

= McMaster University =

McMaster University (commonly referred to as McMaster or Mac) is a public research university located in Hamilton, Ontario, Canada. The main campus is located on 121 hectares (300 acres) of land near the residential neighbourhoods of Ainslie Wood and Westdale, adjacent to Hamilton's Royal Botanical Gardens. The university operates six academic faculties: the DeGroote School of Business, Engineering, Health Sciences, Humanities, Social Science, and Science. It is a member of the U15, a group of research-intensive universities in Canada. The university bears the name of Honourable William McMaster, a prominent Canadian Senator and banker who bequeathed C\$ 900,000 to the founding of the university. McMaster University was incorporated under the terms of an act of the Legislative Assembly of Ontario in 1887, merging the Toronto Baptist College with Woodstock College. It opened in Toronto in 1890. Inadequate facilities and the gift of land in Hamilton prompted the institution to relocate in 1930. McMaster was controlled by the Baptist Convention of Ontario and Quebec until it became a privately chartered, publicly funded non-denominational institution in 1957.

The university is co-educational, and has over 25,000 undergraduate and over 4,000 post-graduate students. Alumni and former students of the university can be found all across Canada and in 140 countries around the world. Notable alumni include government officials, academics, business leaders and two Nobel laureates. The university ranked 4th among Canadian universities and 94th in the world according to the 2015-2016 Times Higher Education World University Rankings, 4th among Canadian universities and 96th in the world according to the 2015 Academic Ranking of World Universities, and 6th among Canadian universities and 149th in the world according to the 2014 QS World University Rankings. McMaster University is particularly well known for its medical school, which was recently ranked 25th in the world and 3rd in Canada by the Times Higher Education World University Subject Rankings in 2015. The McMaster athletic teams are known as the Marauders, and are members of the Canadian Interuniversity Sport.

= = History = =

McMaster University resulted from the outgrowth of educational initiatives undertaken by Baptists as early as the 1830s. It was founded in 1881 as Toronto Baptist College. Canadian Senator William McMaster, the first president of the Canadian Bank of Commerce, bequeathed funds to endow a university, which was incorporated through a merger of Toronto Baptist College and Woodstock College, Woodstock, Ontario. In 1887 the Act to unite Toronto Baptist College and Woodstock College was granted royal assent, and McMaster University was officially incorporated. Woodstock College, Woodstock, and Moulton Ladies' College, Toronto, were maintained in close connection.

The new university, housed in McMaster Hall in Toronto, was sponsored by the Baptist Convention of Ontario and Quebec as a sectarian undergraduate institution for its clergy and adherents. The first courses, initially limited to arts and theology leading to a BA degree, were taught in 1890, and the first degrees were conferred in 1894.

As the university grew, McMaster Hall started to become overcrowded. The suggestion to move the university to Hamilton was first brought up by a student and Hamilton native in 1909, although the proposal was not seriously considered by the university until two years later. By the 1920s, after previous proposals between various university staff, the Hamilton Chamber of Commerce launched a campaign to bring McMaster University to Hamilton. As the issue of space at McMaster Hall became more acute, the university administration debated the future of the university. The university nearly became federated with the University of Toronto, as had been the case with Trinity College and Victoria College. Instead, in 1927, the university administration decided to transfer the university to Hamilton. The Baptist Convention of Ontario and Quebec secured \$1.5 million, while the citizens of Hamilton raised an additional \$500,000 to help finance the move. The lands for the university and new buildings were secured through gifts from graduates. Lands were transferred from Royal Botanical Gardens to establish the campus area. The first academic session

on the new Hamilton campus began in 1930 . McMaster 's property in Toronto was sold to the University of Toronto when McMaster moved to Hamilton in 1930 . McMaster Hall is now home to the Royal Conservatory of Music .

Professional programs during the interwar period were limited to just theology and nursing . By the 1940s the McMaster administration was under pressure to modernize and expand the university 's programs . During the Second World War and post -war periods the demand for technological expertise , particularly in the sciences , increased . This problem placed a strain on the finances of what was still a denominational Baptist institution . In particular , the institution could no longer secure sufficient funds from denominational sources alone to sustain science research . Since denominational institutions could not receive public funds , the Baptist Convention of Ontario and Quebec decided to reorganize the university , creating two federated colleges . The arts and divinity programs were reconstituted as University College and science was reorganized under the newly incorporated Hamilton College as a separate division capable of receiving provincial grants . Hamilton College was incorporated in 1948 by letters patent under The Companies Act , although it remained only affiliated with the university . The University traditionally focused on undergraduate studies , and did not offer a PhD program until 1949 .

Through the 1950s increased funding advanced the place of sciences within the institution . In 1950 , the university had completed the construction of three academic buildings for the sciences , all designed by local architect William Russell Souter . Public funding was eventually necessary to ensure the humanities and social sciences were given an equal place . Thus , in 1957 the University reorganized once again under The McMaster University Act , 1957 , dissolving the two colleges . Its property was vested to McMaster and the university became a nondenominational institution eligible for public funding . The historic Baptist connection was continued through McMaster Divinity College , a separately chartered affiliated college of the university . Also in 1957 , PhD programs were consolidated in a new Faculty of Graduate Studies . Construction of the McMaster Nuclear Reactor also began in 1957 , and was the first university -based research reactor in the Commonwealth when it began operating in 1959 .

