



McMaster Goals and Priorities

2015-2016







McMaster Goals and Priorities

McMaster University was founded in 1887 and is governed by the McMaster University Act, 1976. As a research-focused student-centred university, we serve our community and society by nurturing and supporting the fulfillment of human potential: inspiring creativity and critical thinking, promoting an enduring love of learning and the habit of inquiry, and undertaking innovative research that extends the boundaries and enhances the efficacy of knowledge. McMaster is one of Canada's most research-intensive universities; one of only two institutions in the province to be ranked among the top 100 universities in the world and one of only four in Canada.

Vision Statement

To achieve international distinction for creativity, innovation and excellence.

Mission Statement

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.

Strategic Priorities

McMaster's vision, mission and mandate statements provide the foundation for our strategic planning and President Patrick Deane's letter, *Forward with Integrity*, outlines our priorities. At McMaster, we strive to foster the creative and intellectual

potential of our students, while at the same time preparing our graduates to build successful careers. McMaster has a deeply integrated teaching, learning and research mandate. We develop innovative and entrepreneurial graduates, undertake cutting-edge research on a range of pressing issues, and serve our community by leading and partnering on a variety of locally-focused initiatives. McMaster also has a strong track record of working with industry, successfully outpacing our peers over the last five years in industry sponsored research. Such industrial collaborations act as magnets, attracting businesses to our region, allowing for the incubation of new companies and creating jobs for Canada's next generation of leaders – our students.

Strategic Goals

1

Goal one: Developing a distinctive, personalized, engaging and sustainable student experience

McMaster has transformed post-secondary teaching and learning over many decades. Our signature pedagogies, such as inquiry and problem based learning, have been incorporated into multiple programs at McMaster, and are recognized and adopted worldwide. Our goal is to build on the success of our most creative and innovative programs to provide an enriching and transformative learning experience for all students, which includes opportunities for experiential, work-integrated and self-directed learning, and allows for the consideration of multidisciplinary perspectives. Alongside this, McMaster is also committed to further integrating our world-class research enterprise into teaching and learning, and connecting the learning experience to our local, national and international communities.

Key Initiatives

■ The Paul R. MacPherson Institute for Leadership, Innovation and Excellence in Teaching (MacPherson Institute, formerly known as MIETL) continues to launch new initiatives and to provide strong pedagogical and research expertise to enable program enhancement and technology integration. The Student Partners program engages students in all aspects of the MacPherson Institute's work and the MacChangers program, a pilot project with the Faculty of Engineering and the University College of London, UK, supports interdisciplinary teams of students in proposing projects intended to further improve the student learning experience at McMaster.

■ The Living Learning Centre, a new innovative facility, has now been approved for construction. The Centre will enhance the student experience by bringing together academic space with residence spaces for 500 students, as well as the Student Wellness Centre, Student Accessibility Services, and the McMaster Children's Centre. The targeted completion date is September 2019.

■ The online Student Learning Portfolio, first launched in 2013-2014 to facilitate the thoughtful integration of classroom and extracurricular learning with students' personal goals, has now been enhanced with a more user-friendly technology platform to facilitate the process for both students and faculty.

■ Across the University, students continue to be offered opportunities to engage in transformative experiential learning experiences and work-integrated learning. Recent initiatives include:

- The launch of three new co-operative education programs in the School of Geography and Earth Sciences, Faculty of Science, in 2015-2016.
- The development of the Gerald Hatch Centre for Engineering Experiential Learning. Due to open in Fall 2017, this Centre will operate as a central hub for student-focused experiential learning in Engineering. It will enable undergraduate students to integrate projects undertaken both inside and outside the classroom.
- A variety of experiential

learning opportunities are offered by the DeGroot School of Business, including the "Canada's Next Top Ad Exec" competition, which was developed at McMaster and celebrated its 10th anniversary this year, with more than 230 teams participating from across the country.

■ Support for student entrepreneurs is provided through "The Forge", which includes two off-campus "accelerator" locations for start-ups at the McMaster Innovation Park and on James Street North (opened Fall 2015), as well as on-campus programming (workshops, events, competitions) under the umbrella "Forge@Mac". In addition, a number of hackathons and "StartUp Weekends" have been held to encourage and support commercialization and entrepreneurship.

■ To meet societal and labour market needs and student demand, McMaster will continue to develop new innovative inter-disciplinary and multi-disciplinary programs. Recent initiatives include:

- The Integrated Biomedical Engineering and Health Sciences Plus program, currently being reviewed by

the Quality Council and the Ministry of Training, Colleges and Universities (MTCU), now known as the Ministry of Advanced Education and Skills Development (MAESD). This program will introduce students to the Biomedical Engineering and Sciences field, which integrates biological and medical sciences with engineering and the physical sciences.

□ The development of the Bachelor of Commerce in Integrated Business and Humanities program. Designed to equip students with multi-disciplinary knowledge and the skills to resolve complex and multi-dimensional problems, this program is currently going through the approval process with the goal of launching it in September 2017.

□ A new School of Interdisciplinary Science (SIS) launched by the Faculty of Science in January 2016, brings together Honours Integrated Science, Life Sciences, Medical Physics and Medical Radiation Sciences. The new school fosters exploration and discovery, and emphasizes experiential, collaborative and student-centred learning.

■ McMaster supports a variety of initiatives intended to equip our students with the leadership skills needed to be engaged and successful citizens. Recent initiatives include:

□ The Michael G. DeGroot Health Leadership Academy, a joint initiative between the Faculties of Health Sciences and Business, will provide a pathway for healthcare students and professionals to earn an accelerated MBA. The Academy will also offer a number of certificate and diploma programs intended to

develop world-class leadership capabilities in the health sector.

□ The Graduate Diploma in Critical Leadership in Social Services and Communities offered by the School of Social Work, Faculty of Social Sciences, will enable professionals working in the field to engage in post-Master's educational opportunities to advance their leadership skills.

