

# STRATEGIC MANDATE AGREEMENT


McMaster University  
Ministry of Advanced Education and Skills Development  
2017-20

SIGNED for and on behalf of the Ministry of  
Advanced Education and Skills Development  
by:

  
Sheldon Levy  
Deputy Minister

Date

SIGNED for and on behalf McMaster University by:

  
Patrick Deane  
President

Date

4<sup>th</sup> October 2017



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# Preamble

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This Strategic Mandate Agreement between the Ministry of Advanced Education and Skills Development and McMaster University outlines the role the University currently performs in Ontario's postsecondary education system and how it will build on its current strengths to achieve its vision and help drive system-wide objectives and government priorities.

The Strategic Mandate Agreement (SMA):

- Identifies and explains the shared objectives and priorities between the Ontario government and the University;
- Outlines current and future areas of program strength;
- Supports the current vision, mission, and mandate of the University and established areas of strength within the context of the University's governing legislation;
- Describes the agreed-upon elements of the new university funding model, including:
  - a University's enrolment plans as well as their projections of their enrolments relative to their corridor midpoint and any desired changes to their corridor during the period of this SMA; and
  - differentiation areas of focus including metrics and targets.
- Provides information on the financial sustainability of the institution; and
- Informs Ministry decision-making and enables the Ministry to align its policies and processes to further support the University's areas of strength.

The term of the SMA is from April 1, 2017 to March 31, 2020.

The agreement may be amended in the event of substantive policy or program changes that would significantly affect joint commitments made in the SMA (e.g. Major Capacity Expansion, Highly Skilled Workforce, etc.). Any such amendment would be mutually agreed to in writing, dated, and signed by both signatories.

# Ontario's Vision for Postsecondary Education

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Ontario's colleges and universities will drive creativity, innovation, knowledge, skills development and community engagement through teaching and learning, research, and service.

Ontario's colleges and universities will put students first by providing the best possible learning experience for all qualified learners in an affordable and financially sustainable way, ensuring high quality and globally competitive outcomes for students and Ontario's economy.

## McMaster University Vision, Mission and Mandate

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### **Vision**

To achieve international distinction for creativity, innovation and excellence.

### **Mission**

At McMaster, our purpose is the discovery, communication and preservation of knowledge. In our teaching, research, and scholarship, we are committed to creativity, innovation and excellence. We value integrity, quality, inclusiveness and teamwork in everything we do. We inspire critical thinking, personal growth and a passion for lifelong learning. We serve the social, cultural and economic needs of our community and our society.

## Aspirations

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*The Ministry recognizes the importance of supporting institutions to evolve and acknowledges the strategic aspirations of its postsecondary education institutions. The SMA is not intended to capture all decisions and issues in the postsecondary education system, as many will be addressed through the Ministry's policies and standard processes. The Ministry will not be approving any requests for capital funding or new program approvals, for example, through the SMA process.*

### **Institutional Aspirations**

Ranked as one of the world's top 100 universities,<sup>1</sup> McMaster is a research-focused student-centred institution dedicated to creating a brighter world through the art and science of discovery. We are Ontario's second-most research-intensive university<sup>2</sup> — second only to Canada's highest globally ranked university. Our teaching, learning, and research mandates are deeply integrated at both the undergraduate and graduate levels. With strengths across many disciplines, McMaster is a globally ranked leader in the health sciences.<sup>3</sup> We are also

renowned for our integration of research into a personalized and innovative teaching environment. In March 2017, we were the first university in Ontario to sign the Okanagan Charter: An International Charter for Health-Promoting Universities and Colleges, a clarion call for higher education to promote the health and well-being of people, places, and the planet. McMaster aspires to build upon our dual strengths as an innovative student-centered university and an internationally recognized research institution. In doing so, we aim to achieve preeminence as one of the world's leading universities in advancing human and societal health and well-being.

Over the past decade, McMaster has been committed to supporting the province's goal of improving postsecondary access for Ontario's youth, and we are pleased to have seen a substantial increase in our enrolment. As a result, we continue to make significant investments in infrastructure, such as the Peter George Centre for Living and Learning, slated for completion in 2019. To meet the needs of our increased student population and our dynamic research environment, we will require further expansion of our capital resources over the next few years. A key element of our vision will be a new One Health building, which would bring students and faculty, as both learners and researchers, into a facility focused on interdisciplinary education and multi-platform research.

<sup>1</sup> <http://www.shanghairanking.com/ARWU2017.html> 66<sup>th</sup> in the world and 3<sup>rd</sup> in Canada | [https://www.timeshighereducation.com/world-university-rankings/2018/world-ranking#!/page/0/length/25/name/mcmaster/sort\\_by/rank/sort\\_order/asc/cols/stats](https://www.timeshighereducation.com/world-university-rankings/2018/world-ranking#!/page/0/length/25/name/mcmaster/sort_by/rank/sort_order/asc/cols/stats) 78<sup>th</sup> in the world and 4<sup>th</sup> in Canada

<sup>2</sup> <http://www.heqco.ca/SiteCollectionDocuments/Report-The-Differentiation-of-the-Ontario-University-System.pdf> (p.58) | <https://researchinfosource.com/pdf/CIL%20Top%2050%20research%20universities%202016.pdf>

<sup>3</sup> <http://www.shanghairanking.com/FieldMED2016.html> #33 in the world and #2 in Canada in Clinical Medicine and Pharmacy | [https://www.timeshighereducation.com/world-university-rankings/2017/subject-ranking/clinical-pre-clinical-health#!/page/1/length/25/sort\\_by/rank/sort\\_order/asc/cols/stats](https://www.timeshighereducation.com/world-university-rankings/2017/subject-ranking/clinical-pre-clinical-health#!/page/1/length/25/sort_by/rank/sort_order/asc/cols/stats) #27 in the world and #3 in Canada in Clinical, Pre-Clinical and Health

# Shared Objectives and Priorities for Differentiation

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## 1.0 Student Experience

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*This section captures institutional strengths in improving student experience, outcomes and success. This section recognizes institutions for measuring the broader learning environment, such as continuity of learning pathways; retention; student satisfaction; co-curricular activities and records; career preparedness; and student services and supports.*

### **Institutional Approach to Improving Student Experience**

McMaster University strives to foster the creative and intellectual potential of our students, while also preparing them to build successful careers. An innovator in student-centered, experiential education, McMaster is renowned for our evidence-based approach, which takes inspiration from the problem-based learning model pioneered by our medical school. This ethos now finds a home in the Paul R. MacPherson Institute for Leadership, Innovation and Excellence in Teaching (the MacPherson Institute), dedicated to the scholarship of teaching and learning and to enhancing the student experience through leading-edge teaching development, educational technologies, and pedagogical research. We are committed to engaging students at all levels in advanced research, providing effective experiential learning opportunities, and connecting these experiences to local, provincial, national and international communities. Our overarching vision is to continue to develop the distinctive, personalized, engaging, and sustainable student experience that is a McMaster hallmark.