In 1965 , with the support of the Ontario government , the University established a medical school and teaching hospital , graduating its first class of physicians in 1972 . In 1968 the university was reorganized under an amended act of the McMaster Act into the Divisions of Arts , Science , and Health Sciences , each with its own Vice -President , while the Divinity College continued under its existing arrangement . In 1974 the divisional structure of the university was dissolved and reorganized again under The McMaster University Act , 1976 and the vice -presidents were replaced by a single Vice -President ( Academic ) . The Faculties of Business , Engineering , Health Sciences , Humanities , Science , and Social Sciences were retained , each under the leadership of a dean .

= = Campus = =

McMaster University is situated in the city of Hamilton , Ontario , located in the Golden Horseshoe along the western end of Lake Ontario . The main campus is bordered to the north by Cootes Paradise , an extensive natural marshland , to the east and west by residential neighbourhoods , and to its south by Main Street West , a major transportation artery . Its northern boundaries are a popular destination for walkers who make use of the many trails that connect the campus to Royal Botanical Gardens . While the main campus is 152 @.@ 4 hectares ( 377 acres ) , the majority of the teaching facilities are centered within the core 12 @.@ 1 hectares ( 30 acres ) . In addition to its main campus in Hamilton , McMaster owns several other properties around Hamilton , as well as in Burlington , Kitchener , and St. Catharines , Ontario .

The university owns and manages 62 buildings , both on and off campus . The buildings at McMaster vary in age , with Hamilton Hall opening in 1926 , to the university 's new nuclear research facility , which opened in 2011 . Plans to construct a new academic building in 2013 , known as the Wilson Building for Studies in Humanities and Social Sciences , are underway after securing a substantial donation from the university 's chancellor , Lynton Wilson , as well as

securing funding from the provincial government . McMaster main campus is divided up into three main areas : the Core Campus , North Campus and West Campus . The Core Campus is where the majority of the university 's academic , research and residential buildings are located while the North Campus is made up of the university 's athletic precinct and a small number of surface parking . The West Campus is the least developed area of the main campus , containing only a few buildings , surface parking , and undeveloped land .

= = = Academic facilities = = =

The university 's campus has gone through continuous development since 1928 . The main campus 's six original buildings are of neo @-@ Gothic architecture . They are now flanked by over fifty structures built predominantly during the boom in the 1950s , 1960s and during the 2000s . The largest facility is the McMaster University Medical Centre , a multi @-@ use research hospital that is home to the second @-@ largest neonatal intensive care unit and the third @-@ largest child and youth mental health unit in the country . It is connected to the Life Sciences building and the Michael DeGroote Centre for Learning & Discovery , which houses many well @-@ funded research groups in areas of genetics , infectious diseases , and several specific conditions .

The McMaster Nuclear Reactor ( MNR ) has been the largest university reactor in the Commonwealth since it began operation and is the second largest research reactor in North America . It is a " pool @-@ type " reactor with a core of enriched uranium fuel moderated and cooled by distilled water . While the MNR 's primary purpose is research and the production of medical isotopes , the MNR also serves students in nuclear engineering , medical and health physics , and other applied radiation sciences . The university provides a wide range of irradiation , laboratory , and holding facilities , which include a cyclotron , an accelerator , a small @-@ angle neutron @-@ scattering detector , and wide @-@ angle neutron scattering facilities . The cyclotron is used for the production of fluorine @-@ 18 , and is used for research purposes , particularly the development of novel molecular imaging agents .

= = = Library and museum = = =

The university 's library system is a member of 31 organizations , including the Association of Research Libraries . The university library system averages 2 @. @ 3 million patrons each year . The library 's resource expenditure on October 2013 was approximately \$ 8 million , with 90 percent of the budget allocated to serial subscriptions , and 10 percent on hard copy acquisitions . The library system include four libraries housing 1 @, @ 240 @, @ 643 paper books and 2 @, @ 255 @, @ 053 total resources , including videos , maps , sound recordings , and microfilm . Mills Library houses the humanities and social sciences collections , with a wide range of print and digital resources . Innis Library houses content which supports the academic and research interests of the DeGroote School of Business . Thode Library houses academic material of various disciplines of science and engineering , while the Health Science Library houses books pertaining to medical sciences . The William Ready Division of Archives and Research Collections at McMaster University consist of papers of Canadian publishers ; British personalities and of Canadian literary figures such as Farley Mowat , Pierre Berton , Matt Cohen , Marian Engel . It includes the archives of Bertrand Russell , and of labour unions .

The McMaster Museum of Art 's ( MMA ) principal role is to support the academic mission of McMaster University and to contribute to the discourse on art in Canada . The museum has the highest attendance figures for a university @-@ affiliated museum in Canada , with 31 @, @ 400 visitors in 2012 . Established in 1967 , the museum houses and exhibits the university 's art collection . As of 2010 , that collection of 7 @, @ 230 pieces holds a total value of \$ 98 million . The collection includes works by Gustave Courbet , Claude Monet , Camille Pissarro , Walter Sickert and Vincent van Gogh . The museum also boasts the most comprehensive collection of German expressionist and Weimar period prints in Canada .