□ The Faculty of Humanities has launched two Art of Leadership courses to provide McMaster students with practical mentoring and coaching activities while focusing on contemporary leadership concepts, values and attitudes, motivational techniques and change management.

McMaster is ranked among the top 100 universities in the world.

Key Outcomes

■ Based on the National Survey of Student Engagement (NSSE), McMaster frequently ranks higher than the Ontario average in the categories of academic challenge, active and collaborative learning environments, enriching educational experiences and supportive campus environment.

■ McMaster programs provide high-quality preparation for future careers. In the 2015 survey of McMaster's 2013 undergraduate degree recipients, 80.6 per cent of respondents indicated that they were in full-time employment that was closely related or somewhat related to the subject matter of

their program of study two years post-graduation. The Ontario average was 78 per cent.

■ In 2015-2016, McMaster enrolled 1,119 credit transfer students (an increase of 18% compared to 2014-2015) from 20 Ontario universities and 20 Ontario colleges of applied arts and technology. We have agreements in place with a variety of universities and colleges.

■ The McMaster Academic Planner (MAP) online interactive planning tool, the first of its kind, is now in use by Faculty of Science current and prospective students to explore the many pathways open to them at McMaster. The planner includes upper level student profiles, experiential education samples for each department, program and school, and a series of videos explaining how the Science curriculum intersects with the Science Career and Co-op Education office initiatives, in addition to program information and course requirements.

■ As a result of the Student Mental Health and Well-Being Strategy launched in 2015, more than one hundred front line staff have been trained on "Mental Health First Aid", enabling them to better recognize and refer students who are experiencing mental health difficulties. A co-ordinated and consistent approach to handling urgent severe cases of students in mental distress has been established, and a research grant of more than \$800,000 from the province's Mental Health Innovation Fund allowed the development of the "Arrive and Thrive" program, which supports students with mental health and substance abuse challenges.

■ Since its establishment just over two years ago, The Forge has incubated more than 60 companies and is currently housing 40. Two companies

have moved out of The Forge as self-sustaining and profitable ventures and another 15 to 18 companies are either making money or have received investment or competition award money. More than 1,400 students have participated in Forge@Mac events, with around 530 students having participated in on-campus entrepreneurial competitions.

■ The MacPherson Institute has led the redesign of eight McMaster courses for online or blended delivery. Launched in collaboration with Coursera, McMaster's first MOOC specialization, Finance for Everyone, will help students learn the language of finance and understand how the flow of money relates to the most important key social issues influencing their lives and communities.

■ Almost 200 students have participated in the MacPherson Institute's Student Partners Program, which recognizes students as important contributors as coauthors, co-designers and conference presenters.

■ The Learning Portfolio has been implemented into 17 curricular and co-curricular programs at McMaster and the number of users continues to grow. In 2015-2016 there were 8,237 users, an increase of 11% over 2014-2015. The number of items created by these users (which include artifacts, reflections, presentations, and collections) also saw a large increase of 27% from 107,724 to 136,309.

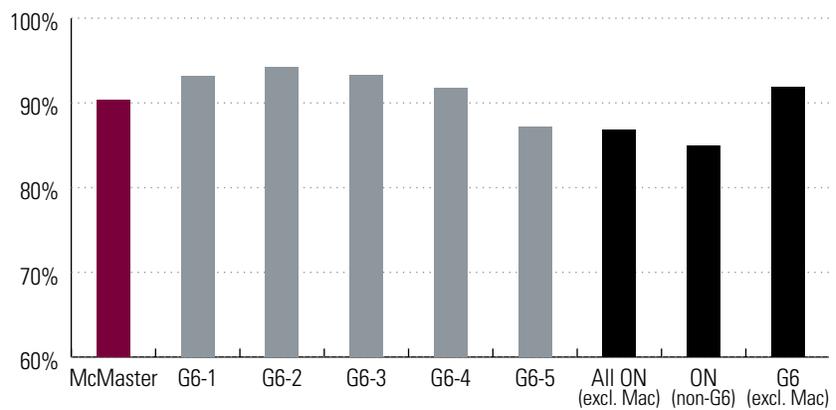
■ In response to societal needs and student demand, McMaster developed and received MTCU's approval for a total of nine new programs during 2015-2016. Among them, the PhD in Labour Studies, developed by the Faculty of Social Sciences, will engage students in the study of the world of work and labour. The first of its

kind in Canada, the program will support students in developing leadership and high-level skills in community-engaged research and critical theory, and enable them to engage constructively in public policy debates.

■ Building on the University's successful partnership with Mohawk College, the Faculty of

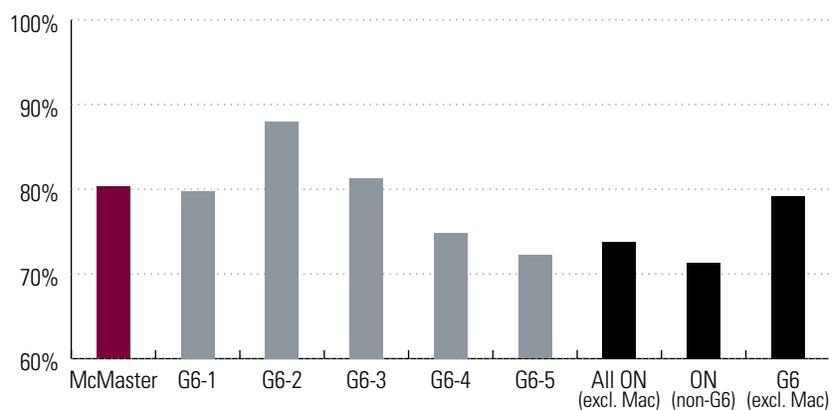
Science will be launching three new Honours Bachelor of Applied Science programs in 2016-2017: Honours Human Behaviour, Honours Human Behaviour (Autism and Behavioural Science Specialization) and Honours Human Behaviour (Early Childhood Education Specialization). Students in one

Undergraduate First Year to Second Year Retention Rates – Fall 2015



Note 1: Retention rates are based on first-time, full-time undergraduate students who commenced their studies in the previous year and have continued to study at the same institution in the reporting year.
 Note 2: G6-1 to G6-5 represent McMaster's Ontario peers who are members of the U15 (Canada's 15 research-intensive universities).
 Source: CSRDE (Consortium for Student Retention Data Exchange) 2016.

