FOCUSED ON A BRIGHTER WORLD

Fact Book: Goals and Priorities 2019 | 2020
McMaster Goals and Priorities

McMaster University was founded in 1887 and is governed by the McMaster University Act, 1976. The University has achieved an international reputation as a centre of excellence for teaching and learning, innovation, and creativity. This year, McMaster was again ranked one of only two universities in Ontario among the world’s top 100 universities, and one of only four in Canada (Times Higher Education). Research Infosource 2019 ranked McMaster as Canada’s most research-intensive university for the third consecutive year, with a total research income of $392M, averaging $439,500 per faculty member – more than double the national average.

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. We are committed to the advancement of human and societal health and well-being, and ultimately to creating a brighter world for all.

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.

A REMARKABLE YEAR
These are extraordinary times and McMaster is extremely fortunate to have innovative and dedicated faculty, staff and students who are rising to meet the enormous challenges posed by COVID-19. Together we are working to support our University community through the pandemic, while also focusing on planning for the future. The past academic year, with the cancellation of in-person classes and events, and the resultant immediate transition to a virtual teaching, learning, research and work environment, presented a series of challenges that have nonetheless provided opportunities for growth and innovation across the institution. While the pandemic continues to significantly impact the ways in which McMaster operates, the focus on achieving an optimal student experience, enhancing community connections, and continued research excellence, remain constant priorities through the significant efforts of the McMaster community.

STRATEGIC PRIORITIES
President David Farrar is currently leading the McMaster community through a visioning and strategic planning exercise intended to reaffirm our shared purpose and aspirations, outline an ambitious vision for the University, and develop a shorter-term strategic plan to guide McMaster over the next several years. Our focus remains to foster the creative and intellectual potential of our students, while at the same time preparing our graduates to build successful careers and meaningful lives. We develop innovative and entrepreneurial graduates, undertake cutting-edge research, and serve our community by leading and partnering on local and global 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.
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 recognized and adopted in jurisdictions around the world. Our goal is to build on the success of our most creative and innovative programs, providing an enriching and transformative learning experience for all students with opportunities for experiential, work-integrated, self-directed, and virtual learning from multidisciplinary perspectives. Alongside this, McMaster integrates our world-class research enterprise into teaching and learning and connects the learning experience to our many local, national, and international communities.

KEY INITIATIVES

Responding to the COVID 19 pandemic:
- In just a few short months, McMaster transitioned to a virtual teaching environment. This swift transition in teaching and learning modalities has presented new opportunities for creative and innovative student experiences, as well as new ways to support students effectively during this time:
  - Since the 2020 Fall term will be held almost entirely online, McMaster’s MacPherson Institute for Leadership, Innovation and Excellence in Teaching is working to ensure that every part of the University is ready to deliver virtual programming of the highest calibre. The Institute offers streamlined support, including training and consultation on pedagogy, course design and education technologies.
  - The McMaster University Library is now participating in the HathiTrust Emergency Temporary Access Service (ETAS) program — an initiative that allows the McMaster community to have digital access to over 830,000 in-copyright print books from the Library’s collection.
  - The new Archway program provides all incoming students with a coach and mentor who will partner with students throughout the year to support their success and ensure that they get the most from their McMaster experience.
- Across the University, students are offered experiential learning experiences, career readiness opportunities and work integrated learning experiences. Recent initiatives include:
  - McMaster’s Career Treks program provides short-term opportunities intended to provide students with real world, hands-on experience. Students are mentored by a local employer as they work on a dedicated project.
  - The Faculty of Science introduced a Journalist in Residence Program to further enhance the media literacy skills of faculty and students and support the effective communication of scientific knowledge and discoveries to the public. New York Times columnist and author Gretchen Reynolds will serve as the first journalist in residence.
  - In Fall 2019, the Faculty of Engineering launched the McMaster Grand Challenges Scholars Program (GCSP) with the United Nations Sustainable Development Goals as the focus of students’ learning. In this program, students develop skills in five key areas, including entrepreneurship and social responsibility, with the goal of preparing them to respond effectively to 21st century challenges. The first class of scholars graduated from the program in Spring 2020.
  - To enhance the recruitment and retention of Ontario high school students, the Faculty of Social Sciences is offering reach-ahead experience programming and advanced credit for students in Business, Environment, Health & Wellness, Non-Profit, and Justice, Community Safety & Emergency Services. Reach-ahead experiences are intended to introduce Ontario high school students to University; those who achieve 80 per cent or higher in one of these programs can receive advanced credit for one three-unit course.
- In May 2019, after detailed community consultation and planning, McMaster launched its Equity, Diversity, and Inclusion (EDI) Strategy and Action Plan. The strategy guides an institution-wide effort to consider the ways that we attract, engage and support our students, faculty and staff. The following new initiatives and projects, focused on enhancing EDI in the student experience, have been launched:
  - McMaster’s Access Strategy is intended to make it easier for academically qualified students from under-represented groups in the Hamilton and surrounding communities to access university education, and includes outreach and admission strategies, as well as transition and retention programs to attract students to McMaster and ensure their success through to graduation.
  - McMaster’s Michael G. DeGroote School of Medicine has enhanced the equity
streams for its admissions process to include applicants from socio-economically vulnerable backgrounds, Black applicants, and Hispanic/Latino applicants, in addition to the current equity stream for Indigenous applicants, and is also developing and expanding mentorship opportunities.

- The Faculty of Social Sciences has developed four new minors in the following areas: Diversity and Equity; Gender, Sexualities, and Families; Immigration, Race Relations, and Indigenous-Settler Relations; and Asian Studies.