== Housing and student facilities ==

Currently McMaster has twelve smoke @-@ free student residences : Bates , Brandon , Edwards , Hedden , Les Prince , Mary E. Keyes , Matthews , McKay , Moulton , Wallingford , Whidden , and Woodstock Hall . McMaster 's student residences can accommodate 3 @,@ 685 students in total . The latest residence to be built was Les Prince Hall , a large co @-@ ed building , completed in 2006 . It was named for a long @-@ time hall master in the residence system who lived with his family on campus until after his retirement in 1980 . In September 2010 , 49 percent of first @-@ year students lived on campus , with 17 @.@ 1 percent of the overall undergraduate population living on campus . Residences provide traditional room and board style , furnished apartment style , and suite @-@ style accommodation . Brandon Hall houses the university 's substance @-@ free lifestyle living spaces . The residence system is supervised by Residence Life staff , who provide guidance and help the transition to university life for many first @-@ year students . Residence students are represented by the Inter @-@ Residence Council ( IRC ) , which aims to build a sense of community among the residents through programming . Additionally , the IRC seeks to advocate for all residence students on issues they may face , such as facilities , dining , environment , and more , and provide opportunities for residence students to gain valuable leadership opportunities . They are an integral part of the McMaster residence community .

The McMaster University Student Centre ( MUSC ) is the centre of student life and programming . It contains a café , study space , common areas , and a number of administrative departments , including the CIBC Conference Hall . The MUSC contains the offices of a number of student organizations , including the McMaster Students Union and The Silhouette weekly newspaper as well as other services such as the Campus Health Centre and the campus dentist . The university has over twenty dining outlets located throughout the campus , including two major residence dining facilities . The university has a number of vegetarian establishments , such as a completely vegetarian cafe known as Bridges Café and a farmers market stand . The university was voted as the country 's most vegan @-@ friendly university through People for the Ethical Treatment of Animals ( PETA ) for a number of years . Several other dining outlets at McMaster have garnered a number of awards throughout the years for food services .

== Off @-@ campus facilities ==

As of 2010 McMaster University 's DeGroote School of Business operates a 1 @.@ 82 @-@ hectare ( 4 @.@ 5 @-@ acre ) site in the neighbouring city of Burlington . Consideration for the new building began in 2004 , when McMaster University had announced its initial intent to construct a new arts- and technology @-@ intensive campus in partnership with the city of Burlington . In 2009 , the City of Burlington , Halton Region , and McMaster University signed an official agreement laying out the timelines and next steps for the university 's expansion into Burlington . Construction began on 17 June 2009 , and the official opening was on 7 October 2010 . The four @-@ story , 90 @,@ 000 @-@ square @-@ foot ( 8 @,@ 400 m<sup>2</sup> ) building is called the Ron Joyce Centre . The Ron Joyce Centre is home to DeGroote 's MBA program and its business management program ( both degree and non @-@ degree programs ) .

McMaster has a number of administrative offices at its Downtown Centre , located in Hamilton in the former Wentworth County Courthouse . The centre is also home to the McMaster Centre for Continuing Education , which offers a variety of certificate and diploma programs as well as personal and professional development programs . McMaster had also announced that construction of the McMaster Downtown Health Campus in downtown Hamilton had begun in December 2012 . The Health Campus is expected to provide teaching spaces , exam rooms and clinical spaces for local residents .

The Michael G. DeGroote School of Medicine is located on the main campus as well as in two regional camps at St. Catharines and Kitchener . The Waterloo Regional Campus is located in downtown Kitchener , sharing facilities with the Health Sciences Campus of the University of Waterloo . The campus in St. Catharines is located at Brock University 's Niagara Health and

Bioscience Research Complex . Approximately 30 medical students in each year of the program attend each campus . Those who apply to McMaster 's School of Medicine are asked to rank their site choice ( Hamilton , Niagara Region , Waterloo Region ) from first to third , or no preference . Offers of admission to the medical school are made from a rank list irrespective of geographical preference . Subsequent to an applicant 's acceptance , registrants to the class are placed based on their preference and geographical background . The offers given out by McMaster are bound to the assigned site .

McMaster purchased a large industrial park three kilometres east of its main Hamilton campus in 2005 with the intention of creating an array of research facilities for the development of advanced manufacturing and materials , biotechnology , automotive , and nanotechnology . In July 2005 the federal government announced that it would be relocating CANMET , a federal government materials research laboratory , from its Ottawa centre to Hamilton . This decision helped spearhead the development of the McMaster Innovation Park . The United Nations University @-@ International Network on Water , Environment and Health ( UNU @-@ INWEH ) is currently headquartered within the park . UNU @-@ INWEH is the only United Nations agency headquartered in Ontario and the only North American host site for a United Nations University , after moving to McMaster Innovation Park on 23 April 2008 .

= = = Sustainability = = =

The Office of Sustainability , created as the All @-@ modes Commuting & Transportation Office in 2002 , is charged with promoting sustainable operations and growth at the university . The Office of Sustainability , headed by the Manager of University Sustainability , works with various members of the university population , external community groups , and the government . Along with the other members of the Council of Ontario Universities , McMaster signed a pledge in 2009 known as Ontario Universities Committed to a Greener World , with the objective of transforming its campus into a model of environmental responsibility . On 21 October 2010 , the university signed two accords addressing the issue of climate change : the Talloires Declaration and the University and College Presidents ? Climate Change Statement of Action for Canada .