Undergraduate Eight Year Graduation Rate – 2014



Note 1: The university graduation rate is calculated through the selection of all first year, new to the institution, undergraduate students from the Fall enrolment file 8 years prior, who received a bachelor or first professional degree.
 Note 2: G6-1 to G6-5 represent McMaster's Ontario peers who are members of the U15 (Canada's 15 research-intensive universities).
 Source: University Statistical Enrolment Report and Degrees Awarded submissions to MTCU, 2015.

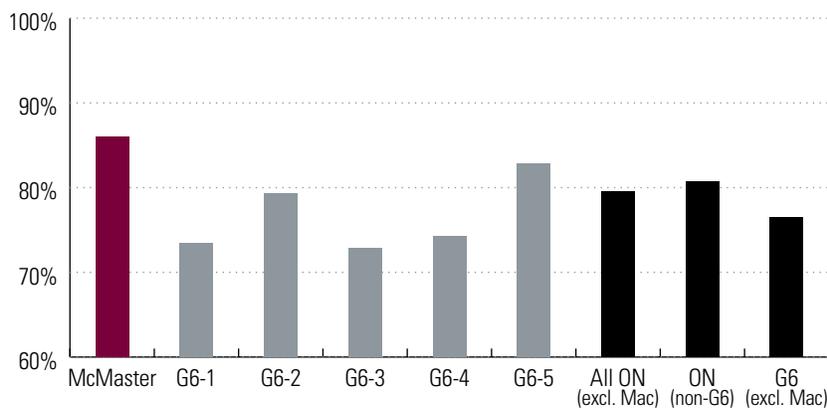
of the two specialization streams within the program pursue two qualifications simultaneously, with graduates receiving an Ontario College Graduate Certificate from Mohawk and the McMaster Honours Bachelor of Applied Science degree. Also beginning in 2016, McMaster students in the Department of Communication

Studies and Multimedia, Faculty of Humanities, will be able to complete a Mohawk College Post Graduate Certificate in Communications Media Practices. The certificate will be completed over two summers.

■ McMaster undergraduate students now have the ability to enrol and graduate with multi-

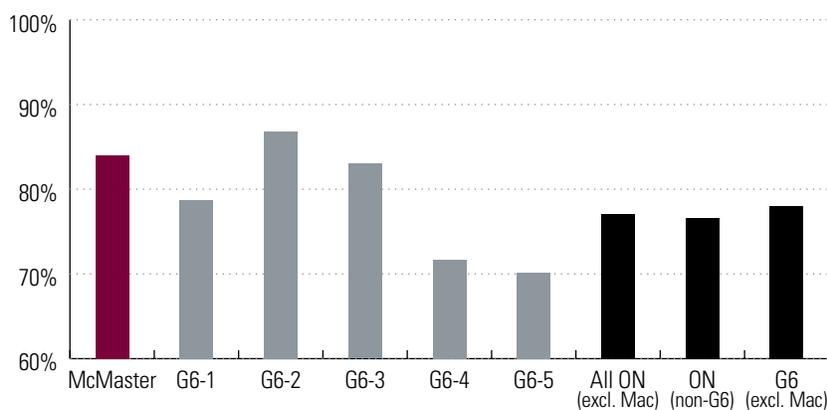
disciplinary credentials from more than one Faculty as a result of inter-Faculty collaborations. Specifically, students may complete an Honours degree in Humanities together with a Specialized Minor in Commerce and will have the opportunity to go on to complete a Master of Business Administration at McMaster in one year.

NSSE – Entire Educational Experience Rated as Excellent or Good – 2014



Note 1: Ontario universities administer the NSSE survey every 3 years, and 2014 is last available data.
 Note 2: G6-1 to G6-5 represent McMaster's Ontario peers who are members of the U15 (Canada's 15 research-intensive universities).
 Source: National Survey of Student Engagement Survey (NSSE) 2014.

NSSE – Would you start over at the same institution Rated as Definitely Yes, or Probably Yes – 2014



Note 1: Ontario universities administer the NSSE survey every 3 years, and 2014 is last available data.
 Note 2: G6-1 to G6-5 represent McMaster's Ontario peers who are members of the U15 (Canada's 15 research-intensive universities).
 Source: National Survey of Student Engagement Survey (NSSE) 2014.

McMaster frequently ranks higher than the Ontario average in NSSE benchmarks.

Strategic Goals

2

Goal two: Enhancing the connections between McMaster and the communities we serve, locally, provincially, nationally and around the globe.

McMaster remains committed to public service, with a focus on fostering ongoing collaboration between the University and community partners. This work enables us to better understand and consider the issues identified as priorities by local and global communities, and to integrate them fully and meaningfully into the work of the academy. In addition to this societally-focused research, teaching and service, McMaster also supports the broader community through our work to foster a diverse campus community and create enhanced pathways and improved access and supports for underrepresented groups, including Indigenous students, Crown Wards and First Generation students.

Key Initiatives

■ McMaster's Network for Community-Campus Partnerships has been engaged in a strategic planning process over the last year and launched its 2016-2020 strategic plan in June 2016. The Network has also developed a user-friendly website, including a database designed to connect members of the community with particular projects or people, published a practical guide for community groups seeking support or advice from University researchers, and acts as a source of advice on community-engaged scholarship and support, both internally and externally.