### **Examples of Institutional Initiatives**

#### **A longstanding student-centred approach that attracts outstanding candidates**

- The percentage of undergraduates who register at McMaster with an admission average of 90 per cent and above has risen from 13.5 per cent in 2000 to 35.4 per cent in 2015.
- In 2015, seven McMaster graduate students were named Vanier Scholars and two were named Banting Fellows.

#### **New initiatives to support our students' success**

- The McMaster Academic Planner is a new online tool to assist enrolled and prospective students in the Faculty of Science in their exploration of the many pathways open to them. This concept is currently under development for students in the Faculties of Humanities and Social Sciences.
- To date, close to 200 students have taken part in the MacPherson Institute's Student Partners Program. Students participate in the design and development of new courses and collaborate with staff and faculty partners on research projects related to teaching and learning.
- Launched in 2015, McMaster's Student Mental Health and Well-Being Strategy has significantly enhanced mental health supports and services. To date, more than 100 front-line staff have been trained in Mental Health First Aid.

### **New academic programming to meet societal need and student demand**

- McMaster continues to develop innovative interdisciplinary programs, such as the new Integrated Biomedical Engineering and Health Sciences Bachelor's degree, the first such program in Canada.
- Building on a decades-long history of programming in Indigenous Studies, McMaster has launched an Honours degree program in Indigenous Studies, designed for both Indigenous and non-Indigenous learners. In addition, the School of Social Work and the Arts and Science Program will require three mandatory units of Indigenous Studies as of 2017-18.
- A new School of Interdisciplinary Science, launched by the Faculty of Science in January 2016, emphasizes experiential, collaborative and student-centred learning.

### **Initiatives to expand opportunities for our graduate students**

- New graduate programs that meet Ontario's training needs include PhD programs in Labour Studies and Health Studies, a PhD program in Engineering for students already working in industry, and an Executive Masters of Business Administration (MBA) program in Digital Transformation.
- Our new Biomedical Discovery and Commercialization Program is an innovative 4+1 year Bachelors–Masters program, which trains students in technology development and commercialization and produces graduates with strengths in both discovery research and commerce.
- Graduate students gain real-world experience at the McMaster Research Shop, which works with organizations in and beyond Hamilton to provide plain-language answers to citizens' research questions.
- In 2015-16, McMaster won two prestigious Natural Sciences and Engineering Research Council (NSERC) Collaborative Research and Training Experience awards, sponsoring more than 50 graduate students to train in the fields of resilient infrastructure and electrification of vehicles.

### **Vibrant new spaces for interdisciplinary, active learning**

- L.R. Wilson Hall, a new home for the liberal arts, was funded by a grant of \$45.5 million from the province of Ontario and a \$10 million gift from L.R. Wilson. This LEED-certified building has technology-enabled classrooms to encourage active learning and state-of-the-art laboratories that facilitate interdisciplinary research.
- A new outdoor Indigenous Circle, intended for use by all Faculties, honours Indigenous knowledge and affirms that learning can be enhanced when linked to the natural environment.

- The Thode Makerspace is a new interdisciplinary learning space filled with tools, technology and expertise.
- Slated for completion in 2019, the 12-storey Peter George Centre for Living and Learning will include a student residence, technology-enabled classrooms and student activity and lounge spaces.

### Positive feedback from our students

- In *Maclean's* 2017 University Rankings: Medical/Doctoral category, McMaster ranked second in Ontario (and fourth in the country) in overall student satisfaction.
- In the *Maclean's* 2017 Students' Favourite Universities Rankings: Medical/Doctoral category, McMaster students ranked the university first in the province in course instruction; second in mental health services and academic advising staff; and third in experiential learning opportunities and steps to prevent sexual assault.
- In a survey administered during the July 2016 convocation, more than 95.3 per cent of respondents indicated that McMaster had prepared them for employment.

### Metrics and Targets

System-Wide Metrics	2019-20 Target
Proportion of fourth year students with two or more High-Impact Practices (HIPs) (from the National Survey of Student Engagement)	58%
Year 1 to Year 2 retention (from the Consortium for Student Retention Data Exchange)	90%
Proportion of operating expenditures on student services, net of student assistance (as reported in the Council of University Finance Officers data)	5%

Institutional Metrics	2019-20 Target
Percentage of graduate students satisfied with their academic experience (rating of excellent or very good) – Canadian Graduate and Professional Student Survey	70%



# 2.0 Innovation in Teaching and Learning Excellence

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*This section focuses on innovative efforts including pedagogical approaches, program delivery and student services that contribute to a highly skilled workforce and ensure positive student outcomes.*

*This section captures institutional strengths in delivering high-quality learning experiences, such as experiential, entrepreneurial, personalized and digital learning, to prepare students for rewarding careers. It includes recognition of student competencies that improve employability.*

*It begins to identify indicators of quality that are currently available and within an institution's control.*

## **Institutional Approach to Innovation in Teaching and Learning Excellence**

McMaster has transformed postsecondary teaching and learning over many decades, and our signature pedagogies have been adopted worldwide. A leading example is the problem-based learning model known around the world as The McMaster Model, a student-centered, inquiry-based pedagogical model first devised at McMaster's medical school and since adopted across multiple disciplines. Another example is McMaster's Arts and Science Program, which in 1981 broke new ground in self-directed, interdisciplinary undergraduate education. It has served as the model for other successful interdisciplinary programs, such as the Bachelors of Health Sciences, Integrated Science, Engineering and Management and Engineering and Society programs. Through the MacPherson Institute and across all our Faculties, McMaster is dedicated to integrating our research enterprise into our teaching and learning. We provide our students with an enriching and transformative educational experience, which provides numerous opportunities for experiential, work-integrated and self-directed learning.

## **Examples of Institutional Initiatives**

### **Innovative initiatives and leadership in teaching and learning**

- The MacPherson Institute investigates leading approaches to teaching and learning and develops innovative programming to implement these approaches, such as the two-year Leadership in Teaching and Learning Fellowship, which supports faculty who serve as mentors to their peers.
- Currently, 194 graduate students and postdoctoral fellows are working toward Teaching and Learning Certificates and 400 students have attended the Teaching and Learning Forum.
- To date, 16 McMaster faculty members have been honoured as 3M National Teaching Fellows.