The university campus received a B grade from the Sustainable Endowments Institute on its College Sustainability Report Card for 2011 .

= = Administration = =

The governance of the university is conducted through the Board of Governors and the Senate , both of which were established in the Act to unite Toronto Baptist College and Woodstock College in 1887 . The Board is responsible for the university 's conduct , management , and control of the university and of its property , revenues , business , and affairs . Ex officio governors of the Board include the university 's chancellor , president , and the chairman of the board @-@ senate committee on long @-@ range planning . The Board also consists of 34 other governors , either appointed or elected by the various members of the university 's community , including elected representatives from the student body . While The McMaster University Act , 1976 outlines that the board be only composed of 37 members , the Board also includes 12 honorary members , bringing the total number of governors to 51 .

The Senate is responsible for the university 's academics , including standards for admission into the university and qualifications for degrees , diplomas , and certificates . The Senate consists of 15 ex officio positions granted to the chancellor , the president , the vice @-@ presidents of the university , the senior dean of each faculty , the dean of graduate studies , the dean of adult education , the principal of McMaster Divinity College , and the Chairman of the Undergraduate Council . The Senate also consists of 51 other members , appointed or elected by the various communities of the university including elected representatives of the student body . Meetings of the Board of Governors and the Senate are open to the public .

The president acts as the chief executive officer of the university under the authority of the Board

and the Senate , and supervises and directs the academic and administrative work of the university and of its teaching and non @-@ teaching staff . Patrick Deane is the seventh president of the university , serving the post since 1 July 2010 . The office was created in 1949 , with George Gilmour serving as the university 's first president . The office of the vice @-@ chancellor , created at the same time as the office of president , has always been held by the incumbent president of the university .

Programs , departments , and schools at McMaster are divided among six faculties . By enrolment , the two largest faculties is the Faculty of Sciences , with 6 @,@ 656 full @-@ time and part @-@ time undergraduate and graduate students , followed by the Faculty of Health Sciences , with 5 @,@ 409 full @-@ time and part @-@ time undergraduates and graduate students . The School of Graduate Studies serves as the central administrative unit of graduate education at the university . The School of Graduate Studies is not considered its own faculty . The Arts and Science program is taught jointly by the other faculties at McMaster . Created in 1981 , the program aims to provide a broad @-@ based , liberal education , providing substantial work in both the arts and sciences .

= = = Finances = = =

The total net assets owned by the university as of 30 April 2015 stands at \$ 892 @.@ 7 million . The university had completed the 2014 ? 2015 year with revenues of \$ 990 @.@ 8 million , expenses of \$ 912 @.@ 2 million and an excess of revenues over expenses of \$ 78 @.@ 6 million . McMaster 's revenue comes from endowment income , gifts , fees , and annual grants from the City of Hamilton , the Hamilton @-@ Wentworth Region , the Province of Ontario , and the Government of Canada . The largest source of revenue is operating grants provided by the government , valued at nearly C \$ 265 @.@ 2 million . As of 30 April 2014 , McMaster 's financial endowment was valued at C \$ 655 @.@ 5 million . The financing of McMaster 's scholarships and bursaries takes up 40 per cent of the endowments received . Financial Services comprises the following areas : Student Accounts & Cashiers , Financial Accounting and Reporting , and Budgeting Services .

The university has been registered as an educational charitable organization in Canada since 1 January 1967 . As of 2011 , the university is registered primarily as a post @-@ secondary institution , with 70 percent of the charity dedicated to the management and maintenance of the university . The remaining 30 percent has been dedicated under research .

= = Academics = =

McMaster is a publicly funded research university , and a member of the Association of Universities and Colleges of Canada . McMaster functions on a semester system , operating year @-@ round on academic semesters , fall / winter and spring / summer . In the 2014 @-@ 2015 academic year , the university had an enrollment of 30 @,@ 117 , students : 24 @,@ 569 undergraduate students , 4 @,@ 348 graduate students .

Students may apply for financial aid such as the Ontario Student Assistance Program and Canada Student Loans and Grants through the federal and provincial governments . The financial aid provided may come in the form of loans , grants , bursaries , scholarships , fellowships , debt reduction , interest relief , and work programs . In 2012 @-@ 2013 , McMaster students received \$ 86 @.@ 1 million in Canada @-@ Ontario Integrated Student Loans and \$ 14 @.@ 9 million in grants , approximately \$ 101 @.@ 1 million in total .

= = McMaster Model = = =

The McMaster Model is the university 's policy for a student @-@ centred , problem @-@ based , interdisciplinary approach to learning , a policy which has been adopted by several other universities around the world . During the 1960s the McMaster University Medical School pioneered problem @-@ based learning ( PBL ) tutorials that have since been adopted by other programs and faculties within the university . PBL is now used in medicine , occupational therapy , physical therapy ,

nursing , midwifery , and other allied fields . Most medical schools in Canada and more than 80 percent of medical schools in the United States employ PBL in their curriculum , and many international universities do the same .