- To provide a transformative learning experience, the University supports the following initiatives and projects:
  - McMaster’s Student Experience Fund program has been modified to enable students to apply for and receive funding for a broad range of experiential activities, including independent research or fieldwork, extra-curricular learning opportunities, working with community partners on community-based initiatives, and enhancing student-driven departmental initiatives.
  - In order to support student retention and outreach efforts McMaster’s International Student Services provides academic support to international students and helps students adjust to life in Canada by hosting orientation and social events.

- The Faculty of Engineering is offering a new virtual course for all incoming students. The free, non-credit course is being offered to undergraduate students to support students’ academic and social integration within the Faculty and their transition to a successful first-year experience at McMaster.

- McMaster is one of only two Canadian universities to pilot the McCall MacBain Foundation International Fellowships, and is working with the McCall MacBain Foundation as the program adapts to offer students safe and meaningful experiences during the pandemic. The McCall MacBain Postdoctoral Fellows in Teaching and Leadership Program was also launched by the Faculty of Science, the first program of its kind in Canada for PhD students.

- To meet societal and labour market needs and student demand, McMaster continues to develop new innovative programs, including inter-disciplinary and multi-disciplinary offerings. Recent initiatives include:
  - The Faculty of Health Sciences begins a new Master of Psychotherapy Program in September 2020 in response to updated legislation for the controlled act of psychotherapy. The program will prepare professionals for registration with the College of Registered Psychotherapists of Ontario and an independent career.
  - A new course in the foundations of Rehabilitation Sciences attracted positive feedback from undergraduates. A new certificate in rehabilitation is being developed between the Faculties of Health Sciences and Science.
  - McMaster’s new DeGroote School of Business course, Imagining and Navigating the Future, is an ambitious interdisciplinary course that provides a platform for students to develop the strategic foresight, planning and leadership skills needed to imagine and shape the future. Students will analyze the systems, trends and uncertainties influencing the future of workplaces, healthcare systems, climate change, and financial markets.
  - The Art of Creation Project offers an arts-based approach to improving the overall health of Ontarians. This includes art-infused health promotion programs intended to inspire people and communities to change their health-related behaviours. The Project is a collaboration between the Faculty of Health Sciences’ Department of Biochemistry and Biomedical Sciences, the Art Gallery of Hamilton, City of Hamilton Public Health, and the universities of New Brunswick and Southampton, U.K.

As we respond to the impact of the COVID-19 pandemic and the need to engage in physical distancing, McMaster has planned for a virtual teaching and learning environment for the vast majority of students for the Fall 2020 term.
• The University continues to enhance the physical infrastructure of the campus to support a transformative student experience in anticipation of an eventual return to full campus life:
  - The Peter George Centre for Living and Learning was completed in Fall 2019. It provides much needed academic space, a Student Residence, a Student Wellness Centre, hospitality space, underground parking, and is the new home for the McMaster Childcare Centre.
  - $37.5M in renovations and additions to the Arthur Bourns Building, supported by the federal Strategic Innovation Fund program, added 45,000 square feet of new research and classroom space, enabling a more modern and environmentally sustainable experience.
  - The much needed Student Activity and Fitness Expansion is expected to open in 2021. The build-out and renovation will improve the environmental sustainability of the facility and increase the size of the fitness centre to accommodate McMaster’s growth over the last several years.
  - Renovation has begun on an innovative learning space for health care students and professionals to collaborate and learn in an interdisciplinary setting. Called The Clinic, the space on the first floor of the Health Sciences Library will help build a culture of entrepreneurship and innovation.

• McMaster supports a variety of initiatives intended to equip our students and learners with the leadership skills needed to be engaged and successful global citizens, and to transition successfully from the academy to the workplace. Recent initiatives include:
  - McMaster has begun to enable microcredential innovation for teachers, learners, employers and policymakers. Microcredentials are widely recognized by employers and verify a competency acquired through a single learning experience or collection of learning experiences. They allow learners to upgrade their skills at a flexible pace.
  - Supporting microcredential advancement, McMaster’s Faculty of Engineering is a leading partner in the recently founded Digital Credentials Consortium facilitated by MIT, which includes 12 international partner institutions. The consortium is establishing best practices, designing shared infrastructure, and building prototypes for academic digital credentialling, all based around the World Wide Web Consortium (W3C) Verifiable Credentials Data Model.
  - In Fall 2020, the Faculty of Engineering will launch its redesigned Engineering I curriculum. Students will learn in the context of grand challenges viewing complex problems with a multidisciplinary lens, and design thinking and entrepreneurship will be embedded in all programming. The program will include a full-year, project-based learning course including a series of virtual design projects and labs that will develop both technical and professional skills.
  - The Wilson Leadership Scholar Award, hosted by McMaster University, supports the development of students who demonstrate exceptional leadership potential. The first cohort combining undergraduate and graduate students has completed the program, which includes mentorship, professional development, and community engagement opportunities. In light of the pandemic, the 2020-21 cohort will work with mentors to develop a policy brief on post-pandemic recovery with a continued focus on the key issues facing Canada, and opportunities for career planning and development.
  - McMaster’s global experience programming provides an opportunity for students to enhance their community engagement, leadership, and global impact through work-related, real-life learning. Through our extensive partnerships with employers, students and recent alumni can have an international work experience and gain intercultural competencies that complement their academic studies and support their career goals.
KEY OUTCOMES