### **New developments in online and blended learning**

- The new Masters in Child Life and Pediatric Psychosocial Care graduate program is delivered with a creative online learning format, complemented by two residency periods.
- McMaster's Bachelor of Technology program is placing its Information and Communication Technology degree program completely online in both lecture and lab contexts.
- McMaster has developed an innovative blended format for high-enrolment foundational courses, such as introduction to economics, biology, chemistry, physics, psychology and environmental science, with more to come.

### **Initiatives and programs that develop student entrepreneurship**

- Slated to open in the fall of 2017, the Gerald Hatch Centre for Engineering Experiential Learning is a LEED-certified hub for student exploration and a living laboratory for sustainable building technologies.
- Led by Commerce students in the DeGroote School of Business, the Canada's Next Top Ad Exec competition celebrated its 10<sup>th</sup> anniversary in 2016, attracting 251 students and 25 teams from across Canada.
- The Forge, McMaster's campus-linked accelerator, now supports student entrepreneurs with two off-campus spaces. In addition, Forge@Mac offers extensive on-campus programming, such as workshops, events, speakers and startup competitions. More than 1,400 students have participated in the events and 530 in startup competitions.
- McMaster's Walter G. Booth School of Engineering Practice and Technology was the recipient of the 2016 Global Award for Entrepreneurship Education Excellence from the International Council of Small Business and Entrepreneurship.

### **The many faces of experiential learning**

- The DeGroote School of Business Commerce Internship program is the largest undergraduate business internship program in Ontario, providing students with 12 to 16 months of work-integrated learning.
- Upper-year students work with the community in Social Sciences in Action, a student-driven capstone course.
- Students in the Human Rights in History course travelled to the Canadian Museum for Human Rights for an intensive hands-on workshop in summer 2016.
- Students in the School of Nursing hone their skills through simulation-based learning on campus, and then with clinical placements throughout the Hamilton, Halton, Peel, Niagara and Brant regions.
- Students in the Honours Bachelor of Health Sciences program participate in community-based course work, an intensive embedded learning experience in the global health specialization and a practicum in the child health specialization.
- The McMaster Automotive Resource Centre is one of Canada's leading research facilities in electric and hybrid vehicles. Teams of engineers, scientists and social scientists work together to create solutions, such as hybrid and electric powertrains and lighter materials that make cars more fuel efficient. Students collaborate with industry partners on experiential projects at this 80,000-square-foot, state-of-the-art facility, helping to develop the next generation of smart, sustainable transportation.

- The McMaster Manufacturing Research Institute, one of Canada’s most advanced and best-equipped research laboratories in this field, undertakes applied research with industrial partners and provides experiential training opportunities for graduate and undergraduate students.
- McMaster is a member institution of Ontario Universities International and participates in the Ontario/Rhône-Alpes, Ontario/Jiangsu, and Ontario/Baden-Württemberg student exchange programs.

## Metrics and Targets

System-Wide Metrics	2019-20 Target
Composite score on National Survey of Student Engagement questions related to students’ perceived gains in higher order learning outcomes	2.75
Proportion of programs with explicit curriculum maps and articulation of learning outcomes	Curriculum Maps: 100% Learning Outcomes: 86%
Graduation rate (from the Consortium for Student Retention Data Exchange)	79%

Institutional Metrics	2019-20 Target
Aggregated Normalized Instructor Effectiveness Score	76*

\* McMaster is in the process of modifying and enhancing its student satisfaction evaluation process, which it expects to initiate in the next year. This will enable more detailed analysis, from which a modified metric will likely need to be developed.

## 3.0 Access and Equity

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*This section recognizes institutions for their efforts in improving postsecondary education equity and access. Institutions play an important role in providing equitable and inclusive environments that make it possible for students from diverse communities to thrive and succeed.*

*Institutions will also be recognized for creating equitable access opportunities that can include multiple entrance pathways and flexible policies and programming, with the focus on students who, without interventions and support, would not otherwise participate in postsecondary education. Examples include outreach to marginalized youth, transition, bridging and access programs for adults with atypical education histories and who do not meet admission requirements.*

## **Institutional Approach to Improving Access and Equity**

McMaster is deeply committed to the principles of access and equity. Our Statement on Building an Inclusive Community with a Shared Purpose reinforces the university's commitment to the values of respect, collaboration and diversity. We are dedicated to building an inclusive community that has meaningful representation — at all levels and in all constituencies on campus — of the diversity evident in the wider community. The University Equity Plan has been updated recently, so that it reflects evidence-based best practices from sources such as the Athena Swan Program (U.K.), the National Science Foundation's Advance Program (U.S.), and the Canadian Tri-Council Agencies. We will continue to work to facilitate student mobility, create enhanced pathways and improve access for underrepresented groups, including crown wards, first-generation students, adults with atypical educational backgrounds and Indigenous students.

McMaster is located on the traditional territories of the Mississauga and Haudenosaunee nations, and within the lands protected by the Dish with One Spoon wampum agreement. Our main campus is situated near Six Nations of the Grand River, the most populated Indigenous reserve in Canada. McMaster is the only research-intensive university in Canada located in such close proximity to an Indigenous reserve and we have built trusted relationships that date back more than 25 years. We have benefited from the skills, knowledge, and wisdom of our Indigenous partners, scholars, students, and staff, and we will continue to work together to create meaningful pathways for Indigenous learners.

## **Examples of Institutional Initiatives**

### **Initiatives that are building a culture of inclusion**

- A newly created senior role, Vice-Provost, Equity and Inclusion, will be McMaster's lead on advancing equity and diversity on campus.
- The Equity and Inclusion Office provides educational opportunities, consultation and advice on barriers to accessibility; oversees the Sexual Violence Response Protocol; and supports the work of the President's Advisory Committee on Building an Inclusive Community and the McMaster Accessibility Council.
- McMaster has hired Cook Ross, a firm specializing in diversity and inclusion, to provide training and certification to faculty and staff equity leads. These workshops will be offered to approximately 200 faculty and staff members involved in hiring and selection processes.

### **A longstanding commitment to Indigenous studies and students**

- Founded in 1992, McMaster's Indigenous Studies Program recently moved to L.R. Wilson Hall. The new space includes a Ceremonial Room, an Elders Room and an outdoor patio filled with native plants.
- A recently created position of Associate Director, Indigenous Services, is facilitating enhanced guidance and support for Indigenous students at McMaster.