In 1991 , McMaster 's School of Medicine adopted progress testing , developing the personal progress index ( PPI ) , a system based on progress testing invented concurrently by the University of Missouri @-@ Kansas City 's medical school and the Maastricht University . The PPI is used as an objective method for assessing acquisition and retention of knowledge for students in the medical program . The PPI is administered at regular intervals to all students in the program , regardless of their level of training , and plots students ' scores as they move through the program . Students typically score 20 percent on their first examination , and increase by five to seven percent with each successive examination . Students can monitor the changes in their scores and receive formative feedback based on a standardized score relative to the class mean . Due to the overwhelming success and research supporting the use of the PPI as an evaluation tool , it is now used in Canada , US , Europe , and Australia .

= = = Reputation = = =

McMaster University has consistently been ranked one of Canada 's top universities . In the 2013 Academic Ranking of World Universities ( ARWU ) rankings , the university ranked 92nd in the world and fourth @-@ highest in Canada . The 2013 @-@ 2014 Times Higher Education World University Rankings placed McMaster 92nd in the world , and fourth in Canada . The 2014 QS World University Rankings ranked the university 113th in the world and sixth in Canada . In U.S. News & World Report 2014 global university rankings , the university placed 141st , and sixth in Canada . Newsweek had also ranked McMaster as the 15th top university outside of the United States , and the fourth best university in Canada . In terms of national rankings , Maclean 's ranked McMaster 5th in their 2015 overall reputation university rankings . McMaster was ranked in spite of having opted out ? along with several other universities in Canada ? of participating in Maclean 's graduate survey since 2006 .

McMaster 's Michael G. DeGroote School of Medicine has also gained notability . In the 2014 ? 2015 Times Higher Education rankings of clinical , pre @-@ clinical , and health universities , McMaster 's medical school ranked 25th in the world and third in Canada . The 2015 QS World University Rankings had ranked the medical program at McMaster 33rd in the world , and fourth in Canada . In the ARWU 2014 rankings for the field of clinical medicine and pharmacy , the university had placed 45th in the world and third in Canada . In U.S. News & World Report 2014 rankings for clinical medicine , the university placed 45th in the world , and fourth in Canada . According to a 2013 Maclean 's survey with first @-@ year medical students who obtained a Canadian undergraduate degree , 10 @-@ 5 percent of these students attended McMaster for their undergraduate education , the most out of any undergraduate institution in the country .

McMaster was also ranked in a number of ARWU rankings based on academic fields . The university was ranked 41st in the ARWU 2013 in the field of social sciences , the second @-@ highest in the country . In the U.S. News & World Report 2014 rankings for social sciences and public health , the university placed 67th in the world , and fourth in Canada . In the same 2013 ARWU rankings , the university had ranked 101 ? 150th in the field of natural science and mathematics . In an employability survey published by the New York Times in October 2011 , when CEOs and chairmans were asked to select the top universities which they recruited from , McMaster placed 61st in the world , and fourth in Canada . Another global employability survey by Times Higher Education was conducted in 2015 . In the 2015 Times Global Employability University Ranking , McMaster was placed 86th in the world , and fifth in Canada .

= = = Research = = =

In Research Infosource 's Decade in Review , McMaster was designated as the top Canadian performer in university research income growth from 1999 to 2009 in the medical doctoral category

and as the second @-@ top performer in research intensity growth for the same period . With a total sponsored research income of \$ 325 @.@ 156 million , McMaster has the sixth largest sponsored research income in the country . With an average research income of C \$ 239 @.@ 4 per full @-@ time faculty member , McMaster is also the second most research intensive full @-@ service university in the country . In 2004 McMaster earned the designation of research university of the year based on its ability to attract and capitalize on its research income . Its research activities exceed those of universities twice its size . The federal government is the largest source of funding , providing 54 percent of McMaster 's research budget , primarily through grants . Corporations contribute around 13 percent of the overall research budget .

In terms of research performance , High Impact Universities 2010 ranked McMaster 62nd out of 500 universities , and fourth in Canada . The university was ranked 25th out of 500 universities ? second in the country ? for research performance in the fields of medicine , dentistry , pharmacology , and health sciences . The university was ranked 83rd out of 500 universities , ranking third nationally , for research performance in the fields of engineering , computing , and technology . In the fields of arts , humanities , business , and social sciences , the university 's research performance was ranked 60th out of 500 universities , the third highest nationally . In 2012 , the Higher Education Strategy Associates , another organization which also ranks universities on the basis of their research strength , ranked McMaster tenth nationally in the field of science and engineering and seventh nationally in the field of social sciences and humanities . The Higher Education Evaluation and Accreditation Council of Taiwan ( HEEACT ) , an organization which also evaluates universities based on their scientific paper 's performances , ranked McMaster 54th in the world and fourth nationally for in social sciences in its 2011 rankings . HEEACT placed McMaster 95th in the world and fifth nationally for its overall research performance .

McMaster has received accolades for its research strengths , particularly in the field of health sciences . For five years in a row , McMaster has ranked second in for biomedical and health care research revenues by the Association of Faculties of Medicine of Canada . In 2008 ? 2009 , Faculty investigators were overseeing \$ 133 million a year in research , much of that research conducted by scientists and physicians who teach in the medical school . For its 2011 rankings , HEEACT ranked McMaster 35th in the world and third on a national scale for scientific papers in clinical medicine . The Faculty of Health Sciences operates several research institutes , including the Farncombe Family Digestive Health Research Institute , the DeGrootte Institute for Infectious Disease Research , and the Stem Cell and Cancer Research Institute . A McMaster research group led by David Sackett and later Gordon Guyatt had been largely credited for largely establishing the methodologies used in evidence @-@ based medicine . Guyatt had also been credited for coining the term evidence @-@ based medicine in 1990 . In November 2010 , researchers at the Stem Cell and Cancer Research Institute turned clumps of human skin into blood cells , which may help alleviate the shortage of blood donors . A portion of Albert Einstein 's brain is preserved and held for medical research at the McMaster brain bank . Researchers there have identified differences in his brain that may relate to his genius for spatial and mathematical thinking .

