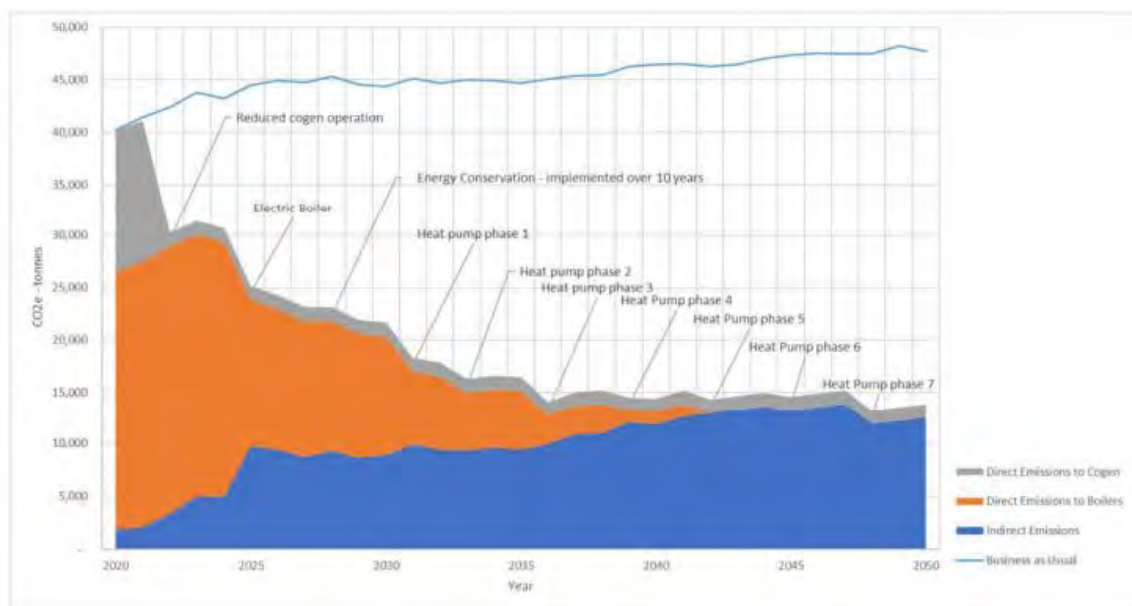


Figure 15: McMaster Carbon Reduction Path [Source: McMaster Net-Zero Carbon Roadmap Report]

The main theme in McMaster's carbon road map is the electrification of the heating systems on campus. McMaster's district heating system utilizes high energy steam and this has proven to be cost effective throughout McMaster's history due to the low cost of natural gas.

However, with the yearly increase in carbon tax, the true cost to operate the district system becomes significant. As such, McMaster is pursuing the installation of two electric boilers to renew its aging steam infrastructure while also avoiding future carbon cost.

To operate the electric boilers without an increase in electricity cost, McMaster intends to participate in the ICI program as a Class A customer. This will be accomplished by installing 10 MW of peak shaving at the NF 91 transformer lot. As a Class A customer, McMaster will be able to reduce the Global Adjustment portion of its annual electricity cost, making it financially feasible to operate the electric boilers. A Utility Cost impact graph shown in Figure 16, highlights what it would cost McMaster on an annual basis to implement all the carbon reduction recommendations with and without peak shaving.