- McMaster’s Indigenous Undergraduate Summer Research Scholars program, launched in July 2015, gives Indigenous undergraduates from across Canada an early taste of life as a graduate student.
- The Indigenous Students Health Sciences Office works with McMaster’s Doctor of Medicine (MD) Program to facilitate an Indigenous admissions pathway that receives, on average, 31 applications each year and has admitted 69 self-declared Indigenous students to date.
- A longstanding partner of Six Nations Polytechnic (SNP), McMaster assists SNP students in transitioning to university and also provides scholarly and financial support to the SNP Indigenous Knowledge Centre.
- The Harvey E. Longboat Graduate Scholarship, coupled with the provincial Ontario Graduate Scholarship Indigenous award allowance, is awarded annually to a First Nations, Inuit or Métis graduate student who has demonstrated high academic achievement and community leadership. Established in 2009, the award honours the late Harvey Longboat, a Cayuga Chief and educator at Six Nations.

### **Initiatives creating flexible pathways to a university education**

- In 2015-16, we enrolled 1,119 credit transfer students (an increase of 18 per cent compared to 2014-15) from 20 Ontario universities and 20 Ontario colleges of applied arts and technology.
- In 2015-16, our total student population included more than 5,000 full-time first-generation students (about 17 per cent of McMaster students), more than 500 (1.7 per cent) Indigenous students, and more than 1,500 (five per cent) students with disabilities.
- The McMaster Discovery Program offers free, university-level courses in the liberal arts to adults who have faced significant barriers to accessing higher education.
- McMaster’s Centre for Continuing Education offers more than 300 courses and workshops. Small classes and flexible learning options, such as distance education, accommodate the needs of adult learners.
- McMaster offers numerous bridging programs that open new pathways, such as: the Venture Outreach program for students from Six Nations of the Grand River and New Credit First Nations; the Shifting Gears transition program for students with disabilities; and the McMaster Children and Youth University, which encourages young people to consider a university education.

### **Academic programming that reflects the world’s diversity**

- The Interdisciplinary Minor in African and African Diaspora Studies offers courses that span more than 15 departments at McMaster, from anthropology to history to women’s studies.
- The Faculty of Social Sciences has launched a new minor, Social Studies of Mental Health and Addiction, and a new Interdisciplinary Minor in Muslim Studies, both in response to strong student demand.

## Metrics and Targets

System-Wide Metrics	2019-20 Expected Value
<b><i>Number and proportion of the following groups at an institution:</i></b>	
Indigenous students	380-480 / 1.4%-1.8%
First generation students	3,750 – 4,850 / 14%-18%
Students with disabilities	850-1,000 / 3.1% - 3.7%
Francophone students	140-190 / 0.5% - 0.7%
Share of OSAP recipients at an institution relative to its total number of eligible students	50-60%
Number of transfer applicants and registrations, as captured by the Ontario University Application Centre	Transfer Applications: 500-600 Registrations: 60-70

Institutional Metrics	2019-20 Target
Student Satisfaction with services delivered to under-represented groups (composite of Indigenous, international, and students with disabilities) McMaster Graduated Survey	85%

## 4.0 Research Excellence and Impact

*This section captures institutional strengths in producing high-quality research on the continuum of fundamental and applied research through activity that further raises Ontario's profile as a globally recognized research and innovation hub. It also acknowledges that research capacity is strongly linked with graduate education.*

### Institutional Approach to Research Excellence and Impact

McMaster is an internationally ranked research-intensive university and the second-most research-intensive university in Ontario by a substantial margin.<sup>1</sup> We consistently achieve research excellence and impact, as measured by total publications, total citations and total sponsored research income per full-time faculty

member. Our research reflects current and emerging social and economic issues of relevance to our local and global communities, and we collaborate with many other top academic institutions around the globe, as well as numerous industrial, government and community partners.

McMaster is home to 82 endowed chairs, 69 Canada Research Chairs, six endowed professorships, six NSERC Industrial Research Chairs, three Canadian Institutes of Health Research Chairs, and one Canada Excellence Research Chair. With more than 70 research centres and institutes, McMaster is well known for our interdisciplinary, collaborative research enterprise, which supports the training of both graduate and undergraduate students. Graduate training is in fact central to our research intensity, and we are committed to equipping our graduate students with the knowledge and skills to translate their academic achievements into success after graduation.

<sup>1</sup> <http://www.hegco.ca/SiteCollectionDocuments/Report-The-Differentiation-of-the-Ontario-University-System.pdf> (p. 58) | <https://researchinfosource.com/pdf/CIL%20Top%2050%20research%20universities%202016.pdf>

## Examples of Institutional Initiatives

### Top marks in global rankings

- McMaster is one of only two Ontario universities consistently ranked in the top 100 in the world by the major global ranking systems.
- In August 2017, McMaster was ranked 66<sup>th</sup> in the world and in the top three in Canada (with the University of Toronto and the University of British Columbia) by the Shanghai Jiao Tong University Academic Ranking of World Universities.
- In September 2017, McMaster placed 78<sup>th</sup> in the world in the 2018 Times Higher Education World University Rankings.
- McMaster is also ranked 27<sup>th</sup> in the world and third in Canada in the Clinical, Pre-Clinical and Health category of the 2017 Times Higher Education World University Rankings; 33<sup>rd</sup> in the world in the Clinical Medicine and Pharmacy category of the 2016 Shanghai Jiao Tong University Academic Ranking of World Universities; 27<sup>th</sup> in the world in Nursing and 35<sup>th</sup> in the world in Medicine in the 2017 QS World University Rankings.

### A leader in research funding

- In 2016 results from Research Infosource, McMaster placed second in the country among Canada's top research-intensive universities, averaging \$358,300 per faculty member, nearly double the national average.
- In 2015 Research Infosource results, McMaster placed first in the country in both total corporate research income (\$588.7 million) and total corporate research income as a percentage of total university income (35 per cent).

- According to the most recent data available, McMaster has the highest average total Tri-Council funding allocation per principal investigator (\$78,890 in 2015-16) of Ontario's research-intensive universities.
- In Social Sciences and Humanities, McMaster ranks first in Ontario for the average size of grants per full-time faculty member and third in the number of grants per 100 full-time faculty members.
- In 2016 McMaster launched the Centre for Advanced Nuclear Systems with \$24.5 million from the Canada Foundation for Innovation, the Ontario Ministry of Research and Innovation and private donations.