The Brockhouse Institute for Material Research ( BIMR ) is located at McMaster . Created in 1960 by Howard Petch , the institute was named after McMaster alumnus Bertram Brockhouse . The BIMR is an interdisciplinary research organization with the mandate to develop , support , and co @-@ ordinate all materials research related activities at McMaster . Its membership of 123 faculty members is drawn from 13 departments in the Faculties of Science , Engineering , and Health Sciences , as well as several Canadian and international universities . Facilities of the BIMR include the Canadian Centre for Electron Microscopy , Centre for Crystal Growth , McMaster Analytical Xray Facility , Electronic and Magnetic Characterization Facility , and the Photonics Research Laboratories . The Canadian Centre for Electron Microscopy is home to the world 's most advanced microscope . The Titan 80 ? 300 cubed microscope has a magnification of 14 million and is used for material , medical , and nanotechnology research .

The university also operates the McMaster Nuclear Reactor , which has been used for nuclear science and engineering research since 1959 . The strength of nuclear science at McMaster was augmented in 1968 under the presidency of Dr. H.G. Thode by the construction of a 10MV Model



FN Tandem particle accelerator . The 3MV Model KN single @-@ ended accelerator was added the same year . The academic direction of the laboratory fell to the Physics Department in the early days , as it was primarily a nuclear structure laboratory . During the next 28 years , the nuclear research effort was extensive , with hundreds of graduate students trained and many publications generated . The reactor at McMaster produces 25 percent of the world 's supply of iodine @-@ 125 , an isotope used in nuclear medicine to treat prostate cancer . The production of molybdenum @-@ 99 at the National Research Universal Reactor ( NRU ) has also been occasionally moved to the university 's reactor , during the 1970 and 2009 shutdown of the NRU . McMaster University 's SLOWPOKE @-@ 2 non @-@ power reactor operating licence is valid until June 30 , 2014 . The SLOWPOKE reactor is used for research and education , commercial applications such as neutron radiography , and medical radioisotope production ; Iodine @-@ 125 is used in cancer therapy .

= = = Admissions = = =

The requirements for admission differ between students from Ontario , other provinces in Canada , and international students due to the lack of uniformity in marking schemes . The acceptance rate at McMaster for full @-@ time , first @-@ year applications in fall 2013 was 58 @. @ 7 percent . In September 2012 , the secondary school average for full @-@ time first @-@ year students at McMaster University was 86 @. @ 9 percent . Students entering McMaster 's more selective undergraduate programs , including the Bachelor of Health Sciences program and the Arts and Science program , had a secondary school average of 95 @. @ 8 percent . The Bachelor of Health Sciences program at McMaster was also ranked the most competitive undergraduate program in Canada with a 4 @. @ 5 % acceptance rate by Yahoo ! Finance in 2016 . McMaster received 27 @, @ 102 applicants in the 2012 academic year . McMaster 's medical school is the most competitive medical program in Canada by application numbers , with more than 5 @, @ 200 applicants competing for 204 positions , an acceptance rate of 3 @. @ 9 % .

The Michael DeGroote School of Medicine has notably developed admission tests that has since become adopted by other schools. is In 2001 , they developed the multiple @-@ mini interview in an effort to address long @-@ standing concerns over standard panel interviews ; viewed as poor reflectors for medical school performance . This format uses short , independent assessments in a timed circuit to obtain aggregate scores in interpersonal skills , professionalism , ethical / moral judgment , and critical thinking to assess candidates . The multiple @-@ mini interview has consistently shown to have a higher predictive validity for future performance than traditional interviews . The multiple @-@ mini interview process has since been adopted by the majority of Canadian medical schools , as well as a number of medical schools in the United States . In 2010 , the medical school developed the Computer @-@ based Assessment for Sampling Personal Characteristics , in order to better assess the personal characteristics of the applicant . A number of other medical schools have since adopted the CASPer test , including New York Medical College , Robert Wood Johnson Medical School , and the University of Ottawa Faculty of Medicine .

= = Student life = =

In the 2012 @-@ 2013 academic year , the university had an enrollment of 29 @, @ 411 students : 25 @, @ 174 undergraduate students , 4 @, @ 237 graduate students . The student body is largely made up of Ontario residents , making up 89 @. @ 3 percent of the student population . International and out @-@ of @-@ province students represented , respectively , 7 @. @ 5 percent , and 3 @. @ 2 percent . Students come from all 10 Canadian provinces , two Canadian territories and 87 countries . Full @-@ time students make up about 87 percent of the student body . Among full @-@ time students , the university has a first @-@ time student retention rate of 88 @. @ 7 percent .