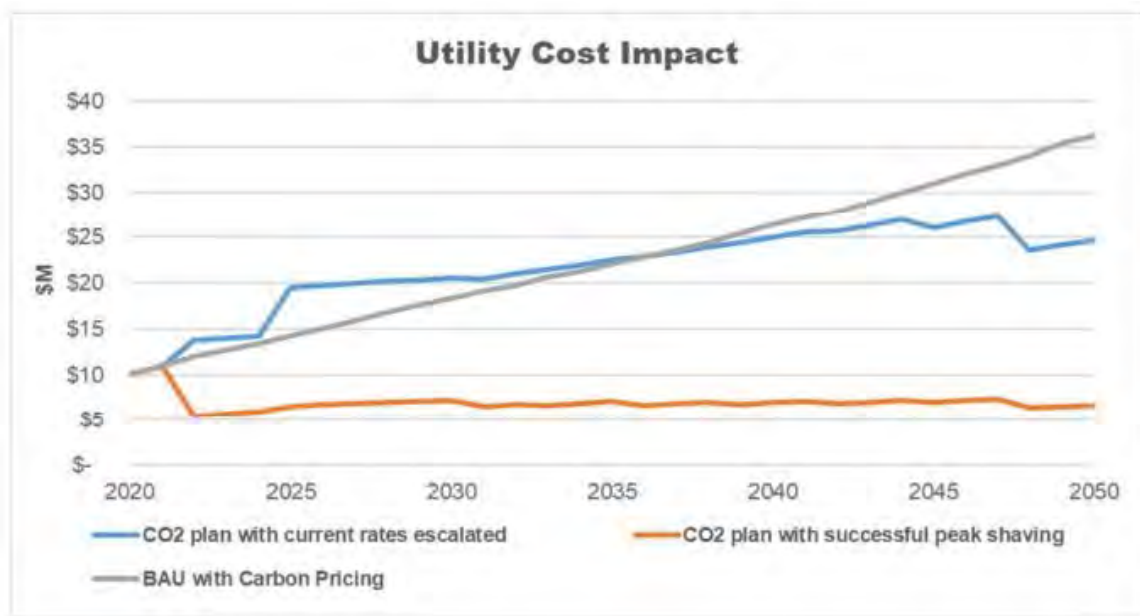


Figure 16: McMaster Utility Cost Impact [Source: McMaster Net-Zero Carbon Roadmap Report]



## Benchmarking with Other Institutions

McMaster energy and GHG intensities were favourable prior to 2017. Due to the installation of the cogeneration plant (CHP), McMaster's energy and GHG intensities have significantly increased as shown in Figure 17 and 18.

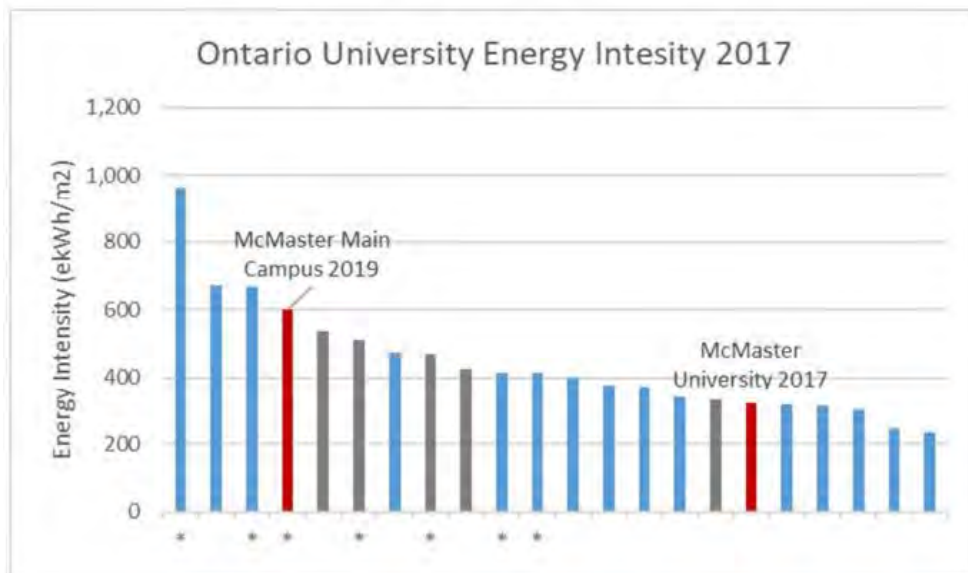


Figure 17: Ontario University Energy Intensity 2017 in ekWh/m² [Source: Ontario.ca]