- As we respond to the impact of the COVID-19 pandemic and the need to engage in physical distancing, McMaster has planned for a virtual teaching and learning environment for the vast majority of students for the Fall 2020 term. The University is focused on providing a high quality virtual learning experience and has made a number of innovations to support this. A few select examples are as follows:
  - Faculty and staff in the Faculty of Health Sciences education programs have worked quickly to move curriculum and teaching to online modes where possible, and to adapt essential clinical skills, anatomy learning, and clinical placements.
  - The Bachelor of Software Engineering Technology program, offered through the W Booth School of Engineering Practice and Technology, is the first unique online diploma-to-degree program tailor-made for college graduates wishing to continue their education and further their careers. Course enrolment in this program has increased by 26 per cent to more than 430 in the 2019-2020 academic year.
  - The Department of Sociology has developed five new online courses with McMaster’s Centre for Continuing Education. The courses are among 10 online courses being developed as part of a new degree pathway program, scheduled to launch by Winter 2022.
  - Several recent initiatives in health and well-being highlight McMaster’s leadership in developing a distinctive, personalized and sustainable student experience while navigating the virtual environment of the pandemic including:
    - The McMaster Wellness Centre offers initiatives and programs throughout the year as well as regular training from their Mental Health, Nutrition and Fitness, Healthy Campus, and Sexual Health teams. In 2019-20, 160 students were trained in safeTALK suicide prevention.
    - The Student Career Access Program (CAPS) has created new opportunities for equity-seeking students to learn from and network with employers. In addition to a variety of targeted events intended to help them achieve their career goals, CAPS also provides students with the opportunity to work with a career advisor to develop an individualized employment plan.
  - Several recent initiatives in health and well-being highlight McMaster’s leadership in developing a distinctive, personalized and sustainable student experience while navigating the virtual environment of the pandemic including:
    - McMaster continues to create and support programs that emphasize skills training and prepare students for careers in a continuously changing work environment:
      - Offered jointly by the Faculty of Engineering and the DeGroote School of Business, the Minor in Innovation is designed to give students the tools they need to succeed in the fast-paced, innovation-driven marketplace.
  - During 2018-19, McMaster saw an 18 per cent increase in the number of students undertaking a co-op work term, with over 5,100 co-op work terms reported.
  - McMaster’s Midwifery Education Program has become the first program in Canada to receive accreditation from the Canadian Association for Midwifery Education, an assurance of the high quality both of the program and its graduates.
• The MacChangers program is a co-curricular program, jointly run by the Faculty of Engineering and the Office of Community Engagement, that focuses on the UN Sustainable Development Goals to build a more resilient Hamilton community. Interdisciplinary teams of McMaster students commit eight months to developing innovative solutions to local and global societal issues, which this year included: pedestrian safety, the opioid crisis, resilient infrastructure, and social sustainability. A Summer 2020 Change-A-Thon was offered where students shared insights and created innovative solutions to four real-world challenges posed by COVID-19.

• In 2019-2020, McMaster enrolled 2,275 credit transfer students (an increase of 6.3 per cent compared to 2018-19) from Ontario universities and colleges.

• Educators in the Faculty of Health Sciences began incorporating COVID-19 into learning in Spring 2020 courses. The Bachelor of Health Sciences course on Emerging Infectious Diseases included gaining an understanding of COVID-19, from the origins and geographic prevalence, to clinical features of the disease, and management and treatment strategies.

• McMaster continues to support and encourage entrepreneurship by providing seed funding and actively promoting student entrepreneurship on campus and in Hamilton through several initiatives:
  ° Since it opened its doors in 2015, The Forge has incubated more than 143 companies that have gone on to raise more than $31M in funding, created more than 500 jobs, and reached 50 countries. The Forge currently works with 32 start-up clients including McMaster students, alumni, and community members, and engages more than 3,200 students each year in its programming. Over the last year, more than $8.7M has been raised in grants and investments by Forge companies.
  ° A McMaster PhD student of the Department of Biochemistry and Biomedical Sciences, in collaboration with the University of Michigan, has developed a knowledge translation website to provide plain language research information to ataxia patients and their

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**STRATEGIC MANDATE AGREEMENT METRICS**

Under the 2017-18 to 2019-20 Strategic Mandate Agreement (SMA2) with the Ministry, Ontario Universities agreed to report on a common set of system-wide metrics and targets in five priority areas. The SMA2 system level metrics shown below are those related to Goal 1.

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**Undergraduate First Year to Second Year Retention Rates – Fall 2018**

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) 2019.

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**Undergraduate Six Year Graduation Rate – 2018**

Note 1: The university graduation rate is calculated through the selection of all first year, new to the institution, undergraduate students from the Fall enrollment file 6 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: CSRDE (Consortium for Student Retention Data Exchange) 2018.
We are one of only two Ontario universities consistently ranked among the world’s top 100 universities and currently ranked fourth in Canada (Times Higher Education).

- McMaster continues to emphasize career preparedness and McMaster students consistently excel in metrics related to employment after graduation:
  - To support students in finding jobs and connecting them with local employers, the University presents Connect to Careers, Hamilton’s largest job fair, in partnership with Mohawk College, Redeemer University College, and the City of Hamilton. This year the fair brought in over 140 organizations, with 82 per cent hiring for full-time, 40 per cent hiring for summer, 37 per cent hiring for co-op, and 45 per cent hiring for part-time opportunities.
  - McMaster programs provide high-quality preparation for future careers. In the 2018 Ontario University Graduate Survey of McMaster’s 2016 graduates, 90.7 per cent of those in full-time employment indicated that they were in employment that was closely related or somewhat related to the skills they studied at university. The Ontario average is 88 per cent.
  - McMaster produces some of Canada’s most employable graduates, according to Times Higher Education. The University ranked fifth in Canada and 78th worldwide, in the Global University Employability Ranking 2019.

- In the 2017 National Survey of Student Engagement (NSSE), 83 per cent of respondents rated their entire McMaster educational experience as good, or excellent, compared with Ontario’s average of 77 per cent.
Strategic Goals

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 and fostering 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, including this year working to understand the many impacts of the COVID-19 pandemic, and to integrate these priorities fully and meaningfully into the work of the academy. McMaster also supports the broader community through our work to foster a diverse campus community and create enhanced pathways and improved supports for underrepresented groups. Our alumni community of more than 195,000, based in countries around the world, also support us in building connections across the globe.