■ McMaster worked with our partners at Mohawk College, Redeemer University College, and the City of Hamilton to develop a series of principles of cooperation to guide our future work together. The primary goal is to consider opportunities for collaboration and ensure that resources and opportunities are maximized in our interactions.

■ CityLAB Hamilton is a proposed innovation hub intended to nurture collaborative projects involving McMaster University,

Mohawk College, and Redeemer University College faculty and students, City staff, and members of the broader community.

The partnership is intended to advance the City of Hamilton's strategic priorities, while building on student and faculty creativity to address some of our community's most complex challenges.

■ McMaster is also a founding partner in the Hamilton Anchor Institution Leadership initiative (HAIL), a City-wide project which brings together the leaders of anchor institutions to work on community-based issues of concern, such as housing, poverty, and health.

■ The Faculty of Engineering is working with industry and municipal partners to create efficient integrated community energy systems that generate, store and share electricity, thermal waste heat, renewable energy and traditional fuel in a seamless manner.

■ We continue to build upon our strong partnership with Six Nations Polytechnic to assist Indigenous learners seeking a university degree to transition to

McMaster, as well as providing support to the Indigenous Knowledge Centre. The recent appointment of an Associate Director, Indigenous Services, in Student Affairs is intended to provide enhanced guidance and support for Indigenous students at McMaster.

■ In 2015, McMaster's Venture Outreach welcomed more than 60 students from Six Nations of the Grand River and New Credit First Nations to campus for two free weeks of overnight camp. Campers learned about engineering disciplines through hands-on projects, demonstrations and interactive presentations.

■ The McMaster Children and Youth University (MCYU) has been expanded to include the "MCYU in the City" program of workshops, involving students throughout Hamilton. The MCYU is dedicated to the educational engagement of young people and their families, using a variety of inquiry-based lectures and hands-on community-based workshops. The goal is to demonstrate the valuable contributions of young people to knowledge development, and to present

McMaster remains a significant source of employment within our community, and in 2016 was named one of Hamilton-Niagara's Top Employers.

university education as a viable option for those who may not previously have considered it.

■ McMaster has developed a number of initiatives aimed at facilitating meaningful community dialogue, fostering collaboration, and building partnerships including:

□ “Perspectives on Peace”, a year-long campaign, provided opportunities for members of the McMaster community to engage with one another around the theme of peace in a spirit of conciliation, engagement and inclusion. The campaign included lectures, facilitated discussions, art exhibits, story-telling circles and McMaster's first ever Model United Nations conference (MACMUN), which involved more than 120 students from across the campus.

□ For the 2015-2016 academic year, the McMaster Seminar on Higher Education took as its theme “The Engaged University” and focused on the role and responsibility of the Academy in relation to a variety of issues, ranging from climate change to the work of the United Nations. The free series of events was open to all members of the local community.

□ The DeGroote Women's Professional Network, formed in 2016 by the DeGroote School of Business, is committed to the advancement

of women in business and society through continuing learning and professional development. The Network brings together current and emerging female leaders from a diverse range of backgrounds and offers networking opportunities, mentorship platforms, and philanthropic initiatives.

Key Outcomes

■ In 2015-2016, McMaster welcomed over 5,000 full-time first-generation students (representing about 17 per cent of McMaster students), over 500 (1.7 per cent) Indigenous learners (First Nations, Métis, and Inuit) and 1,008 (4 per cent) students with disabilities. McMaster continually strives to improve access to underrepresented groups.

■ The Network for Community-Campus Partnerships hosted the 2nd annual Change Camp Hamilton, an action-oriented conversation focused on community, partnerships and collaboration. The dialogue drew 200 participants (double the attendance of the 2015 event), including 100 students, Hamilton's Mayor and City Manager, and senior leadership from Mohawk College and Redeemer University College, as well as McMaster. Key outcomes include the engagement of more than 30 organizations across the City and the development of 234 action recommendations aligned with the City of Hamilton's strategic plan. The Change Camp Hamilton

partnership is now pursuing these recommendations while also developing a comprehensive approach to embed Change Camp Hamilton actions within curricular, co-curricular, and extra-curricular activities that take place throughout the year.

■ McMaster's students have been successful in finding employment, both within the local economy and further afield; of those students graduating with a bachelor or first professional degree in 2013, 88.81% had found employment within 6 months and 94.51% within 2 years (source: Ministry of Training, Colleges and Universities' 2015 Ontario University Graduate Survey). In another survey, 81% of undergraduates graduating from the DeGroote School of Business found employment with an average starting salary of \$48,798 on graduation, while 81% of co-op graduate students from the DeGroote School of Business secured employment with an average salary of \$68,350 (source: DeGroote survey of 2014 graduating class).

■ McMaster remains a significant source of employment within our community, and in 2016 was named one of Hamilton-Niagara's Top Employers, a designation that recognizes those Hamilton-Niagara employers that offer exceptional places to work. With approximately 15,900 faculty and staff (over 6,000 full-time), McMaster is one of the largest employers in the greater Hamilton area.



▲ Opened in 2015, the David Braley Health Sciences Centre in downtown Hamilton is the home of a unique collaboration between the Department of Family Medicine of McMaster’s Michael G. DeGroot School of Medicine and the City of Hamilton’s Public Health Service.

■ Opened in 2015, the David Braley Health Sciences Centre in downtown Hamilton is the home of a unique collaboration between the Department of Family Medicine of McMaster’s Michael G. DeGroot School of Medicine and the City of Hamilton’s Public Health Service. The building has a large family health clinic providing services for 15,000 city residents, and is also the centre for education and experiential learning for 4,000 students and other health science research offices. The facility has been enhanced by services and conveniences, including a pharmacy and a cafe, and has hosted numerous special community events.