= = = Student groups = = =

The main student unions on administrative and policy issues are the McMaster Students Union for

full @-@ time undergraduates , the McMaster Association of Part @-@ Time Students for part @-@ time undergraduates , and the McMaster Graduate Students Association for postgraduates . In addition , each faculty has its own student representative body . Students within the residence are represented by the Inter @-@ Residence Council . There are more than 200 student organizations and clubs , covering a wide range of interests such as academics , culture , religion , social issues , and recreation . Many of them are centred on the McMaster student activity centre , the McMaster University Student Centre . The Silhouette , the student @-@ run newspaper , is the oldest student service at McMaster University , in publication since 1929 . Since 1968 , the McMaster Engineering Society has published The Plumline , the main satire magazine of McMaster University . The campus radio station CFMU @-@ FM ( 93 @. @ 3 FM ) is Canada ? s second @-@ oldest campus radio station , and has been broadcasting since 1978 . MacInsiders , a popular online student @-@ run forum and information network , has been operating since 2007 and has over 18 @, @ 000 registered members . The McMaster Marching Band , created in September 2009 , is a brass , reed and percussion marching band composed of 45 graduate and undergraduate students as well as members of the surrounding community who wish to participate .

The university hosts a number of honour societies , including the McMaster Honour Society and a chapter of the Golden Key International Honour Society . The university is home to two semi @-@ professional acting companies , McMaster Musical Theatre and the McMaster Thespian Company . The McMaster Engineering Musical is an annual musical production that is written , directed , and cast by engineers . The production often features unique interpretations of popular songs or musicals . The university and the student unions do not recognize any fraternity or sororities ; existing chapters operate as non @-@ accredited off @-@ campus organizations . Five fraternities currently operate an active chapter at the university ; Pi Kappa Alpha , Omega Psi Phi , Lambda Phi Epsilon , Alpha Epsilon Pi and Phi Delta Theta and six Sororities including Tau Sigma Phi , Alpha Pi Phi , Epsilon Sigma Alpha , Delta Pi , Nu Omega Zeta , and Delta Psi Delta .

= = = Athletics = = =

Athletics at McMaster is managed by the university 's student affairs , under their athletics and recreation department . The university 's varsity teams compete in the Ontario University Athletics conference of the Canadian Interuniversity Sport . The university 's team sports programs include baseball , basketball , football , lacrosse , rugby , soccer , swimming , volleyball , and water polo . The first major sport game played at McMaster was in 1889 , when a group of alumni from Toronto Baptist College and Woodstock College played an exhibition game against one another , sparking an early intercity rivalry between McMaster students . In 1897 the university placed all physical activity and sports under the jurisdiction of a central executive committee . The varsity teams have been known as the McMaster Marauders since 1948 , through a contest run by the student newspaper , The Silhouette , to name the university 's men 's basketball team .

The Marauders have won 11 national championships and 139 provincial champions since 1961 . The men 's water polo team has won the Ontario University Athletics championship 25 times , making it the Marauders ' most successful team at the provincial level . The men 's wrestling team has been the Marauders ' most successful team at the national level , winning the Canadian Interuniversity Sport championship four times . McMaster University has graduated 34 Olympic athletes , eight Olympic coaches , two Olympic administrators and two Olympic officials . As is mandatory for all members of Canadian Interuniversity Sport , McMaster University does not provide full @-@ ride athletic scholarships .

The university 's sports facilities are located in the northeast corner of the main campus . The university has a number of sports facilities , including the David Braley Athletic Centre and the Ron Joyce Stadium . Ron Joyce Stadium includes a full @-@ sized Canadian football field and FIFA @-@ sized soccer pitch . The stadium features permanent seating for 6 @, @ 000 and temporary seating for an additional 6 @, @ 000 on the other side of the field when needed . Ron Joyce Stadium is not only used by the university 's football and soccer varsity teams it is also used as the training camp for the Hamilton Tiger @-@ Cats of the Canadian Football League and as the home stadium

for the Hamilton Nationals of Major League Lacrosse .

Intramural sport leagues and tournaments have a high level of participation at McMaster . Opportunities are offered at multiple skill levels and across a variety of sports to service a range of interest and ability . Sports offered include traditional sports like volleyball , basketball , soccer and cricket , as well as less traditional events like dodgeball , inner tube water polo , and extreme potato sack racing .

= = Insignias and other representations = =

McMaster uses a number of symbols to represent the institution , with the university 's Office of Public Relations managing the university 's visual identity . The university 's present visual identity , and logo was approved by the University Senate in 1997 . Other symbols utilized by the university includes a flag , unveiled on the 29 September 2015 , as well as a ceremonial mace . The university mace was bequeathed in 1950 from the graduating class of 1900 . Used in ceremonies such as convocation , the mace symbolizes the authority of the University Senate to confer degrees . The university also uses several tag lines as a part of its overall branding effort . As of 2007 , the branding tag line used by the university is " Learning Without Borders , " although the previous tag line , " Inspire , Innovation , and Discovery , " is still used to a limited extent .

In addition to the visual representations of the institution , the university 's individual departments , faculties , and schools also employ symbols to visually represent them . One such example is the Faculty of Engineering 's fireball emblem , adopted by the faculty in 1960 . The fireball was adopted from the coat of arms of the defunct Hamilton College . Hamilton College was a science @-@ based college affiliated with McMaster prior to its dissolution in 1957 , when the rest of the university was reorganized .