KEY INITIATIVES

- As part of McMaster’s focus on advancing issues of equity and inclusion, last year the University launched its Equity, Diversity, and Inclusion (EDI) Strategy: Towards Inclusive Excellence. Now one year into the 2019-2022 EDI Action Plan, McMaster continues to prioritize and advance projects and initiatives that support the Strategy:
  - As part of the University’s work on equitable hiring practices and processes, faculty members and staff hiring managers across the campus have been trained as Employment Equity Facilitators. These volunteers will facilitate the advancement of institutional and Faculty/Departmental employment equity priorities and goals, including the development and implementation of employment equity plans.
  - The Faculty of Health Sciences has established a dedicated Equity, Diversity and Inclusion Advisory Committee (EDIAC) focused on strategic recruitment and retention, training and professional development, and considerations to embed Indigenous ways of knowing into curricula offerings.
  - The Indigenous Health Initiative (IHI) of the Faculty of Health Sciences has collaborated with various programs to develop a series of Indigenous Health sessions to address the knowledge gaps of current non-Indigenous faculty and staff, while prioritizing the recruitment of Indigenous faculty members; development of a robust cross-Faculty Indigenous health curriculum; and ongoing education and support of both Indigenous and non-Indigenous faculty.
  - The Office of the AVP and Chief Technology Officer launched “McMaster Women in Tech”, an initiative to highlight our many inspiring Women in Tech change-makers across campus. The goal of this project is to inspire colleagues and students by providing a platform for women with diverse experiences and perspectives to share their stories.
  - McMaster continues to lead and actively engage in a range of initiatives within the City of Hamilton, including:
    - Through the Office of Community Engagement’s (OCE) core programs, students are connected to or offered education and research opportunities in community engagement. In 2019-2020, the OCE supported more than 2,500 students in curricular, co-curricular and extracurricular community-engaged activities.
    - The OCE Research Shop contributed nearly 5,000 student volunteer hours to address community partners’ questions on 13 projects. These ranged from an environmental scan on affordable housing for newcomers to Canada, to evaluations of academic and social programs for middle school students, to a literature review on trauma-informed yoga.
    - The Faculty of Health Sciences has been working with the Research Institute of St. Joseph’s Healthcare Hamilton to establish a hub of the international Pasteur Institute in Hamilton. This initiative was launched by researchers in the Department of Psychiatry and Behavioural Neurosciences and involves the development of collaborative educational and research programming in France and Canada.
    - A tripartite committee on the delivery of care has been successfully established between the Faculty of Health Sciences and its academic hospital partners, Hamilton Health Sciences and St. Joseph’s Healthcare Hamilton. The intention is to establish new models of care to address current gaps in capacity in the city of Hamilton.
    - The Mothers to Babies Study (M2B Study) is a community engagement and intervention development project between the Department of Biochemistry and Biomedical Sciences and the City of Hamilton Public Health intended to support pregnant women in Hamilton by raising awareness of local maternal-child health programs and services among people experiencing vulnerability. It is the result of a collaboration between McMaster and the University of Southampton, UK.
CityLAB, an innovation hub that brings together students, academics and City leaders has engaged 1,888 students, 46 faculty members, and 73 city staff in more than 100 projects over three years, with 39,000 student hours contributed towards CityLAB projects.

Seven Catalyst Grants were offered through the Office of Community Engagement to new community-campus partnerships from Four Faculties/Major Units and provided funding to events or programs that respond to community-driven issues such as Model City Hall.

McMaster is an active participant in HAIL, the Hamilton Anchor Institutions Leadership group, which also includes the City of Hamilton, Hamilton Health Sciences and St. Joseph’s Healthcare, the public and Catholic school boards, Mohawk College, Hamilton Police Services, the Chamber of Commerce, Arcelor-Mittal Dofasco and the Hamilton Roundtable for Poverty Reduction. The goals of the group are to break down barriers and work on developing solutions that address issues and benefit the local community.

In July 2019 McMaster was one of several community partners who supported the 2nd Annual City of Hamilton’s ‘Newcomer Day’ during which current and prospective students and Hamilton community members came together to develop connections and celebrate the diversity of Hamilton.

Earlier in the year the DeGroote School of Business (DSB) partnered with the Hamilton and Burlington Chambers of Commerce to launch a free advisory service for their members and other entrepreneurs in the GTHA. Through DSB’s online “Ask an Expert” portal, small business owners in the community have been able to seek guidance from faculty regarding the current market challenges posed by COVID-19. Faculty volunteers also shared their advice in webinars hosted by both chambers.

In addition to the Access Strategy, McMaster engages in a range of initiatives to build connections with the local community and provide pathways and support to learners who may not otherwise have the opportunity to attend university:

○ The Socrates Project is an initiative intended to stimulate and foster critical discussion across all disciplines, and deepen the connection between the University and the broader community. Since its launch in 2018, the Project has welcomed over 10,000 individuals to more than 60 events and over the last few months has transitioned effectively into the virtual environment.

○ The Faculty of Humanities’ MELD Community Access award program offers 10 full tuition awards to community members, mostly refugees and new immigrants, valued at $300,000.

○ Caregiving Essentials, McMaster Continuing Education’s free online program supporting informal caregivers, has won a 2020 Program Award from the Canadian Association for University Continuing Education. The program has served more than 600 caregivers since its launch in Fall 2018. The development and launch of the program were first funded by the Ontario Ministry of Seniors Affairs, while additional funding from the Regional Geriatrics Programs of Ontario has enabled its continued success.

McMaster strives to support health and foster community and collaboration for our students, faculty and staff.

○ The Faculty of Social Sciences launched a Community Research Platform pilot that includes a new community research partner mapping tool to identify partners across the Faculty and coordinate efforts to engage partners on multiple projects.

