

Research and  
Innovation

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LAND  
ACKNOWLEDGEMENT

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a a e f ee ga de cha ge a gI dge e e ,  
c d g heHa de a ee a dA h aabeg a .  
McG h , ec g e , a d e ec he e a  
a he ad a e a d f he a d a d a e h ch  
he e a d da .



Message

*from*

Martha Crago,  
Vice-Principal,  
Research +  
Innovation

*The e cha ge f<sub>l</sub> edge, e e e a d da a  
f da e a add e gg ba cha e ge .*

The University continues to look for ways  
to invest in research and set audacious



+ A focused moment of study in the McCall MacBain Arts Building (Photo: Alex Tran)





Year  
*in*  
Review

RESEARCH  
IMPACT



*McGill University is pleased to announce the  
release of the 2022 Research Impact Report. The  
report, developed by the Office of Research  
Impact, provides a comprehensive overview of  
the university's research activities and  
achievements. It highlights the impact of  
our research on society, the economy, and  
the environment. The report is available  
in both English and French. For more  
information, please visit our website at  
mcgill.ca/research-impact.*

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Maclean's University  
Rankings 2023



QS World University  
Rankings 2023



Times Higher Ed World University  
Ranking 2023

**\$687.4M**

IN FUNDING FROM  
ALL SOURCES  
(FY2021)

**\$79M**

IN FUNDING FROM  
QUEBEC PROVINCIAL  
SOURCES  
(FY2021)

**\$391M**

IN FUNDING FROM  
CANADIAN FEDERAL  
SOURCES  
(FY2021)

**1,325**

POLICY DOCUMENTS  
CITING MCGILL AUTHORED  
PUBLICATIONS  
(2021)

**10,464**

PUBLICATIONS WITH  
MCGILL AUTHORS  
(2021)

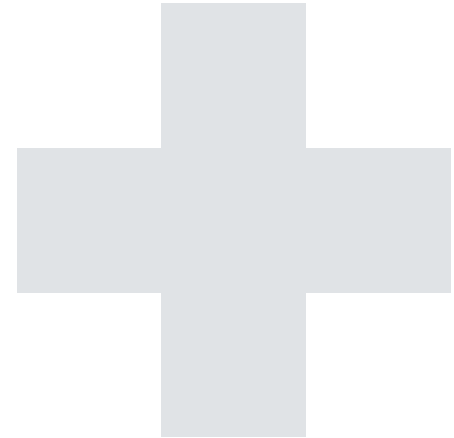




RESEARCH  
THAT MADE  
AN IMPACT

*In 2022, McGraw-Hill Education  
led the effort to advance  
digital learning and  
education.*

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## **LESSONS FROM THE ARCTIC FOR FUTURE LIFE ON MARS**

A McGill research team, led by Professor and Canada Research Chair, Lyle Whyte (Department of Natural Resource Sciences), has demonstrated, for the first time, that microbial communities found living in Canada's High Arctic hold vital information for possible future habitation of Mars.