■ More than 4,000 grade school students in Hamilton, Peel, Halton, Waterloo and Six Nations participated in an outreach program delivered by McMaster’s Faculty of Engineering, which taught computer coding skills to students in Grades

1 through 9. The program aims to interest even the youngest students in technology and engage middle school children in thinking about how technology can be used to tackle social challenges.

■ The McMaster Children and Youth University (MCYU) celebrated its fifth year by expanding its on-campus lecture program to nine lectures, covering topics spanning all Faculties, and reaching an attendance of 1,550 youth and their guardians. In addition, the new MCYU in the City program engaged 52 undergraduate and graduate students in developing nine inquiry-based workshops held throughout Hamilton.

■ The MacPherson Institute held its first Summer Institute in 2015, bringing together 90 students, faculty and staff collaborators from McMaster, the University of Gloucestershire, Elon University, Trinity University and the University of Queensland.

Outcomes of the event included a number of collaborative research projects and plans for an international journal focusing on the role of students as partners.

■ The McMaster Discovery Program, which began in 2011, has now graduated approximately 125 students. Many of the participants have begun spinoff projects as a result of the program, including sharing their work with other Hamilton audiences and starting a writing group for women. In the last year, two students have gone on to enrol in McMaster undergraduate programs.

■ A number of programs and courses focused on community engagement have been developed. The Foundations of Community Engagement level II course was piloted during 2015-2016, with an inaugural enrolment of 28 students. The course provides students with the knowledge and skills needed for effective and

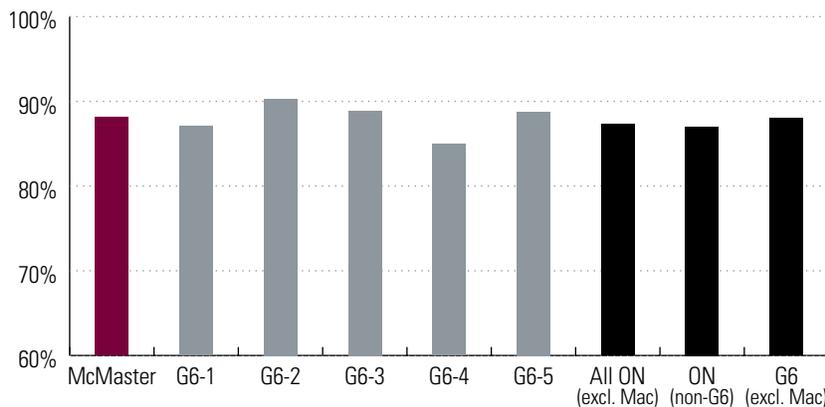
principled community engagement, and attracted students from all six Faculties. An Interdisciplinary Minor in Community Engagement will be offered for the first time in Fall 2016, as well as a Graduate Diploma in Community-Engaged Research and Evaluation offered by the School of Social Work, Faculty of Social Sciences. The diploma

program delivers courses focused on topics of relevance in the social service and community sectors.

■ The McMaster English Language Development (MELD) diploma program run by the Faculty of Humanities was designed to enable international students to improve their English Language skills prior to attending their first

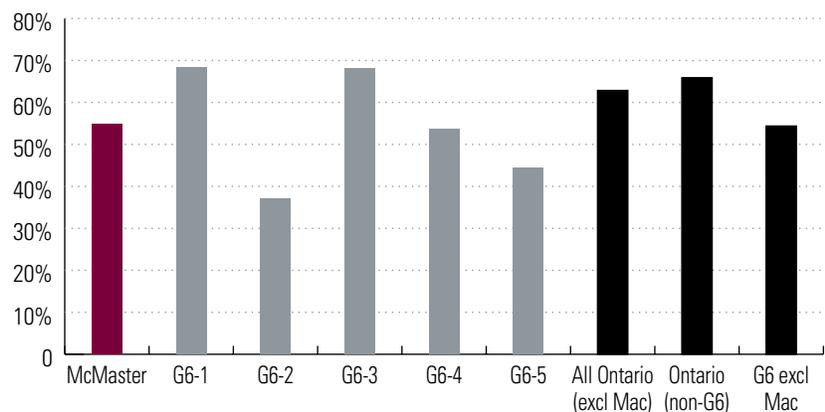
year at university and enhance their academic success. Enrolment in the program has more than doubled from 36 students in 2014-2015 (inaugural year) to 75 students in 2015-2016. Around 95% of the 2015-2016 intake successfully completed the program and will enrol in first year programs at McMaster in September 2016.

Graduate Employment Rate, 6 Months post-graduation – 2015



Note 1: Graduate Employment Rate is the number of graduates of bachelors or first professional degree programs expressed as a percentage of the labour force after graduation.
 Note 2: The table above displays the results of the Ministry of Training, Colleges and Universities' Ontario University Graduate Survey on the employment outcomes of undergraduate students who graduated 2 years before the year displayed.
 Note 3: G6-1 to G6-5 represent McMaster's Ontario peers who are members of the U15 (Canada's 15 research-intensive universities).
 Source: Ontario University Graduate Survey (OUGS) 2015.

Students Receiving OSAP as a Percentage of Total Enrolment 2014-2015



Note 1: Total full-time OSAP awards at institution based on academic year-end data (OSAP academic year starts August 1, with academic year-end data available at end of August in the following year)/Total Fall operating grant eligible headcount enrolment enrolled at institution (based on November 1st reporting).
 Note 2: G6-1 to G6-5 represent McMaster's Ontario peers who are members of the U15 (Canada's 15 research-intensive universities).
 Note 3: OSAP participation rates are arrived at by taking OSAP awards as a percentage of full-time enrolment.
 Note 4: OSAP award recipients are recipients of Canada or Ontario loans or grants through the Ontario Student Assistance Program. This includes recipients of 30% Off Ontario Tuition grants. This is final 2015-2016 year-end data extracted as of September 12, 2016.
 Note 5: Enrolment data used to calculate 2015-2016 OSAP participation rates at universities is based on funding eligible undergraduate and graduate November 1st headcount of students with 60% Load (0.3FTE) or greater.
 Source: Council of Ontario Universities (COU)

McMaster's students have been successful in finding employment, both within the local economy and further afield.