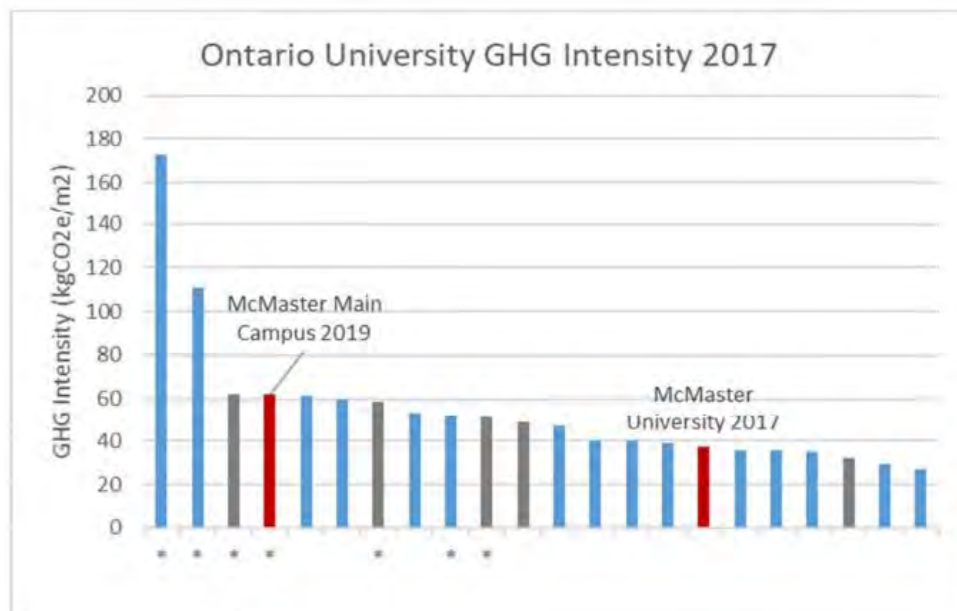


Figure 18: Ontario University GHG Intensity 2017 in kgCO₂e/m²

[Source: McMaster Net-Zero Carbon Roadmap Report]



## Reduction Targets

McMaster's Net-Zero Carbon Road Map has outlined comprehensive targets from 2021 to 2050, reducing campus carbon emissions by **75% in 2030** and **90% in 2050**, with a net reduction of **36,360 tonnes of CO2 per year**. The remaining 10% of campus carbon emissions are to be addressed by utilizing carbon offsets, or production of renewable energy on campus.

McMaster is committed to meeting its 2030 carbon reduction targets through the implementation of projects that focus on energy conservation, ventilation heat recovery, and BAS optimization.

McMaster will also alter its current electrical infrastructure by implementing peak shaving generators to reduce the financial cost of future carbon reduction projects, which heavily rely on electrification of heating systems. This becomes important as McMaster moves forward with the proposed projects, beginning with the installation of electric boilers at ET Clarke in 2022.

## Energy Action Plan

McMaster's Net Zero Carbon Roadmap has successfully laid out McMaster's carbon reduction pathway to 2050. The goal of the energy action plan is to highlight projects that will assist McMaster in achieving its reduction targets with an emphasis on carbon and financial impacts.

Due to COVID-19, the initiation of a few projects has been delayed. This is a direct result of changes in governmental policies, and funding streams. Economic changes have also led to uncertainty with pricing and construction scheduling.

Past projects before 2019 can be found in previous iterations of the Energy Management Plan.

## Completed Projects (post 2019)

### Strobic Fan Upgrades



The strobic (high plume fans) in NRB and ABB are still operating with old pneumatic dampers. This project has replaced old pneumatic dampers to DDC electronic and has been successfully completed.

## Ongoing Projects

### Demand Control Ventilation – Physics Wing



With McMaster being one of Canada's most research-intensive universities, research labs are the biggest consumers of energy on campus. This is due to the high fresh airflows through the labs for maintaining safety and comfort. As there is no recirculation of air in labs, large amounts of heating and cooling energy is required for constantly air conditioning outdoor air (outside air temperature ranges from -30 to +40 degrees Celsius through the year) and maintaining comfortable indoor air temperature and humidity levels.