= = Motto and songs = =

The university 's motto , chosen from Colossians 1 : 17 , is ?? ????? ?? ??????? ?????????? . The motto , adopted in 1888 , is Greek for " In Christ all things consist " . The McMaster motto is unusual in that it employs Greek instead of Latin or English . The use of Latin reflects the origin of universities in mediaeval institutions in which Latin was more prominent than Greek . McMaster 's founders desired to go back beyond the Middle Ages to the earliest days of the Christian faith , and therefore used the Greek form .

Notable among a number of songs commonly played and sung at various events such as commencement and convocation , and athletic games are : The Alma Mater Song ( 1935 ) , with words by Mrs. A.A. BurrIDGE and music by Hugh Brearly ; The McMaster March , with words by Claire Senior Burke et al . , and music by Arthur BurrIDGE ; and My Mac ( 1982 ) , with words and music by Fred Moyes .

= = Coat of arms = =

After the university moved to Hamilton in 1930 , the university petitioned Lord Lyon King of Arms in Edinburgh for a coat of arms . The request was granted on behalf of The Crown on 20 October 1930 . In 1997 the Board of Governors introduced a simplified shield design , which recognized the tradition of McMaster 's heraldry while improving the quality of print and electronic reproduction . The university 's arms and badge was registered with the Canadian Heraldic Authority on 15 October 2006 .

The coat of arms consists of a shield , a crest , and a motto , together with a helmet . The shield contains an eagle , symbolic of the heavenly vision , with a cross on its breast to indicate Christianity as the inspiration for the university 's vision . The chief of the shield bears an open book , a common symbol of learning , with a maple leaf on each side , signifying that McMaster 's charter was granted by the Province of Ontario . The helmet , above the shield , has the open visor and forward @-@ facing style typically used by universities . The mantling surrounding the shield and helmet

represents the cloak worn over a knight 's armour as protection from the sun . The crest , located above the helmet , is a stag and oak tree , which serves as a tribute to the Canadian Senator , William McMaster , who also used a stag and oak on his insignias . The motto is located above the crest , as is common in Scottish heraldry .

= = Notable alumni and faculty = =

As of November 2010 , McMaster University has over 140 @, @ 000 alumni residing over 140 countries . Throughout McMaster 's history , faculty , alumni , and former students have played prominent roles in many fields , accumulating a number of awards including Nobel prizes , Rhodes scholarships and the Lasker Award . Nobel Prize winners include alumnus Myron Scholes , who was awarded the Nobel Memorial Prize in Economic Sciences in 1997 ; faculty member Bertram Brockhouse , who was awarded the Nobel Prize in Physics in 1994 ; and alumnus James Orbinski , who accepted the Nobel Peace Prize in 1992 on behalf of Doctors Without Borders .

Prominent alumni in the field of science include Douglas L. Coleman , who discovered leptin . Notable faculty members in the field of social sciences Henry Giroux , one of the founding theorists of critical pedagogy . A prominent alumnus in the field of social sciences was Harold Innis , who helped shape communication theory and the staples thesis . Other academics and educators who graduated from McMaster include Robert C. Dynes , president of the University of California system ; Heather Munroe @-@ Blum , principal of McGill University ; Howard Petch , president of the University of Waterloo and University of Victoria ; David Chadwick Smith , principal of Queen 's University ; and Mark Wainwright , president of the University of New South Wales .

Many former students have gained local , national and international prominence for serving in government . Croatian Prime Minister , Tihomir Ore?kovi? was an alumnus of the university . Lincoln Alexander served as Lieutenant Governor of Ontario , also becoming the first visible @-@ minority Lieutenant Governor in Canada . Two premiers from Canada , the former premier of Ontario , Dalton McGuinty , and the former premier of Saskatchewan , Tommy Douglas , were graduates of McMaster University . Many graduates have also served as Members of Parliament in the Canadian House of Commons , including , Tony Valeri , the Government House Leader ; and Lawrence Pennell , the Solicitor General of Canada . Roy Kellock , a Justice of the Supreme Court of Canada was a graduate from the university . Charles Aubrey Eaton , one of the signers of the original United Nations Charter and a member of the United States House of Representatives , was also a graduate .

A significant number of prominent business leaders have studied at McMaster . Examples include David Braley , owner of the Toronto Argonauts and BC Lions of the Canadian Football League ; Stephen Elop , former president and CEO of Nokia ; Cyrus S. Eaton , founder of Republic Steel ; Paul D. House , current executive chairman of Tim Hortons ; Lynton Wilson , chairman of Bell Canada , CAE Inc . , and Nortel ; Michael Lee @-@ Chin , current chairman , CEO of AIC Limited ; , and Rob Burgess , former chairman and CEO of Macromedia .

A number of McMaster alumni had also had successful sports careers , including Syl Apps of the Toronto Maple Leafs ; and NHL coach Roger Neilson . The university has had 34 of its graduates compete in the Olympic games , including Olympic medalists Larry Cain ; Adam van Koeeverden ; and Mark Heese . McMaster faculty member Norman Lane was also an Olympic medalist . Several alumni of the university have also become prominent in the entertainment industry , including comedians , actors and directors . Such alumni include Eugene Levy ; Martin Short ; Jonathan Frid ; Ivan Reitman ; Dave Thomas ; and John Candy . Two members of McMaster had travelled in space ; faculty member Dafydd Williams , and alumna Roberta Bondar , the first Canadian woman in space .