○ The McMaster Okanagan Committee recently launched an interactive website (https://okanagan.mcmaster.ca) which contains an inventory of McMaster’s programs, services, research and courses regarding health and well-being initiatives. The website received international attention and is part of McMaster’s commitment to the Okanagan Charter, which the University signed in 2017.
• McMaster seeks to build a strong network of international partnerships, including research collaborations, internships, and exchanges with institutions around the globe, and supports our students and faculty in developing such connections:
  - McMaster University entered its third year as a member of Universitas 21 (U21), a prestigious global network of 26 research-intensive universities from 17 countries focused on collaboration and global knowledge exchange. McMaster participated in developing a new U21 initiative on Truth and Reconciliation which was presented at the 2019 U21 AGM. The initiative aims to develop an inter-disciplinary network of U21 and the Association of Commonwealth Universities to explore truth-telling and reconciliation issues related to Indigenous groups around the world.
  - In September 2019, the MSc Global Health program launched a multilingual, transnational pilot project with Universidad del Rosario, using Microsoft machine learning technology to overcome language and communication barriers. Microsoft Translator’s live transcription and translation tools facilitated cross-institutional group work.
  - McMaster is the host institution for Academics without Borders (AWB), a virtual, volunteer-driven NGO that connects academics in the developed world with colleagues and universities in developing countries. With the ongoing engagement of its faculty and staff with AWB, McMaster seeks to support capacity-building in higher education as a means to foster greater prosperity, equity and well-being for all.
  - McMaster Global is an annual campus-wide showcase of McMaster’s global engagement activities, including International Education Week (IEW) and the annual McMaster Global Engagement Town Hall. For the past two years McMaster Global and IEW has included more than 40 free workshops, seminars, lectures, academic and cultural events for students, faculty, staff and alumni. Programs highlight the breadth of our collective commitment to global engagement, addressing global issues and fostering global citizenship in support of McMaster’s vision and mission.

STRATEGIC MANDATE AGREEMENT METRICS

Under the 2017-18 to 2019-20 Strategic Mandate Agreement (SMA2) with the Ministry, Ontario Universities agreed to report on a common set of system-wide metrics and targets in five priority areas. The SMA2 system level metrics shown below are those related to Goal 2.
In October 2019, McMaster co-hosted the Magna Charta Observatory (MCO) conference with the theme “University Freedoms and Responsibilities: Responding to the Challenges of the Future”. The annual MCO conference, held for the first time in North America, aims to address current challenges in upholding the fundamental values and principles of universities.

### KEY OUTCOMES

- McMaster is finding ways to continue to positively engage the community and continue collaboration amidst the ongoing COVID-19 pandemic:
  - McMaster’s Venture Academy and Children and Youth University (MCYU) are now completely virtual. In Summer 2020, Venture Academy launched its first virtual camp for students in Grades 3-12, offering digital skills building activities, at-home design challenges and guided learning opportunities, including virtual labs for over 1,000 student participants. MCYU, which now engages well over 100 students per year in its experiential program, and offers 200 community events in collaboration with 25 community partners, is adapting its lectures for the online environment and developing virtual challenges and activities that children and youth can do at home.
  - In response to the current COVID-19 pandemic, the National Collaborating Centre for Methods and Tools (NCCMT) based in the McMaster School of Nursing has substantially re-focused its work to support public health and government decision makers across Canada. NCCMT has leveraged strengths and expertise in supporting evidence-informed decision making in public health for two new COVID-19 support services: a searchable database of published and in-progress public health syntheses, and a rapid evidence service to support answers to priority COVID-19 questions.
  - The Knowledge Labs series, held by the DeGroote School of Business (DSB), features DSB experts sharing their insights on business, research, teaching, and community-building – especially in health care management and the management of digital innovation. More recently the series has focused on topics relevant to the changes in business caused by the pandemic. The Knowledge Labs series is available through a variety of channels: web articles, webinars, and YouTube.
  - McMaster’s emphasis on local community is shown in the SMA Community and Local Impact Metric. McMaster students make up 8.76 per cent of the local population between the ages of 15-64 in Hamilton, a significant indicator of the impact McMaster students continue to have on Hamilton, and the surrounding communities.
  - McMaster’s students have been successful in finding employment: of those students graduating with a bachelor or first professional degree in 2016, 89 per cent had found employment within 6 months and 95 per cent within 2 years (source: Ministry of Training, Colleges and Universities’ 2018 Ontario University Graduate Survey).
  - McMaster continues to see growth in employment rates for its students post-graduation: 95.3 per cent of McMaster’s 2016 graduates were employed two years post-graduation per the Ontario University Graduate Survey, which is up from 94.5 per cent the year before.
  - McMaster placed 17th in the world in the Times Higher Education (THE) Impact Ranking for 2020. This international ranking recognizes the impact universities are making in their own countries and on a global scale. The ranking is based on the Sustainable Development Goals (SDGs) adopted by the United Nations, which are designed to address the most serious challenges facing our world. While ranking 17th overall, McMaster also placed 2nd overall in the Decent Work and Economic Growth SDG, and 6th overall in the Good Health and Wellbeing SDG.
  - McMaster enjoys a strong partnership with Six Nations Polytechnic (SNP) and this year renewed the SNP-University Consortium Agreement, involving Brock, Laurier, Waterloo, Guelph and Western universities, as well as McMaster and SNP, for a further five years. The program provides access to university level studies, and is intended to improve education completion and employment opportunities, and support community control of post secondary education, for the Six Nations community. Since its inception more than 250 students have completed the program and successfully completed their undergraduate degrees.
  - In recognition of McMaster’s work and focus on employment equity, the University was named one of Canada’s Best Diversity Employers in 2019. For the fifth year in a row, McMaster was also named one of Hamilton-Niagara’s Top Employers. With approximately 12,000 faculty and staff, McMaster is one of the largest employers in the Greater Hamilton Area.
  - In 2019-20, McMaster welcomed 6,820 full-time first-generation students (representing about 21 per cent of McMaster’s Fall full-time student enrolment), 536 (1.7 per cent) Indigenous learners (First Nations, Métis, and Inuit) and 2,465 (7.6 per cent) students with disabilities. McMaster continually strives to improve access to underrepresented groups through pathway programs and initiatives.
  - During the pandemic, the McMaster Optimal Aging Portal turned its focus to highlighting ways to stay active and engaged while practicing physical distancing. The portal transitioned its weekly articles and blog posts to new posts and evidence summaries giving actionable tips for older adults. The Canadian Minister of Seniors has subsequently expressed interest in highlighting the portal’s content through the Ministry’s network.