This project implemented a measurement-based approach to lab ventilation. Typically, a lab ventilation system is designed to maintain constant air flows based on the maximum capacity of the equipment. The project implements lab air quality sensors, which measure air temperature, CO<sub>2</sub>, volatile organic compounds, and particulate matter. When the lab air quality is acceptable, the system reduces the lab airflow to maintain comfort levels. If an accidental spill happens, the system ramps up the ventilation system to the maximum available capacity to exhaust air contaminants and allow the occupant to take action. As the lab air quality system delivers air where required (as opposed to throughout the facility), the system enhances the lab safety by delivering the higher fresh air flows. With the lab air quality being acceptable 97%+ of the occupied hours, significant energy savings are possible with lab demand control ventilation. This initiative has been recognized by the US Department of Energy as best practices in labs.

Similar initiatives have previously been implemented in top labs across North America, including:

- University of Ottawa
- Carleton University
- MaRS Discovery District
- Environment Canada
- University of California, Irvine– these measures were implemented at 11 labs and were profiled by US Department of Energy as best practices in labs
- Harvard University Medical School, Beth Israel Deaconess Medical Centre
- University of Pennsylvania

Following the success of ABB Undergraduate labs project, a feasibility study to implement this measure in ABB (Physics Wing) has been completed and the project is awaiting government carbon reduction funding to be implemented.

## **Water Conservation – Water System Retrofit on Life Sciences Building Fish Tank Room**



The Building 39 Life Sciences Facility has a fish research room which currently utilizes potable water through fish tanks and drains it to the sewage system. The current annual consumption of city water is approximately 50,000 m<sup>3</sup> or \$164,000 in annual costs at current water rates. This is a significant potable water consumption area on campus.

The project involves implementing best practices from fish research labs at University of Guelph, Aqua Lab and Environment Canada and implementing a filtration and circulation system which would have the capability to reduce potable water consumption by 80-95%. Detailed engineering of the project has been completed and bidding preparation is currently underway. Project was planned to be completed in 2019 in conjunction with the Faculty of Science and the Central Animal Facility.

Update: Delays in procurement of fish tanks and the recent COVID-19 pandemic have slowed construction. This project is now expected to be completed in fall of 2021.

<i>Ongoing Projects</i>	<i>Year Completed</i>	<i>Cost (\$)</i>	<i>Energy Incent.</i>	<i>Annual Gas Savings (m3)</i>	<i>Annual Electricity Savings (kWh)</i>	<i>Annual Water Savings (m3)</i>	<i>Annual Savings (\$)</i>	<i>Simple Payback</i>	<i>Funding Source</i>	<i>GHG Emissions Reduction (tonnes of CO2e)</i>
<b>Lab Air / DCV – ABB Physics Wing</b>	2020-2021	\$887,000	\$0	131,700	311,400	0	\$112,000	8	EMP	248.3
<b>Water Conservation in Fish Lab</b>	2020	\$425,000	\$0	0	0	41,000	\$134,000	3	EMP	0
<b>Total EMP Investments</b>		<b>\$1,312,000</b>	<b>\$0</b>	<b>131,700</b>	<b>311,400</b>	<b>41,000</b>	<b>\$246,000</b>			<b>248.25</b>

*Table 2: Ongoing Projects Summary*

## Proposed Projects

### Steam Traps Replacement



The steam distribution system at McMaster relies on steam traps to ensure operation. Aside from an operational standpoint, steam traps play a vital role in fuel efficiency. Leaking traps are a major cause of energy and condensate loss. This project focuses on replacing these old and leaky steam traps for better efficiency and energy savings.

Update: A steam trap audit has been completed in the beginning of 2021. Actual replacements are to follow during the summer of 2021 where the steam system can be safely isolated due to warmer weather.

### Window Replacements



A culprit for a building's energy losses are from the building's façade, with old leaky windows being the top contributor. Replacing the windows would ensure that there are minimal leakages allowing conditioned air to escape. The following buildings have been identified for potential candidates for window replacements:

- Ivor Wynne Centre
- Commons Building
- Campus Services Building
- Tandem Accelerator
- Life Sciences Building

### LSB Mechanical Upgrades / Variable Speed Pumping



The pumping and distribution system at LSB is currently designed for constant volume. Retrofitting the system to variable speed operation will result in electrical savings due to variable flow. This would entail new VFD pumps and conversion of all three-way valves to two-way valves (energy valves).