### **Highlights of recent research initiatives at McMaster**

- A study published in 2016 on the prevention of heart disease, conducted by McMaster's Population Health Research Institute and Hamilton Health Sciences, was named one of the 14 most notable articles in the world by the *New England Journal of Medicine*.
- McMaster is home to four unique longitudinal studies: the Canadian Longitudinal Study on Aging, a 20-year study of more than 50,000 men and women; the Prospective Urban Rural Epidemiology cohort study of 190,000 subjects in 25 countries; the Canadian Healthy Infant Longitudinal Development cohort study of 3,500 Canadian children and their families from pre-birth to school age and beyond; and the Aboriginal Birth Cohort study of mothers and infants from the Six Nations Reserve.
- In 2016 the Faculty of Humanities established the Institute on Ethics and Policy for Innovation, supported by the Bill and Melinda Gates Foundation, to enhance the effectiveness of global health initiatives.
- Launched in summer 2016, the McMaster Indigenous Research Institute will be a leader in Indigenous knowledge and research by and with Indigenous peoples.
- With a commitment of \$35 million in funding from the province of Ontario, McMaster successfully launched an Advanced Manufacturing Consortium with the University of Waterloo and Western University.
- The Canadian Centre for Electron Microscopy provides state-of-the-art electron microscopy capabilities and expertise each year to about 350 clients from across Canada and around the world.
- Two national patient-oriented research networks have been established, each supported by a \$12.5 million federal grant: the Chronic Pain Network and the IMAGINESPOR Chronic Disease Network on intestinal disease.
- A new Digital Transformation Research Centre in the DeGroot School of Business will investigate the growing digital revolution.



**Metrics and Targets**

<b>System-Wide Metrics</b>	<b>2019-20 Target</b>
Tri-council funding (total and share by council)	<ul style="list-style-type: none"> <li>• Total: \$66,400,000 / 9.1%</li> <li>• CIHR: \$38,000,000 / 12.75%</li> <li>• NSERC: \$24,900,000 / 9.1%</li> <li>• SSHRC: \$3,500,000 / 5.7%</li> </ul>
Number of papers (total and per full-time faculty)	3,700 (4 per faculty member)
Number of citations (total and per paper)	210,000 (12 per paper)

<b>Institutional Metrics</b>	<b>2019-20 Target</b>
Research funding from industrial sources	\$70,000,000
Research Intensity Ratio: Total sponsored research income / full-time faculty	\$340,000

# 5.0 Innovation, Economic Development and Community Engagement

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*This section recognizes the unique role institutions play in contributing to their communities and to economic development, as well as to building dynamic partnerships with business, industry, community members and other colleges and universities. It focuses on regional clusters, customized training, entrepreneurial activities, jobs, community revitalization efforts, international collaborations, students, partnerships with Aboriginal Institutes and a program mix that meets needs locally, regionally and beyond.*

**Institutional Approach to Innovation, Economic Development and Community Engagement**

McMaster is dedicated to serving the public good through innovative research, industry collaborations, and engagement with our local, provincial, national, and global communities. Over the past five years, McMaster has consistently outpaced our peers in industry-sponsored research collaborations; these act as magnets, attracting businesses to our region, incubating new companies, and creating jobs for Canada's next generation of leaders – our students. McMaster's many community collaborations allow us to understand and address the priorities identified by our partners, and to integrate these priorities into the work of the academy. In 2016 McMaster signed Principles of Cooperation with the City of Hamilton, Mohawk College, and Redeemer University College. In doing so, we formally recognized the importance of postsecondary education to our communities and affirmed our collective responsibility to fostering community-building, environmental sustainability, and the long-term economic, cultural, and social life of our city and region.

## **Examples of Institutional Initiatives**

### **Initiatives in technology transfer and research commercialization**

- From 2014 to 2016, McMaster startups secured close to \$20 million in external venture capital or seed investment.
- In 2015-16, \$6.4 million in licensing fees and royalties were granted to McMaster researchers.
- McMaster's Centre for Probe Development and Commercialization recently secured US\$25 million (CDN\$33 million) in venture capital to launch a pharmaceutical company that will develop treatments to identify, attack and eradicate cancer cells.
- In 2015 McMaster became the first Canadian university to earn a drug establishment license, granted by Health Canada.
- McMaster's Centre for Surgical Invention and Innovation has developed Image Guided Automatic Robotics that extend the reach, dexterity and accuracy of physicians.
- The McMaster Fraunhofer Biomedical Engineering and Advanced Manufacturing Project Centre is a partnership with the Fraunhofer Institute for Cell Therapy and Immunology (Fraunhofer IZI) to develop novel technologies for cell therapy and point-of-care diagnostics.
- The McMaster Nuclear Reactor, the largest research reactor at a Canadian university, is used for medical, industrial, scientific and educational purposes. It is one of the world's largest suppliers of the medical radioisotope Iodine-125, used in the treatment of prostate cancer.
- McMaster Innovation Park is currently helping more than 55 companies bridge the gap from research to commercial application.

### **Initiatives to foster a healthier, brighter world**

- McMaster is working with a number of public and significant private sector partners on the application of artificial intelligence in healthcare delivery, in hospital and clinical settings and in training programs, including the planned development of an AI-based hospital in the Niagara region, which will help place Ontario at the leading edge of this exciting transdisciplinary domain.

- Opened in May 2015, the David Braley Health Sciences Centre is a collaboration between McMaster’s Department of Family Medicine and the City of Hamilton’s Public Health Service. Funded by McMaster, the City of Hamilton, the province of Ontario, and Hamilton businessman David Braley, it houses a family health clinic that provides services to 16,000 city residents, while also supporting the training of 4,000 students and health professionals.
- The Labarge Optimal Aging Initiative, launched in 2012 with a \$10 million gift from Suzanne Labarge, is home to the McMaster Optimal Aging Portal, a free, bilingual source of curated information for researchers, policy makers and the general public.
- In October 2016, McMaster announced a further \$15 million gift from Suzanne Labarge, which launched the Labarge Centre for Mobility in Aging.
- In 2015-16 McMaster hosted Big Ideas, Better Cities, a year-long showcase open to the community, which involved more than 190 researchers from all Faculties.
- Perspectives on Peace was also offered in 2015-16 for both the McMaster community and the public to engage with one another on themes of peace, conciliation and inclusion.

### **Initiatives that engage with the City of Hamilton and the wider world**

- CityLAB Hamilton will be an innovation hub for students to collaborate with City of Hamilton staff on experiential learning projects related to urban sustainability.
- The University Library is partnering with the Hamilton Public Library and the City of Hamilton to support Digital Storytelling, an initiative that captures and preserves the city’s history.
- McMaster’s Network for Community-Campus Partnerships recently hosted the second annual Change Camp Hamilton, a student-centred conversation on community, partnerships, and collaboration.
- McMaster is a founding partner in the Hamilton Anchor Institution Leadership initiative to work on issues such as housing, poverty and health.
- Based in McMaster’s Faculty of Humanities, the macGRID Simulation Research Network is an international network of academic, industry and community partners, using avatar virtual worlds for social science experiments, urban planning, education and artistic expression.
- McMaster is an active participant in the International Association of Universities and the Association of Commonwealth Universities, which advocate for diverse perspectives, social responsibility, international development and social change.