Bonny Ibhawoh, Humanities professor appointed by UN to help monitor human rights around the world.
Strategic Goals

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.

Ranked as Canada’s most research-intensive university for three consecutive years, McMaster excels at interdisciplinary and collaborative research, working with industry, government, community partners, as well as other academic institutions around the globe. Our research reflects current and emerging issues of relevance to our local and global communities, and has impact across a wide range of disciplines. We continue 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. 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 is a powerhouse in the area of infectious disease research, health research and advanced manufacturing. From the spread and prevention of COVID-19 to its social and economic impacts, to our ability to assist in novel technological innovations, McMaster’s world-leading experts and institutes are helping to combat COVID-19. Our researchers are at the forefront of global coronavirus research as illustrated in these few select examples:
  - Faculty of Health Sciences (FHS) researchers are involved in an intensive effort to understand the SARS-CoV-2 virus, the cause of the COVID-19 disease. They were part of the team that isolated the first SARS-CoV-2 virus in Ontario and are responsible for sequencing all the viruses in the province to monitor the emergence of new virus strains. They are leading the development of novel therapies for COVID-19 and have attracted more than $30M in funding to fight COVID-19.
  - More than 100 faculty, technical staff and students from the Faculty of Engineering have collaborated with regional manufacturers and government agencies to design, develop and test Personal Protective Equipment (PPE) to support a Canadian supply chain. Research teams in the Faculty are also focused on rapid diagnostic testing, the development of anti-viral surfaces, coatings and therapies, and on employing machine learning and data analytics for the assessment and mitigation of the economic and social impacts of COVID-19 in Ontario and beyond.
  - Researchers in the Michael G. DeGroote Institute of Infectious Disease Research and the McMaster Immunology Research Centre received a combined $1.8M from the federal government for research aiming to contribute to the development of effective vaccines, diagnostics, treatments, and public health responses.
  - The W. Garfield Weston Foundation, through its Weston Family Microbiome Initiative, funded two McMaster projects to boost the work to identify COVID-19 infection rates and understand why some people are more susceptible to the virus.
  - McMaster was the first Canadian university to sign on to COVID-19 Licensing, granting participants time-limited, non-exclusive royalty-free licenses, in exchange for the licensees’ commitment to rapidly make and broadly distribute products and services to prevent, diagnose, treat and contain COVID-19 and protect health care workers during the pandemic.

- The McMaster Health Forum established the COVID-19 Evidence Network to Support Decision-making (COVID-END), as a time-limited international network with more than 45 evidence synthesis and knowledge translation groups worldwide. The group helps decision makers find and use the best evidence and reduce duplication.
- Experts in the Canadian Centre for Electron Microscopy (CCEM) have turned their attention to COVID-19, using their state-of-the-art equipment to help researchers and industry partners better understand the materials composition of new masks and examine special magnetic nanoparticles to scale up sufficient COVID-19 testing. The CCEM received an additional $2M from the Canada Foundation for Innovation.
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• McMaster researchers continue to address the most significant health care issues facing our local, national and global communities:
  ◦ McMaster received a Canadian Institutes of Health Research Team Grant to establish a Pan-Canadian Sepsis Network (Sepsis Canada) to work with a diverse group of researchers, patients and family partners to understand the urgency of reducing the burden of sepsis.
  ◦ A $20M investment from Veteran Affairs Canada allowed for the creation of the Chronic Pain Centre of Excellence for Canadian Veterans at McMaster University. The Centre – a world-leader in veteran-first chronic pain research and care – provides national leadership for research co-designed with veterans and their families, and allows Veterans access to evidence-based, high-quality pain management services closer to home.
  ◦ The David Braley Centre for Antibiotic Discovery has opened this year and is dedicated to tackling the growing global threat of antimicrobial resistance.
  ◦ A multi-million dollar, multi-year partnership with an international biopharmaceutical company focused on rare diseases will allow researchers to expand the reach of the McMaster-created WAPPS-Hemo platform, recognized as best-in-class in providing point-of-care personalized care to over 475 centres and 7,000 patients with this rare condition, globally.
  ◦ The Bill and Melinda Gates Foundation has invested an additional $12M US in the Institute on Ethics and Policy Innovation in the Faculty of Humanities to identify and address ethical challenges, ethics-related risk, and policy gaps that have the potential to undermine the impact of potential life-saving technologies and interventions in global health and development research.
  ◦ With more than $2.2M from Health Canada, McMaster is leading two unique projects: The Community Paramedicine at Clinic (CP@clinic) project designed to expand the paramedic’s role and the delivery of care; and the Detection of Indicators and Vulnerabilities of Emergency Room Trips scale Education, Change, Outcomes (DIVERT ECHO) a pan-Canadian initiative which provides informal caregivers the general skills to provide care at home, and reduce caregiver stress and emergency room visits.
  ◦ The Rapid-Improvement Support and Exchange (RISE) program of the McMaster Health Forum received $4.5M from the Ontario Ministry of Health and Long-Term Care to expedite rapid learning and improvements in Ontario’s health system to improve care experiences and health outcomes at manageable costs and with positive provider experiences.