Update: This project has been included in the new Greenhouse project at LSB, where majority of the mechanical systems in the building are to be replaced and renewed as part of deferred maintenance. Project is scheduled to be completed in 2023 and overall project funding for the mechanical systems upgrade is approximately **\$2.5M**. Amount of carbon reduction resulting from the upgrades to be determined once selection of equipment have been finalized.

### LSB Greenhouse Geothermal Heat Pump System



One of the key recommendations in the Net Zero Carbon Roadmap is the transition to a geothermal heat pump system to provide heating on campus. To verify the effects of the proposed campus geothermal heat pump systems, it was decided that a pilot system would be implemented as part of the Life Science Building Greenhouse project.

This involves drilling thermal wells below the new greenhouse addition and installing a closed-loop system with circulation pumps. It is estimated that the pilot geothermal system would displace **100 kW** of heating and cooling from the district energy system. This amounts to a reduction of **98.5 tonnes of CO<sub>2</sub>e annually**.

The implementation of the pilot geothermal system would cost approximately **\$500K** with no financial payback; it is intended for carbon reduction. McMaster Facility services hopes to gain more understanding of the financial implications of geothermal heat pump systems to operations and utilities through this pilot project.

### Demand Control Ventilation – Campus Wide



In order to reduce the steam demand, the heating demand of a building must also be reduced. The most common way to accomplish this is through demand control ventilation.

Laboratories have the highest energy usage out of all the spaces on campus and as such have the most potential for energy savings. The proposed demand control ventilation system monitors the concentration of the effluent in the exhaust air stream and effectively increases/decreases the speed of the exhaust fan in response. The energy savings occur when there is minimal fume hood activity/usage, as the system reduces the fan speed in order to conserve energy. This reduces the air changes per hour required in the laboratory, which reduces the heating load in the building. This translates to less steam demand from central plant, effectively reducing the GHG emissions of the gas boilers. In the past, McMaster has implemented the demand control ventilation system across many labs on campus (JHE Chemistry Wing, ABB Undergraduate Chemistry, MDCL, etc.), with great success (refer to past projects section).

Building on previous success, the DCV system can also be used in non-lab spaces; in the case of non-lab areas such as office spaces, meeting rooms, etc., the sensor suite/system can be configured to detect CO<sub>2</sub>, TVOC's, and particulates. This will give an indication of the occupancy levels in each of the spaces, which can be used in real-time to adjust ventilation requirements and reduce fan operations.

Table 3 highlights all the potential buildings (both laboratories, non-laboratories, and animal facilities) that can be retrofitted with Demand Control Ventilation with accompanying savings and GHG reductions as indicated in study completed by Airgenuity.