### **Metrics and Targets**

<b>System-Wide Metrics</b>	<b>2019-20 Target</b>
Graduate employment rates	90% (2 years) 85% - 88% (6 months)
Number and per cent of graduates employed full time in a related job (2 years after graduation)	1,180 (90%)

<b>Institutional Metrics</b>	<b>2019-20 Target</b>
New licenses (three-year rolling average)	133

# 6.0 Enrolment Strategy and Program Direction

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## Enrolment Plan and Corridor Midpoints

*This section also establishes the agreed-upon corridor midpoint that will form the basis of enrolment-related funding over the course of the SMA period.*

### Corridor Midpoint

For funding purposes **74,245.29** Weighted Grant Units (WGU) will be the corridor midpoint value for McMaster University. This value was determined using the institution’s actual enrolment (expressed as WGUs) from the 2016-17 academic year. McMaster University will receive funding consistent with this level of enrolment and subject to the policies contained within the *Ontario University Funding Model Technical Manual, May 2017, Version 1.0*.

## Projected Funding-Eligible Undergraduate Enrolments

*Below is the institutions projected enrolment of funding-eligible undergraduate enrolments for McMaster University*

	Projected 2017-18	Projected 2018-19	Projected 2019-20
<b>Undergraduate Full-time Headcounts</b>	21,536	21,837	22,079

*Note – for this table, Full-time Headcount should be reported for Fall term only.*

## Graduate Allocation – SMA 2017-2020

*Below are the allocation of funding eligible graduate and PhD spaces for the McMaster University*

	Target 2017-18	Target 2018-19	Target 2019-20
<b>Masters</b>	1,974	2,055	2,109
<b>PhD</b>	871	890	913
<b>Total</b>	2,845	2,945	3,022

*Note – allocations are shown in FTEs.*

## Projected International Enrolment

Below is the institutions projected enrolment of funding-eligible undergraduate enrolments for the McMaster University

	Projected 2017-18	Projected 2018-19	Projected 2019-20
<b>Undergraduate</b> Full-time Headcounts	2,607	3,146	3,914
<b>Masters</b> Full-time Headcounts	382	406	445
<b>Doctoral</b> Full-time Headcounts	453	453	463
<b>Total Enrolment</b> Full-time Headcounts	3,441	4,005	4,821

Note: International enrolments include all funding ineligible international students.

## International Enrolment Strategy and Collaboration

McMaster aspires to ensure that global engagement in education and knowledge generation is an integral part of our identity and presence in Canada and the world. In engaging with the international community, we are guided by principles of integrity, reciprocity, reflexivity, sustainability, and transformation.

The Office of International Affairs is responsible for McMaster's overall internationalization strategy through the facilitation of exchange agreements, the establishment of institutional linkages, and the coordination of externally funded international projects and programs. Enrolment planning, including the mix of domestic and international admissions, rests with the enrolment management team under the oversight of the Provost.

McMaster has historically worked to support the government's direction, which in recent years has focused on providing greater access for young Ontarians to a first-class university education. As such, we have seen a rapid increase in our domestic undergraduate enrolment. It is important to note that, prior to the double cohort year, McMaster had an international student participation rate of more than 10 per cent. However, in order to accommodate the growth in demand from domestic students, the international participation rate dropped to less than five per cent in year one of the double cohort, with only modest growth since then.

McMaster has the capacity – and the demand – to allow our international *undergraduate* enrolment to increase to a level more consistent with our traditional level of international *graduate* enrolment, which would restore international enrolment to a level that is in keeping with a global university.

## **Strategic Areas of Program Strength and Expansion**

### **Program Areas of Strength**

1. Medical Education and Research
2. Health and Society
3. Engineering and Sustainability
4. Science and Discovery
5. Digital Economy
6. Materials and Manufacturing
7. Business and Economics
8. Policy and Ethics in a Globalized World
9. Human Behaviour, Culture, and Society
10. The Arts and Creative Expression

The proposed areas of program strength are intended to inform program approval processes.

### **Program Areas of Expansion**

1. Health Sciences and the Broad Determinants of Health
2. Fostering Robust Societies
3. Business and Economics
4. Science and Engineering
5. Communications and Culture

# Financial Sustainability

The Ministry and the University recognize that financial sustainability and accountability are critical to achieving institutional mandates and realizing Ontario’s vision for the postsecondary education system. To this end, it is agreed that:

It is the responsibility of the governing board and senior administrators of the University to identify, track, and address financial pressures and sustainability issues. At the same time, the Ministry has a financial stewardship role. The Ministry and the University agree to work collaboratively to achieve the common goal of financial sustainability and to ensure that Ontarians have access to a full range of affordable, high-quality postsecondary education options, now and in the future.

The University remains accountable to the Ministry with respect to effective and efficient use of provincial government resources and student resources covered by policy directives of the Ministry, or decisions impacting upon these, to maximize the value and impact of investments made in the postsecondary education system.

<b>System-wide Metrics</b>	<b>2015-16 Actuals</b>
• Net Income / (Loss) Ratio	3.05%
• Net Operating Revenues Ratio	7.08%
• Primary Reserve Ratio	176 days
• Interest Burden Ratio	1.17%
• Viability Ratio	1.67



# 7.0 Institutional Collaborations and Partnerships

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- McMaster's Masters of Science in Global Health is delivered with experts from health sciences, social sciences and business, using digital technology. Its five partner universities are: Maastricht University in the Netherlands; Manipal University in India; Thammasat University in Thailand; The University College of Southeast Norway (HSN) in Norway; and Universidad del Rosario in Colombia. In 2015 the program received the Canadian Bureau for International Education Panorama Award for Outstanding International Education Program in the Academic category.
- McMaster is the only university in Canada to serve as host to the United Nations University through the Institute for Water, Environment and Health.
- McMaster has a number of pathway programs with colleges of applied arts and technology, which allow students to earn both a college diploma and a degree, including:
  - McMaster's Bachelor of Technology program, a joint program between the Faculty of Engineering and Mohawk College
  - McMaster's Collaborative Nursing program with Mohawk and Conestoga College
  - McMaster and Mohawk College Medical Radiation Sciences program
- Building on McMaster's successful partnership with Mohawk College, the Faculty of Science launched three new Honours Bachelor of Applied Science programs in 2016-2017.
- Beginning in 2016, McMaster students in any program in the Faculty of Humanities have been able to enhance their degree by taking a Mohawk College Post-Graduate Certificate in Communications Media Practices.
- McMaster partners with regional associations to support students with disabilities with their career transitions post-university. For example, Accessible Career Transition is a partnership between McMaster's Student Accessibility Services, the Student Success Centre and LIME Connect, which supports career transitions for students with disabilities.
- In 2015-16, McMaster began a three-year partnership with the Association of Faculties of Medicine of Canada to launch Franco Doc, an initiative which identifies Francophone and Francophile medical students, prepares them for experiential learning in the community, and recruits them for placements in official language minority communities. |