Strategic Goals

3

Goal three: Strengthening the excellence of our research and our graduate education and training, while seeking opportunities to integrate research more purposefully into our academic mission.

McMaster is a globally competitive research-intensive University that excels at interdisciplinary and collaborative research, working with industrial, government and community partners, as well as other academic institutions around the globe. Our research reflects current and emerging social and economic issues of relevance to our local and global communities, and has impact across a wide-range of disciplines and issues. We intend to build on our track record in technology transfer and entrepreneurship to provide opportunities for commercialization to our faculty and students and bridge the gap between research and commercial application. Committed to engaging students at all levels in research activities, we strive to integrate research and teaching across our programming in creative ways. Our graduate training is central to sustaining our research intensity and we are committed to equipping graduate students in all programs with the practical skills and experiential knowledge that will enable them to translate their academic achievements into success after graduation.

Key Initiatives

■ McMaster has been successfully engaged in a number of large-scale initiatives and collaborations to support Advanced Manufacturing. The Government of Ontario is investing \$35M towards a unique Advanced Manufacturing Consortium involving McMaster and two other top research-intensive and industrially collaborative universities. The Consortium is intended to lead Ontario in advanced manufacturing in the broadest sense, including in emerging sectors such as next-generation additive manufacturing, and digital components and devices, and has the potential to make significant impact on a global scale. In addition, in partnership with ArcelorMittal Dofasco, McMaster has established the ArcelorMittal Dofasco Chair in Advanced Manufacturing, which is focused on an interdisciplinary approach to the development of manufacturing policy in Canada.

■ Over the 2015-2016 year, McMaster held a Research

Showcase, involving more than 190 researchers from all Faculties. The Showcase highlighted the University's cutting-edge research and explored the ways in which McMaster research can help cities respond to a range of challenges and support the creation of healthy, smart, creative communities. The series of events focused on themes ranging from the impact of aging on society, healthy neighbourhoods, climate change, and big data and evidence-based decision-making. The events were widely advertised within the community and achieved total attendance of 2800, including 18 events where 17 of McMaster's research labs and facilities were opened to the public.

■ McMaster continues to lead interdisciplinary research collaborations that span institutions, such as the Canadian Longitudinal Study on Aging, and the Allergen and Centre for Probe Development and Commercialization Networks of Centres of Excellence. In addition, two new national patient-oriented

research networks have been established, each supported by a \$12.5M federal grant: the Chronic Pain Network, and the IMAGINE-SPOR Chronic Disease Network on intestinal disease.

■ In partnership with the Fraunhofer Institute for Cell Therapy and Immunology (Fraunhofer IZI), McMaster established the McMaster-Fraunhofer Biomedical Engineering and Advanced Manufacturing Project Centre (BEAM), a joint project centre to develop novel technologies for cell therapy and point-of-care diagnostics. Working with researchers from the Fraunhofer IZI and other private sector partners, McMaster researchers are undertaking a newly developed research program in Advanced Manufacturing of Printable Diagnostic Systems for Bioprocess Control and Personal Medicine, which will train 18 Postdoctoral Fellows, 12 graduate students and provide a research experience for more than 30 undergraduate students over the next five years.



▲ McMaster Innovation Park is an important part of the innovation ecosystem in Hamilton. By supporting startup businesses, research and offering collaborative space for different sectors to co-locate, connect and commercialize, it provides a means to transform ideas from vision to commercial reality.

■ McMaster is a leader in Automotive Manufacturing research and innovation and has successfully engaged graduate and undergraduate students in this work. In the past year alone, research conducted through the Canada Excellence Research Chair in Hybrid Powertrain has trained 45 graduate students, 10 undergraduates and 7 postdoctoral fellows, and has secured funding to further enhance the research infrastructure of the McMaster Automotive Resource Centre.

■ McMaster is focused on developing and expanding its research enterprise and operates a range of world class research laboratories, including the McMaster Nuclear Reactor, one of the world's largest suppliers of the medical radioisotope iodine-125

which is used for the treatment of prostate cancer; the Population Health Research Institute (PHRI), a collaborative initiative with Hamilton Health Sciences, which is Canada's premiere global health research institute and a world leader in large clinical trials and population studies; the Labarge Optimal Aging Initiative, which has supported 19 research projects over the last four years, builds upon McMaster's research strength in optimal aging while also promoting access to reliable information for older adults through the McMaster Optimal Aging Portal; and The Michael G. DeGroote Institute for Infectious Disease Research, which is training the next generation of infectious disease researchers and clinicians.

■ McMaster is focused on supporting the commercialization

of the cutting-edge work undertaken by our researchers. McMaster Innovation Park provides a range of office, lab and specialized facilities to more than 55 companies with over 700 people working onsite. Through its various incubation spaces, support is provided to start-up companies enabling them to successfully bridge the gap from research to commercial application.

■ In 2015-2016, the Faculty of Humanities established the Program on Ethics and Policy for Innovation (PEPI) research centre. Supported by the Bill and Melinda Gates Foundation, this centre focuses on applied ethics research, and prioritizes identifying and addressing ethical challenges, ethics-related risk, and policy gaps that have the potential to undermine the

impact of lifesaving technologies and interventions in global health and development. Students from the graduate program in Philosophy are engaged as research assistants, taking on real-world issues and case studies in applied ethics problems to ensure that they enter the job market with practical experience in the policy-making arena.