		Capital Cost	Incentive	Net Capital	Electrical Savings (kWh)	Therms	CO 2 (Metric Tonnes)
9	Nuclear Research building	\$165,000	\$27,084	\$137,916	174,823	34,291	230
10	Mills Memorial Library	\$209,550	\$26,069	\$183,481	164,053	34,515	222
11	Burke Science Building	\$529,600	\$73,066	\$456,534	471,683	92,490	617
16	John Hodgins Engineering	\$687,475	\$146,809	\$540,666	950,946	184,696	1238
17	Divinity College	\$97,166	\$5,794	\$91,372	36,423	7,685	51
22	General Sciences	\$165,000	\$22,690	\$142,310	148,961	27,834	188
23	Chester New Hall	\$91,100	\$15,208	\$75,892	97,241	19,586	132
24	Ivor Wynne Centre	\$155,925	\$49,058	\$106,867	310,065	64,471	429
25	ABB - Arthur Bourns Building	\$856,040	\$126,436	\$729,604	847,776	148,779	1009
29	Togo Salmon Hall	\$155,930	\$33,158	\$122,772	210,503	43,243	289
30	Biology Greenhouse	\$105,300	\$11,305	\$93,995	74,097	13,911	94
32	Tandem Accelerator Building	\$131,115	\$27,807	\$103,308	179,581	35,175	236
33	Applied Dynamics Lab	\$132,500	\$18,860	\$113,640	124,398	22,927	155
34	Psychology Building	\$437,558	\$84,466	\$353,092	540,345	108,686	724
38	Kenneth Taylor Hall	\$253,389	\$18,459	\$234,930	121,851	22,405	147
39	Life Science building	\$721,500	\$146,023	\$575,477	1,003,008	163,294	1080
42	Thode Library of Science & Engineering	\$118,450	\$31,698	\$86,752	200,660	41,543	276
43	Communications Research Laboratory	\$119,971	\$9,935	\$110,036	69,105	10,801	71
46	DeGroote School of Business	\$97,200	\$5,325	\$91,875	33,503	7,051	46
48	Institute for Applied Health Sciences	\$306,763	\$50,867	\$255,896	329,514	63,983	424
49	Information Technolog Building	\$209,600	\$14,270	\$195,330	89,963	18,836	123
51	McMaster University Student Centre	\$197,400	\$28,706	\$168,694	181,430	37,725	250
52	Michael Degroote Centre for Learning & Discovery	\$438,016	\$89,670	\$348,346	614,290	100,860	667
54	David Braley Athletic Centre	\$144,750	\$13,884	\$130,866	86,027	18,862	120
56	Engineering Technology Building	\$324,491	\$72,753	\$251,738	501,507	80,724	530
57	Ron Joyce Centre	\$162,940	\$10,240	\$152,700	64,630	13,489	88
58	MIP MARC	\$363,725	\$62,998	\$300,727	408,183	79,215	531
59	MIP Atrium Building	\$165,000	\$27,152	\$137,848	179,168	32,982	23
74	LR Wilson Hall	\$209,600	\$32,551	\$177,049	206,042	42,669	284
83	David Braley Athletic Centre	\$97,170	\$12,862	\$84,308	83,949	5,954	104
85	One James North	\$97,170	\$4,940	\$92,230	31,264	6,478	43

**Table 3: Airgenuity - McMaster Campus Review**

### Electric Boilers and Peak Shaving Generators (Natural Gas Generators)



Installation of electric boilers as oppose to the conventional natural gas boilers will significantly reduce McMaster's GHG emissions. Based on the recommendations in the Net Zero Carbon Roadmap, the installation of one 30,000 lb/hr steam boiler would reduce McMaster's carbon emissions by 35%. There are no cost savings associated with the implementation of an electric boiler; it is simply a greenhouse gas emission reduction strategy.

**McMaster will be installing two 50,000 lb/hr electric boilers in the last quarter of 2022. This will require a capital investment of approximately \$3.6M. These two boilers will be operated in partial loads to achieve the carbon reduction target in the Net-Zero Carbon Roadmap. It is possible to achieve greater carbon reduction by operating the two electric boilers at a higher capacity. An operational review will be conducted once the electric boilers are in place.**

To minimize the financial impacts on the operational budget of the electric boilers, McMaster will need to participate in the Industrial Conservation Initiative with the IESO and participate

as a Class A customer. Class A participants pay global adjustment (GA) based on their percentage contribution to the top five peak hours. As a prerequisite to the program, the facility must have a peak demand above the nominal threshold of 5 MW; McMaster currently operates between 9 to 11 MW.

To maximize the financial savings from the program, McMaster will be installing 10 MW of peak shaving generators at the NF91 transformer lot and ET Clarke. With behind-the meter generation, McMaster will be able to significantly reduce its global adjustment cost, minimizing the operational costs of the proposed electric boilers. The natural gas generators are expected to operate 100 hours/year, in order to meet the peak days, which happen mostly in the summer months. With this, the natural gas generators will be producing approximately 700 tonnes of CO<sub>2</sub>e locally on campus. In essence, this displaces 700 tonnes of CO<sub>2</sub>e from the province as the province would be operating natural gas generators during peak periods.

**Based on McMaster's electricity load profile over the years, and current market conditions, it is estimated that approximately \$4M in Global Adjustment savings can be achieved through peak shaving.**

The installation of the two electric boilers, 10 MW of peak shaving generators and refurbishment of existing steam assets will cost McMaster approximately \$31.5M. With an estimated \$4M in annual savings, a payback of 13 years is expected; this factors in operational and maintenance costs.