## 8.0 Ministry/Government Commitments

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- The SMA2 process has focused on implementing the first stages of the new funding model and demonstrating the ongoing commitment by all colleges and universities to student success. Future growth will only be funded through negotiated changes to an institution's funded enrolment corridor . Through the SMA2 cycle, the ministry will continue to work closely with institutions to ensure all dimensions of the funding model are implemented.
- In a memo to colleges and universities dated March 7, 2017, the ministry committed to using the SMA2 (2017-20) process as a transitional phase to commence the collaborative and joint development of performance metrics and targets, tied to funding, for SMA3 (2020-23). The ministry reiterates this commitment and reaffirms that metrics and targets included in SMA2 are not tied to funding at this time and are a beginning point for further discussions with the sector prior to their application in SMA3. Colleges and universities will have the opportunity to reset and realign metrics prior to the application of metrics in SMA3. The ministry will also engage other stakeholders as part of discussions on a broad metrics strategy.
  - The ministry commits to establishing a joint working group with each of the sectors and to begin detailed discussions in fall 2017 on metrics/targets and to seek input on the performance measurement methodology for SMA3.
- Colleges, universities and the ministry all benefit from processes that are transparent and non-duplicative. The ministry commits to work with colleges and universities to continue to streamline processes and seek opportunities to further reduce red tape (in part through increased access to other tools) , including reducing or eliminating duplicated reporting requirements.
- Through SMA2 discussions, the ministry has heard concerns about the challenges of delivering breadth in programming for Francophone and Francophile students, including the cost and funding of such delivery. Starting in fall 2017, the ministry commits to consulting institutions who have a formal mandate for bilingual and/or French-language delivery to review the delivery of French-Language programming and consider these concerns.
- In 2016, an extension of the existing tuition policy framework was announced to support a major reform in OSAP. The ministry will engage with both the college and university sectors around the next tuition policy framework, including examining the issue of tuition anomalies in certain professional programs as a result of past changes to tuition policy, and, for colleges, examining tuition levels relative to competitive college tuition frameworks in Canada.
- In recent years and during the SMA process, there has been an increased interest in the creation of a new polytechnic designation in the Ontario postsecondary education system. Starting in fall 2017, the ministry commits to undertake a review that examines whether improved benefits for students and employers are sufficient to make such a change. The ministry commits to working collaboratively with institutions across the sectors on this review.
- The ministry commits to continue to work collaboratively with universities to assess the anticipated need for additional graduate spaces related to programs that are currently under development.

- Starting in fall 2017, the ministry commits to undertake a review of the university Northern Grant working collaboratively with universities to examine whether the criteria for access and allocations of the Northern Grant represent an equitable approach. |

# Differentiation Areas of Focus

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Consistently ranked as Ontario’s second most research-intensive university, McMaster also offers a distinctive, personalized, and highly ranked student learning experience. This integration of research prowess with high student satisfaction is a key differentiator, and has led to McMaster being recognized as one of the world’s top universities, highly ranked in both advanced research and educational pedagogy.

With strengths across our six Faculties, McMaster excels in particular at advancing the STEM disciplines and is a recognized world leader in the health sciences.

McMaster is also a leader in the scholarship of teaching and learning with a longstanding history as an innovator in educational pedagogies, such as problem-based learning, the inquiry approach, and interdisciplinary programming.

The Core Operating Grant within the provincial funding formula allocates resources to universities on the basis of student enrolment. Research-intensive universities such as McMaster have always struggled to find the additional resources necessary to build and maintain the supporting infrastructure that underpins research excellence, particularly in the kinds of wet-lab research at which McMaster excels. We therefore welcome the establishment of a differentiation envelope. Should incremental funding be provided to universities within this envelope, McMaster would prioritize “Research Excellence and Impact” and would dedicate at least 50 per cent of available funding to this area.

While McMaster’s research excellence spans the globe, we remain deeply connected to our local community and in particular to the City of Hamilton. We foresee tremendous opportunities to build on these well-established partnerships to help transform the greater Hamilton region, from Halton to Niagara, into a national hub for research and commerce, based on advancing human and societal health and well-being. We would therefore see “Innovation, Economic Development and Community Engagement” as the second priority within the differentiation envelope.

Our engagement with Indigenous communities includes academic programming, the promotion of career paths, experiential opportunities for our students, and research collaborations. Our community partnerships further serve to create pathways for non-traditional learners to enroll in postsecondary education. Thus, “Access and Equity” remains another key priority for McMaster.

We see all these strengths as fully integrated and interdependent. As a research-focused student-centred university, we allocate resources in support of McMaster’s complete mission. Student-centred means that students are engaged in both disciplinary and pedagogical research, in order to develop the inquiring minds that will propel Ontario into a successful future. As a research-focused institution, we apply an evidence-based approach to pedagogy that fosters a continuous improvement mindset.

McMaster strives to cultivate a world-class, academically rigorous environment that advances health and well-being in all its forms, that allows our students, faculty, and staff to flourish and excel, and that fosters global research excellence, community-engaged scholarship, and innovative teaching and learning.