■ We continue to focus on increasing graduate enrolment and are introducing new graduate programs to meet Ontario's higher education and training needs. Some examples include:

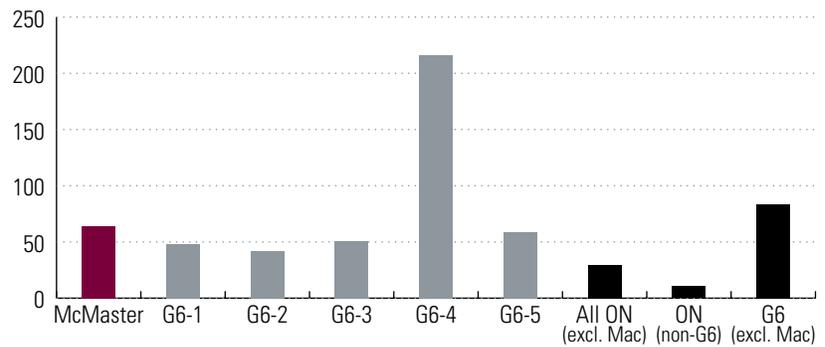
- The PhD program in Health Studies (Fall 2015), which will equip students with theoretical and methodological expertise in integrating knowledge and research from a broad range of social sciences disciplines.

- The Masters of Biomedical Discovery and Commercialization (BDC) program (Fall 2016), which aims to position graduates for advanced training in the biomedical sciences and to become leaders in the health sciences, drug discovery and development sectors.

- The PhD in Labour Studies (beginning in 2017), which will prepare students for the critical appraisal of work, working people and their organizations, and labour market policies, and provide opportunities to learn about advanced research methods.

- The Executive MBA in Digital Transformation, which is an interdisciplinary program designed to expose students to the core topics covered in traditional EMBA programs together with the more technical content associated with master-level courses in fields such as data science and business analytics.

Canada Research Chairs, as of March 2016

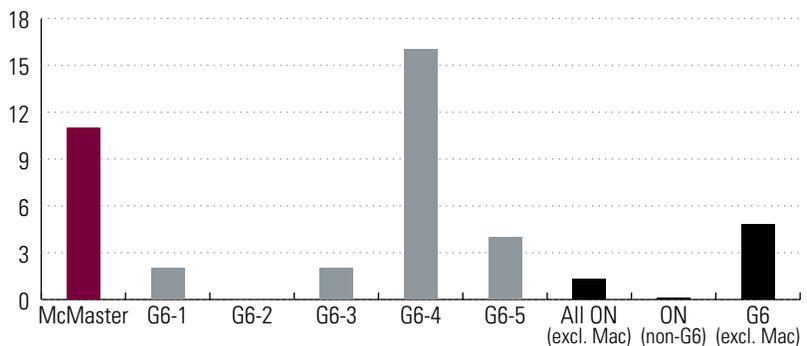


Note 1: As of March, 2016.

Note 2: G6-1 to G6-5 represent McMaster's Ontario peers who are members of the U15 (Canada's 15 research-intensive universities).

Source: Canada Research Chairs, March 2016.

Highly Cited Researchers 2015

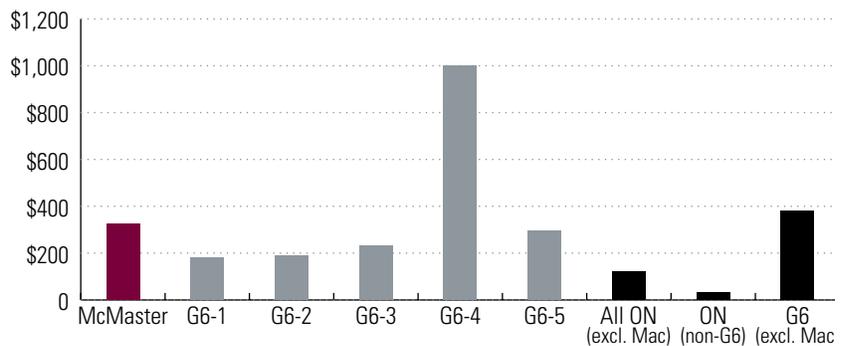


Note 1: Highly Cited Researchers is a list of leading researchers in sciences and social sciences from around the world. The 2015 list focuses on highly cited papers in science and social sciences journals indexed in the Web of Science Core Collection during the 11-year period 2003-2013.

Note 2: G6-1 to G6-5 represent McMaster's Ontario peers who are members of the U15 (Canada's 15 research-intensive universities).

Source: Thomson Reuters Highly Cited Researchers 2015.

Total Sponsored Research Income (\$000) 2014-2015

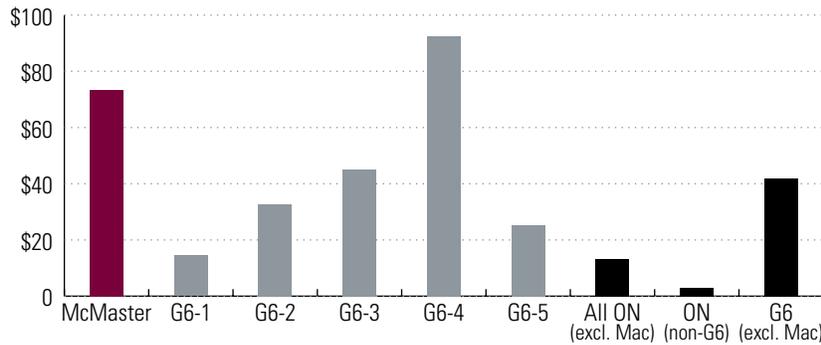


Note 1: 2014-2015 is the latest comparable data available.

Note 2: G6-1 to G6-5 represent McMaster's Ontario peers who are members of the U15 (Canada's 15 research-intensive universities).