**At the March 4, 2021 Board of Governors meeting, McMaster received the approvals to proceed with the electric boiler and peak shaving project.**

#### ***Solar Panels (Electricity)***



A solar panel farm produces sustainable renewable energy. This design works by photovoltaic cells/panels that absorb the energy from the sun and convert it to electricity via solar inverters.

McMaster is through the planning stages of designing and constructing a multi-level parking lot in Lot K. This provides the opportunity for a solar panel array on this structure's roof. A feasibility study was conducted by a consultant to assess the viability of integrating a solar panel farm/array on this proposed multi-level parking structure. It was determined that this solar roof could yield approximately 400 kW of power, with a construction cost of approximately \$1.09 million.

The cost savings for the solar roof originate from two sources:



1. With McMaster potentially being a Class A participant in the future, McMaster will be able to participate in the ICI program. McMaster can save approximately \$550K per MW when chasing the 5 top peaks as discussed in previous sections. If a battery storage system was implemented in conjunction with the solar panel farm/array, McMaster is able to utilize the electricity generated through the solar panels and offset the electricity taken from the grid by 400 kW during peak hours, resulting in potential savings of around **\$220K**. Implementing a battery storage system in Parking Lot K will require physical space and additional electrical infrastructure. It will add approximately \$2 million in cost to the project.
2. During non-peak hours, the savings can be realized by offsetting the power taken from the grid during the day. The savings from the daily operation is approximately **\$70,000 annually**.

*This project has a payback of 11 years.*



### **Metering Upgrades Project**

With an aging campus infrastructure, many of the existing meters are outdated and difficult to service. This project will look at upgrading old meters (chilled water and steam mostly). It is estimated that the project will cost approximately \$250K (equipment and install). Upgrading the existing meters will help in better monitoring and tracking of Utility services, which will facilitate verification measures for the EMP plan.



### **Irrigation Control System / Water Monitoring System**

There are currently 28 irrigation systems on campus that the McMaster Grounds maintains and operates. Ninety percent of the irrigation systems are operated based on a schedule, which is not the most efficient way to operate. With advancement in control systems, today's irrigation technology allows for a demand response operation whereby the water monitoring system will track weather data and make adjustments to the irrigation demand. For instance, during days when there is precipitation, the water monitoring system will close the valves to the sprinkler system to conserve water. The water monitoring system also tracks the integrity of the irrigation lines/heads by actively monitoring any pressure drops caused by leaks or damaged sprinkler heads.

As a test case, the ten-acre field was used to determine the potential water savings from retrofitting a water monitoring to an existing irrigation system. There are 15 zones in this area and the test results were very positive. Savings targets are being developed. **With 15 zones, the total water consumption is around 3,839,616 million gallons per year (14,547 m3/year).**



### **Rainwater Harvesting**

Rainwater harvesting involves harvesting rainwater via a water collection system; rooftops are the most viable location for collection to avoid water contamination by ground elements. Currently, McMaster has a number of rainwater collectors spread across campus (DBAC, IWC, JHE, ETB, etc.). There are already cistern tanks in place to take advantage of this. A capital investment would have to be made to install new pipelines and pumps to extract rainwater from the cisterns and to be used for irrigation. This project is being researched.



### **Campus City Water Audit**

This project involves identifying all sources of water leaks, such as taps, pump seals, and once-through cooling systems. Once the campus is audited, the amount of water loss for each is identified and repairs are prioritized accordingly. This involves hiring two summer students to audit the campus and to complete a follow-up inspection. The expected savings are based on the industrial savings of 5%. Cost of repairs is to be determined based on the results of the initial audit.



### **Wastewater Abatement Program**

Participation in this program will allow the University to reduce their water cost by diverting a minimum of 25% of the purchased potable water from the sewer works. Examples of diverted water includes ground irrigation, evaporative water from cooling towers, etc.

There are potential savings in pursuing this program as a high volume of water is diverted from the sewer works by the cooling towers and water irrigation. The City of Hamilton will have to be engaged to determine if McMaster will qualify for this program.