## Other Sustainability Issues

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*The ministry acknowledges the thoughtful and important considerations raised by institutions in this section. They include, but are not exclusive to:*

- o considerations related to overall funding levels;*
- o capital and deferred maintenance;*
- o environmental sustainability challenges;*
- o other government initiatives including proposed changes to labour legislation; and*
- o a number of fiscal sustainability issues [such as pension solvency]*

*The ministry will continue to work with institutions in support of collaboratively addressing these issues. McMaster currently enjoys a solid fiscal position, which results from a prudent allocation of resources and sound fiscal management. However, this has come at a cost of rising student-to-faculty ratios and crowded physical spaces. For many years, inflationary costs have been met through enrolment growth and a modest level of tuition inflation. In a corridor model, it will be essential that the province provides annual increases to the value of the WGU to offset the rising costs of education and research.*

# Proposed Enrolment Plan and Corridor Midpoints

## Projected Funding-Eligible Enrolments

Projected Funding-Eligible Enrolments					
				These years are for planning purposes and will not be included in the final SMA2	
	Projected 2017-18	Projected 2018-19	Projected 2019-20	Projected 2020-21	Projected 2021-22
<b>Undergraduate</b>					
· Full-time Headcounts	21,563	21,837	22,079	22,190	22,256
· FTEs	21,801	22,079	22,311	22,423	22,483
· First-year Intake	5,248	5,362	5,362	5,362	5,362
· WGUs	57,273	58,237	58,821	59,136	59,276
<b>Masters</b>					
· Full-time Headcounts	1,836	1,911	1,961	1,989	2,003
· FTEs	1,974	2,055	2,109	2,139	2,154
· WGUs	9,918	10,336	10,634	10,793	10,873
· New registrants	1,055	1,069	1,097	1,117	1,124
<b>Doctoral</b>					
· Full-time Headcounts	810	828	849	890	907
· FTEs	871	890	913	957	976
· WGUs	7,776	7,946	8,151	8,541	8,710
· New registrants	176	175	179	188	192
<b>Total Enrolment</b>					
· Full-time Headcounts	24,209	24,576	24,889	25,069	25,166
· WGUs	74,968	76,519	77,606	78,469	78,859

## Projected Weighted Enrolments and Corridor Midpoints

						These years are for planning purposes and will not be included in the final SMA2
	Projected	Projected	Projected	Projected	-	Projected
	2016-17	2017-18	2018-19	2019-20		2020-21
						2021-22
Estimated WGUs at corridor midpoint*	N/A	74,229	74,229	74,229		74,229
Estimated number of WGUs above or below corridor midpoint WGUs 1	N/A	0	148	606		1,281
Comments/ Notes: <sup>2</sup>	*Corridor midpoint uses the 2017/18 WGUs as provided in the Ministry Workbook.					
	WGUs exclude Collaborative Nursing and Midwifery.					
	WGUs are calculated using WGU weights with one decimal place.					
1. The estimated WGUs over or under the midpoint should be estimated using the Growing Moving Average formula described in the draft University Funding Model Technical Design paper.						
2. Please note any issues on the data provided, whether any technical adjustments are sought to the corridor midpoint, etc.						

## Projected International Enrolment <sup>1</sup>

					These years are for planning purposes and will not be included in the final SMA2
	Projected	Projected	Projected	Projected	Projected
	2017-18	2018-19	2019-20		2020-21
					2021-22
<b>Undergraduate</b>					
· Full-time Headcounts	2,607	3,146	3,914		4,461
· FTEs	2,892	3,400	4,127		4,658
					5,042

<sup>1</sup> Enrolment in this table includes international students only. Domestic students who have exceeded their BIU eligibility limits are not included in this table and are not included in Table 7.1.1.



· First-year Intake	853	900	1,270		1,270	1,270
· WGUs	6,514	7,480	8,873		10,078	10,986
<b>Masters</b>						
· Full-time Headcounts	382	406	445		446	447
· FTEs	411	437	479		480	481
· WGUs	2,164	2,309	2,538		2,544	2,548
· New registrants	244	258	282		283	284
<b>Doctoral</b>						
· Full-time Headcounts	453	453	463		464	468
· FTEs	487	487	498		499	504
· WGUs	4,345	4,345	4,443		4,452	4,497
· New registrants	83	83	84		85	85
<b>Total Enrolment</b>						
· Full-time Headcounts	3,441	4,005	4,821		5,371	5,778
· WGUs	13,024	14,135	15,855		17,074	18,031
<b>Note:</b> International enrolments include all funding ineligible international students.						

**Note:** International enrolments include all funding ineligible international students.

# Financial Sustainability – WITH COMMENTS

*The Ministry and the University recognize that financial sustainability and accountability are critical to achieving institutional mandates and realizing Ontario’s vision for the postsecondary education system. To this end, it is agreed that:*

*It is the responsibility of the governing board and senior administrators of the University to identify, track, and address financial pressures and sustainability issues. At the same time, the Ministry has a financial stewardship role. The Ministry and the University agree to work collaboratively to achieve the common goal of financial sustainability and to ensure that Ontarians have access to a full range of affordable, high-quality postsecondary education options, now and in the future.*

*The University remains accountable to the Ministry with respect to effective and efficient use of provincial government resources and student resources covered by policy directives of the Ministry, or decisions impacting upon these, to maximize the value and impact of investments made in the postsecondary education system.*

<b>System-wide Metrics*</b>	<b>2015-16 Actuals**</b>	<b>Comments</b>
<ul style="list-style-type: none"> <li>Net Income / (Loss) Ratio</li> </ul>	3.05%	<p>These ratios remain positive and strong, despite lower investment income being recognized in the 2015-16 year. The ratios remain positive because of McMaster’s diversified consolidated income profile, which means that 50 per cent of McMaster’s revenues come from MAESD education-linked funding (Basic Income Units and tuition), with the remainder being a combination of research activities, ancillary operations, investments, donations and other grants, substantial other income from non-degree educational activities and programs, contract revenues, patent royalties, nuclear reactor sales, athletics membership and user fees and investments in spin-off operations in which McMaster retains an equity position.</p> <p>McMaster’s diversified income is noted as a key strength by its credit rating agencies and means that McMaster’s total income is less volatile when any one income item underperforms.</p>
<ul style="list-style-type: none"> <li>Net Operating Revenues Ratio</li> </ul>	7.08%	Decline from 2014/15 is due to a decrease in deferred cash contributions.
<ul style="list-style-type: none"> <li>Primary Reserve Ratio</li> </ul>		McMaster has a strong liquidity profile, although

	176 days	the 2015-16 ratio is higher than McMaster's standard ~120 days due to recent debenture proceeds raised for capital projects. McMaster monitors its primary reserve ratio in relation to overall university planning projections, typically resulting in a ratio of greater than 0.3x or greater than 110 days.
• Interest Burden Ratio	1.17%	The interest burden ratio for 2015-16 is higher than prior years, due to the net interest impact associated with the debenture taken in late 2015. Only a partial year of interest expense was incurred by McMaster, which was offset by the debenture proceeds being invested until required for planned capital expenditures. The 2016-17 results will include a full year's debenture net interest expense, which will increase the burden within an acceptable range.
• Viability Ratio	1.67	The viability ratio declined in relation to the increase in debt McMaster undertook with its debenture. McMaster includes this ratio in its integrated multi-year financial projection and debt management report (updated annually) and monitors it to ensure that the ratio remains above 1.0. A temporary decline below 1.0 is allowable if justified for strategic projects and if the decline is for less than 3 years.