• In addition to the McMaster Nuclear Reactor, McMaster houses an integrated suite of nuclear-related research facilities that enable discoveries in medicine, clean energy, nuclear safety, materials and environmental science:
  ◦ McMaster is one of only a few global suppliers of I-125, the isotope used to treat prostate and other forms of cancer. The McMaster Nuclear Reactor typically produces and ships enough I-125 to provide material for about 70,000 treatments per year. Twice, for extended periods over the last year, MNR was the world’s only supplier of the life-saving isotope; rising to the challenge and meeting the international demand.
  ◦ In 2020, the Faculty of Health Sciences will install the first Multiplex Ion Beam Imaging (MIBI) system in Canada. This multi-million-dollar instrument will enable researchers to gain unprecedented understanding of disease through high-dimensional analysis of tissues that
will permit precise characterization of the cell types within the tissues while simultaneously providing geographic information that was previously unattainable.

- McMaster is known for its innovation and excellence in advanced materials and manufacturing research:
  - McMaster is a member of NGen, the national manufacturing supercluster, and is one of three universities leading Ontario’s Advanced Manufacturing Consortium (AMC), helping businesses like Honda Canada Manufacturing improve productivity and reduce production costs.
  - Researchers in the Centre for Emerging Device Technologies (CEDT) – whose focus is on photonics and optical materials and devices with diverse applications for lasers, MEMS, detectors, waveguide devices and more – collaborate with industry partners to drive research and innovation in McMaster and Canada’s key strategic sectors.
  - Through the McMaster Manufacturing Research Institute (MMRI), McMaster is the only university partner in the Southern Ontario Network for Advanced Manufacturing Innovation (SONAMI), a FedDev funded network that supports local companies from prototype development to production planning and automation. FedDev increased its investment for McMaster’s activities by $1.3M.
  - The McMaster Automotive Resource Centre (MARC), a global leader on transportation electrification, engages more than 475 graduate students, undergraduates, and postdoctoral fellows and partners with multinational companies and SMEs to advance their R&D capabilities.

- McMaster researchers are recognized for their leadership in working to create equitable and sustainable societies:
  - McMaster is co-leading a multidisciplinary, pan-Canadian project designed to respond to the growing problem of sexually transmitted and blood-borne infections (STBBIs) among Indigenous populations. Awarded $4.8M from the Canadian Institutes of Health Research, the McMaster-based Feast Centre for Indigenous STBBI Research brings together researchers, clinicians, community members, Indigenous elders, people with lived experience of STBBIs, advocacy groups, and non-profit agencies from every province.
  - The Indigenous Children Eye Exams (ICEE) project provides accessible vision screening for Indigenous children living in northern Ontario. The three-year, $1.5M project is funded through the Ministry of Indigenous Affairs’ Jordan’s Principle Program.
  - As part of the Faculty of Health Science’s Indigenous Health Learning Lodge mandate, implementation of strategic Indigenous health research reform related activities will be achieved through collaboration with the McMaster Indigenous Research Institute. Priority activities include: wider inclusion of Indigenous health research perspectives; education and training of the Hamilton Integrated Research Ethics Board (HiREB) ethics team; fostering Indigenous graduate-level students; training non-Indigenous health researchers who aim to engage Indigenous communities; and co-hosting of Indigenous health research symposia with local community partners.
  - With $2.2M from the Canadian Institutes of Health Research, the GENDER-Q project is developing a PRO (Patient-Reported Outcomes) for gender-affirming treatment and its implementation into clinical practice. GENDER-Q – a comprehensive set of independently functioning scales that cover concepts such as appearance, body image, physical, sexual and psychosocial function – will provide meaningful, valid and reliable data on important transgender-specific, patient-centered outcomes.
  - The Canadian Housing Evidence Collaborative (CHEC) – funded with a
$1.1M Social Sciences and Humanities Research Council Partnership Development Grant — is a pan-Canadian knowledge mobilization hub bringing researchers together with policy and decision makers, builders and advocates, in an effort to ensure the evidence-based data is put into practice.

Rehabilitation scientists received funding from the Ontario Neurotrauma Foundation to address the needs of youth with Traumatic Brain Injury (TBI) in the Ontario Youth Criminal Justice System. They will create an implementation process for TBI screening and develop training for youth mental health court workers, probation officers and Crown Attorney office frontline staff.

- McMaster’s expertise in data, smart technologies, communications and AI is helping industries, governments and policy makers make informed and evidenced-based decisions:
  - Experts in the DeGroote School of Business are working with university partners and the Region of Peel to develop models to predict traffic flow and CO2 emissions to help the municipality develop strategies to ease traffic congestion and reduce pollution due to the rise of e-commerce deliveries.
  - The Ministry of Education invested nearly $1.5M for the province-wide implementation of the Offord Centre’s Early Development Instrument tool that collects data from kindergarten classes to measure the ability of children to meet age appropriate development expectations.
  - The McMaster “Monitoring My Mobility” (MacM3) research platform secured over $2.1M in funding to develop a mobility self-monitoring tool using leading-edge sensors and data analytics. The MacM3 team is led by the School of Rehabilitation Science and brings together experts across the Faculties, alongside older adults and caregivers.
  - A $1.65M Natural Sciences and Engineering Research Council CREATE grant was awarded to researchers at McMaster University, University of Manitoba and University of Windsor. A team of Engineering researchers at McMaster is using the grant to focus on developing smart technologies to monitor and analyze human activities to improve mobility in older adults in the community and health care-based settings.
  - McMaster researchers are part of a new initiative — the Optical Satellite Consortium — funded by the National Research Council of Canada (NRC). Bringing together technology innovators and suppliers, product manufacturers and end-users, the R&D will focus on Photonics for Satellite Communications (SATCOM): developing a new generation of space-qualified on-board photonics subsystems and innovative photonics technologies to enable satellite-to-satellite and ground-to-satellite communications.
  - The McMaster Computing Infrastructure Research Centre (CIRC) offers Innovation-as-a-Service (IaaS) — a pioneering model for industry-academy collaborations to support companies developing new products or solving specific problems cost-effectively and within short timeframes. The service is provided by a team of engineering researchers and students, working across a variety of technologies and application areas, with a focus on maximizing the value of data through algorithm development, image recognition, data fusion, natural language processing and artificial intelligence.
  - The McMaster Industry Liaison Office (MILO) bridges the gap from research to commercial application and creates positive economic and social impact in the region. Recent initiatives include:
    - The 2019 Therapeutics Symposium attracted more than 100 industry professionals, researchers and students, and showcased McMaster innovations with high commercialization potential to the investment and pharmaceutical communities.
    - Together with University Technology Services (UTS) and the Faculty of Humanities, MILO developed university-wide governance and guidelines to assist McMaster faculty and staff who create and launch Apps, including those designed to support teaching, education and health care.
  - McMaster Innovation Park (MIP) supports start ups and scale ups with a focus on life sciences and biotechnology; engineering and advanced manufacturing; and information and communication technology. Already home to 70 companies, with more than 800 people working on site, the University is creating new commercialization space at MIP to help researchers bring their ideas to market.