<i>Proposed Projects</i>	<i>Target Completion Date</i>	<i>Cost (\$)</i>	<i>Energy Incent.</i>	<i>Annual Gas Savings (m3)</i>	<i>Annual Electricity Savings (kWhr)</i>	<i>Annual Water Savings (m3)</i>	<i>Annual Savings</i>	<i>Simple Payback</i>	<i>Funding Source</i>	<i>GHG Emissions Reduction (tonnes of CO2e)</i>
Steam Trap Replacement	2021	\$1,050,000	\$50,000	33,557	0	0	\$7,382	> 20	D.M.	63
Window Replacements (various)	2022-2030	\$7,615,000	\$0	28,854	15,865	0	\$7,646	> 20	D.M.	54
Mechanical Upgrades (LSB)	2023	\$2,500,000	\$0	TBD	TBD	0	TBD	> 20	D.M.	TBD
LSB Greenhouse (Geothermal HP)	2023	\$500,000	\$0	**	**	0	**	0	EMP	98.5
Demand Control Vent (Campus Wide)	2025	\$14,300,000	\$2,900,000	9,436,400	19,189,000	0	\$780,000	15	EMP	13,789
Electric Boiler (40,000 lbs/hr) and Peak Shavers	2022	\$31,222,530	\$0	N/A	15,700,000	0	\$4,000,000	13	EMP Loan	9,200
Solar Panels (Lot K)	2022	\$3,090,000	TBD	0	1,460,000	0	\$290,000	11	EMP	0
Metering Upgrades	2021	\$250,000	TBD	0	0	0	\$0	N/A	D.M.	0
Irrigation Control/Water Monitoring	2020	\$6,500	\$0	0	0	7,274	\$24,700	< 1 year	EMP	0
Rainwater Harvesting	2020	\$23,000	\$0	0	0	648	\$2,400	10	EMP	0
Campus City Water Audit	2020	TBD	TBD	0	0	31,000	\$105,000	<1 year	EMP	0
Wastewater Abatement Program	2020	TBD	TBD	0	0	TBD	TBD	TBD	EMP	0
<b>Total</b>		<b>\$60,557,030</b>	<b>\$2,950,000</b>	<b>9,498,811</b>	<b>36,364,865</b>	<b>38,922</b>	<b>\$5,217,128</b>			<b>23,205</b>
<b>Total EMP Investments</b>		<b>\$49,142,030</b>	<b>\$2,900,000</b>	<b>9,436,400</b>	<b>36,349,000</b>	<b>38,922</b>	<b>\$5,202,100</b>			<b>23,088</b>

**Table 4: Proposed Projects Summary**

DM- Deferred Maintenance

EMP – Energy Management Plan (Energy Budget)

\*\* The annual gas savings achieved from the geothermal heat pump system is negated by the increased electricity cost from the operation of the heat pumps.

## Energy Action Plan Conclusion

This energy action plan extends to 2030 and includes 12 essential projects with a total anticipated Energy investment **\$49,142,030**. This will bring the total investment to **\$75,364,474** by 2030. Funding sources for each of these projects are being considered, along with timelines and business case development. Projects will be brought through governance for consideration. Table 5 below summarizes the EMP investment breakdown from the past, current and future projects.

Project	EMP Investment
Completed Projects	\$24,910,444
Ongoing Projects	\$1,312,000
Proposed Projects	\$49,142,030
Total (by 2025)	<b>\$75,364,474</b>

Table 5: EMP Investment up to 2030

With the current and proposed projects, the GHG emission is targeted to be reduced significantly. McMaster's annual carbon footprint of **40,400 tonnes of CO<sub>2</sub>** is projected to be reduced to an annual carbon footprint of **15,500 tonnes of CO<sub>2</sub>** by 2030.

Year	Annual GHG Emission Reductions (tonnes of CO <sub>2</sub> )
2013 to 2020	1,695
2020 to 2030	23,205
Total	<b>24,900</b>

Table 6: GHG reductions up to 2030

The EMP progress will be tracked by comparing monthly and yearly utility and GHG intensities. Baseline, benchmarks, progress and targets met will be tracked and recorded. Annual reports will be developed to alert any stakeholders of any issues and milestones achieved. The hope is to raise awareness and maintain enthusiasm for sustainability and energy management initiatives.