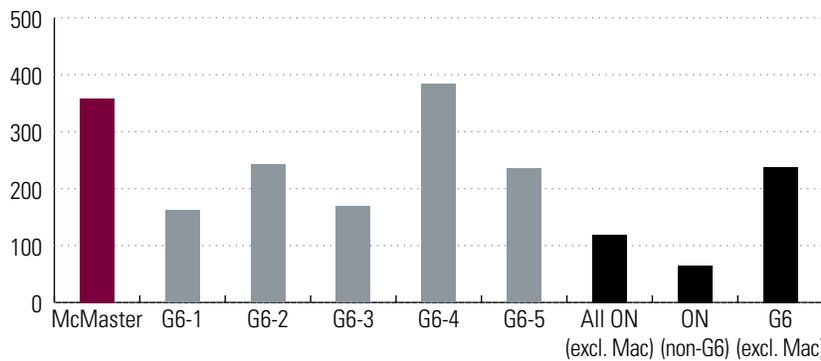
Source: Financial Information of Universities and Colleges (FIUC) 2016.

Research Funding from Industrial Sources (\$000,000) 2014-2015



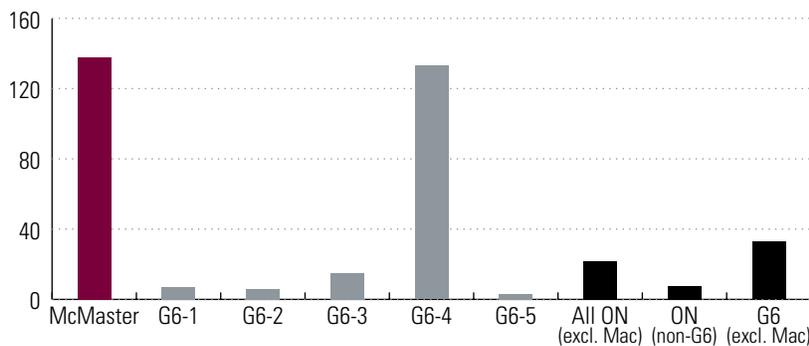
Note 1: 2014-2015 is the latest comparable data available.
 Note 2: Research Funding from Industrial Sources includes sponsored research from business enterprises, as defined by the Canadian Association of University Business Officers (CAUBO).
 Note 3: G6-1 to G6-5 represent McMaster's Ontario peers who are members of the U15 (Canada's 15 research-intensive universities).
 Source: Canadian Association of University Business Officers (CAUBO) 2016.

Research Intensity Ratio (\$000) 2014-2015



Note 1: Data includes only institutions that are part of the top 50 Canadian research universities.
 Note 2: G6-1 to G6-5 represent McMaster's Ontario peers who are members of the U15 (Canada's 15 research-intensive universities).
 Note 3: 2014-2015 is the latest comparable data available.
 Source: Research InfoSource 2015.

New Licenses 2014



Note 1: G6-1 to G6-5 represent McMaster's Ontario peers who are members of the U15 (Canada's 15 research-intensive universities).
 Source: Association of University Technology Managers (AUTM), Canadian Licensing Activity Survey 2015.

Key Outcomes

■ In 2015, McMaster ranked second in the province and third in the country for research intensity, averaging \$339,500 per faculty member – almost double the national average – and eighth overall in total research income, bringing in some \$310.6 million (source: Re\$earch Infosource). We are one of only two Ontario universities consistently ranked among the top 100 universities in the world and one of only four in the country.

■ Our research impact – using the H-index to measure the quantity and quality of McMaster research publications – indicates we are well above the average both in Ontario and among our U15 peers. Over the last five years, from 2011 to 2015, McMaster researchers generated over \$1.6 billion in external research funding, produced over 27,000 academic publications, were cited over 620,000 times, received at least one citation on 77% of articles published, and filed 125 patent applications.

■ McMaster outpaced its peers across the country in two categories related to corporate research income over the last five years, placing first in both total corporate income (\$588.7 million) and total corporate research income as a percentage of total university income (35 per cent) (source: Re\$earch Infosource 2015).

■ McMaster is home to 69 Canada Research Chairs (CRCs), 82 endowed chairs, six endowed professorships, three Canadian Institutes of Health Research Chairs, one Canada Excellence Research Chair (CERC) and six Natural Sciences and Engineering Research Council (NSERC) industrial research chairs. The University also has more than 70 research centres and institutes.

Our research impact – using the H-index to measure the quantity and quality of McMaster research publications – indicates we are well above the average both in Ontario and among our U15 peers.

■ McMaster has the highest average total Tri-Council funding allocation per principal investigator (\$77,834 in 2014-2015, most recent data available) of Ontario's research-intensive universities. From 2013 to 2014 (most recent data), our research intensity grew by 44.8 per cent to approximately \$339,500 per full-time faculty member.

■ From 2014-2016, McMaster research-based start-ups have secured close to \$20M in external venture capital or seed investment. In 2015-2016, \$6.4M in licensing fees and royalties were generated.

■ 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 & Entrepreneurship.

■ The number of graduate student applications from BIU-eligible students more than doubled (from about 2,850 to 5,823) between 2007-2008 and 2015-2016, in part because of our international reputation for excellence.

■ In 2015, seven McMaster students were named Vanier scholars, placing the University third among its research-intensive peers in Ontario.

■ McMaster was awarded two prestigious NSERC CREATE awards for graduate student training programs in resilient infrastructure and electrification of vehicles. These awards will enable more than 50 graduate students to augment their state-of-the-art research training with enhanced professional skills

development and industrial mentorship.

■ Through a range of initiatives the MacPherson Institute has been promoting and supporting the integration of pedagogical research into teaching practices. The MacPherson Institute's newest two-year program, the Leadership in Teaching and Learning Fellowship, appoints faculty champions who are leaders and mentors to their peers. In addition, 194 graduate students and postdoctoral fellows from various disciplines across campus are enrolled in one or more of the five available courses for Teaching & Learning Certificates, and around 400 students attended the Teaching and Learning Forum to gain a deeper understanding of good practices in post-secondary teaching.





Institutional Research and Analysis
ira.mcmaster.ca