**KEY OUTCOMES**

- Among more than 30 funded research projects on COVID-19, Faculty of Health Sciences researchers are currently leading two national studies, including a study collecting data on aging adults’ experiences during COVID-19, and the only national study with convalescent plasma approved in Canada.
- In 2019, McMaster ranked first in the country for research intensity, averaging $439,500 per faculty member, and totalling $392M in sponsored research income (Re$earch Infosource). We are one of only two Ontario universities consistently ranked among the world’s top 100 universities and currently ranked fourth in Canada (Times Higher Education).
- From 2015 to 2019, McMaster researchers generated over $1.8B in external research funding (Re$earch Infosource).
- The strength of McMaster’s research is seen in the 2019 listing of the world’s most highly-cited researchers from Clarivate Analytics. The listing included 14 McMaster researchers. Based on Clarivate Analytics data, McMaster ranks second within the U15 in Category Normalized Citation Impact (last 10 years – 2010 to 2019).
- Over the last year, MILO recorded 84 invention disclosures, 27 patents issued, $4.68M in licensing revenues, and over 700 research-related agreements.
- McMaster has been allocated 88 Canada Research Chairs (CRCs) and is home to 118 endowed chairs, 13 endowed professorships, one Canadian Institutes of Health Research...
Chair, six Natural Sciences and Engineering Research Council (NSERC) Industrial Research Chairs, and two Ontario Research Chairs.

- In 2018-19, researchers, graduate students, and postdoctoral fellows received $102M from the federal granting councils: $55.5M from CIHR; $36M from NSERC; and $10.4M from the Social Sciences and Humanities Research Council (SSHRC).

- In 2018-2019, several McMaster faculty were recognized for their research excellence: five were appointed to the Order of Canada; three were named to the Royal Society of Canada’s College of New Scholars, Artists and Scientists and one was recognized as a Fellow; one was named the recipient of the Canadian Institutes of Health Research (CIHR) Gold Leaf Prize for Impact; one received an E.W.R Steacie Memorial Fellowship award from NSERC; one was awarded a Killiam Research Fellowship; one was inducted into the Hamilton Gallery of Distinction; and five were named Fellows of the Canadian Academy of Health Sciences.

- Eleven researchers attracted $2.7M from the New Frontiers Research Fund’s Exploration stream, designed to support collaborative high-risk, high-reward interdisciplinary and international research.

- The MIRA | Collaborative for Health & Aging is the newest research centre in the Ontario SPOR SUPPORT Unit (OSSU) network of 15 health research centres across the province that provide scientific knowledge and support high quality patient-partnered research. The centre was formed by the McMaster Institute for Research on Aging (MIRA) and the McMaster School of Nursing’s Aging, Community and Health Research Unit, for research focused on improving health and the health system for older adults.

- In 2019, seven McMaster graduate students were recipients of prestigious scholarships and fellowships — six were named Vanier scholars, placing the University second in Ontario, and one post-doctoral fellow was named a Banting Fellow.

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### STRATEGIC MANDATE AGREEMENT METRICS

Under the 2017-18 to 2019-20 Strategic Mandate Agreement (SMA2) with the Ministry, Ontario Universities agreed to report on a common set of system-wide metrics and targets in five priority areas. The SMA2 system level metrics shown below are those related to Goal 3.

#### Total Tri-Agency Funding ($000,000) 2017-18

![Graph showing total tri-agency funding for 2017-18](image)

**Notes:**
1. 2017-2018 is the last comparable data available at the time of publication.
2. G6-1 to G6-5 represent McMaster’s Ontario peers who are members of the U15 (Canada’s 15 research-intensive universities).

#### Total Number of Papers (InCites) – 2019

![Graph showing total number of papers for 2019](image)

**Notes:**
1. The InCites count of Papers for 2019 is from the number of papers indexed in the Web of Science Core Collection for 2019 as of July 16, 2020.
2. G6-1 to G6-5 represent McMaster’s Ontario peers who are members of the U15 (Canada’s 15 research-intensive universities).

#### Total Number of Citations (InCites) – 2019

![Graph showing total number of citations for 2019](image)

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1. The InCites count of citations for 2019 is from the number of citations for papers indexed in the Web of Science Core Collection for 2019 as of July 16, 2020.
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Exclusions – Funding for research chairs, fellowships, scholarships, awards and prizes.

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**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:** Clarivate InCites 2019.
FACT BOOK: GOALS AND PRIORITIES 2019-2020

Any questions concerning the contents of this book should be directed to:

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*Any revisions to the McMaster University Fact Book: Goals and Priorities will be reflected in its web version. Please check the Institutional Research and Analysis web site for the most up-to-date version.