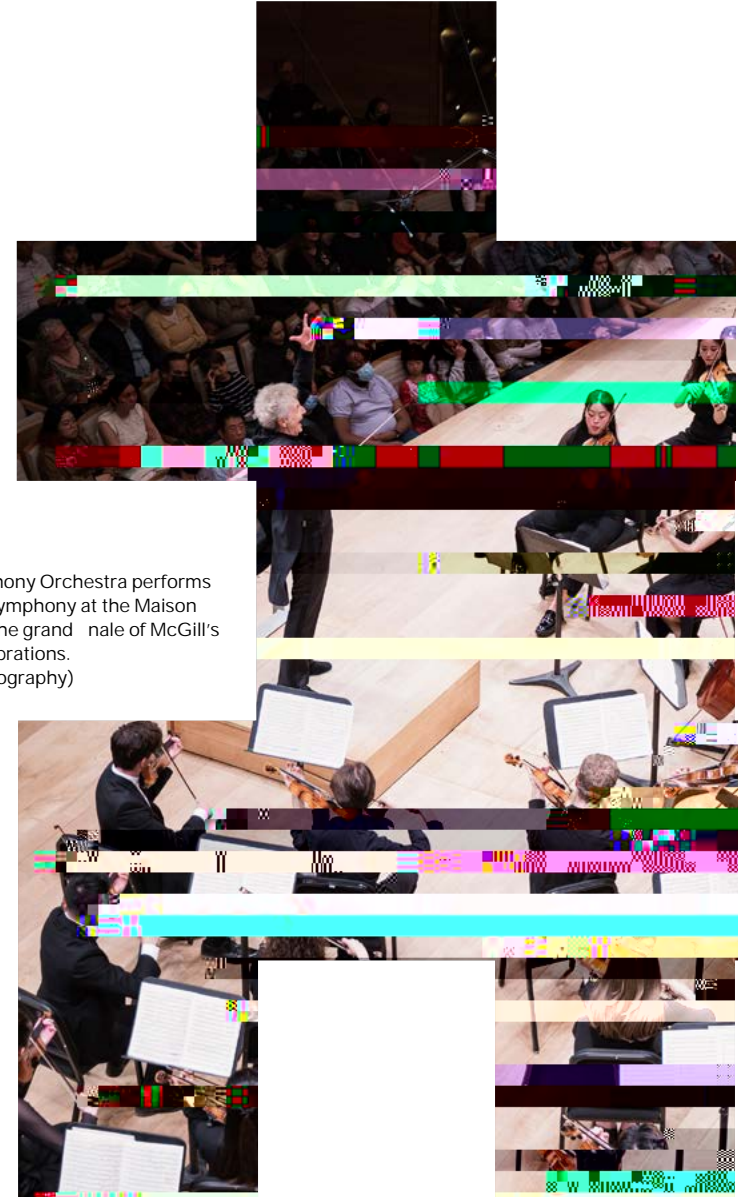
## CHANGING THE SCORE FOR MUSIC RESEARCHERS

Music researchers looking to find scores in different notations, collections of performing parts, choir arrangements, and more, are thwarted by text-based databases and search engines. There are currently hundreds of specialized online music databases containing this content, but they use different organizing systems. A \$2.5 million SSHRC Partnership Grant-funded project led by Professor **Ichiro Fujinaga** (Schulich School of Music) is working to solve these issues.

Fujinaga is working in collaboration with an international music library consortium and non-profit organizations hosting large music databases to create a linked metadata search engine called SIMSSA, where many different musical resources can be searched simultaneously and linked back to the individual databases. The project will also create an online Virtual Instruments Museum (VIM), which will crowd-source names and pictures for instruments through history and in different languages.

[READ MORE \[+\]](#)

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+ The McGill Symphony Orchestra performs Beethoven's 9<sup>th</sup> Symphony at the Maison Symphonique in the grand finale of McGill's Bicentennial celebrations. (Photo: Tam Photography)

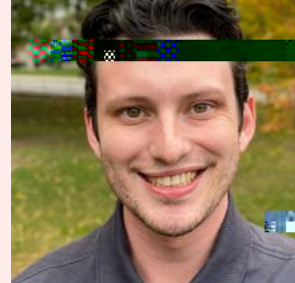






THE ROAD  
TO RESEARCH:  
THE IMPRESS  
PROGRAM

From August 2022, each funded  
Health Bachelor, Health Letter (HBHL) had  
dedicated budget for a health  
education fund. Meeting with  
Professor E. E. S. S. de  
(IMPRESS) and, de ed b McG 's  
Bachelor each year.  
The award of the degree of graduate  
from Quebec - ec da h  
and each year de he e  
from McGill fee, h f ag ad a e-  
de e .



+ Dane Malenfant  
(Photo: Brier Malenfant)

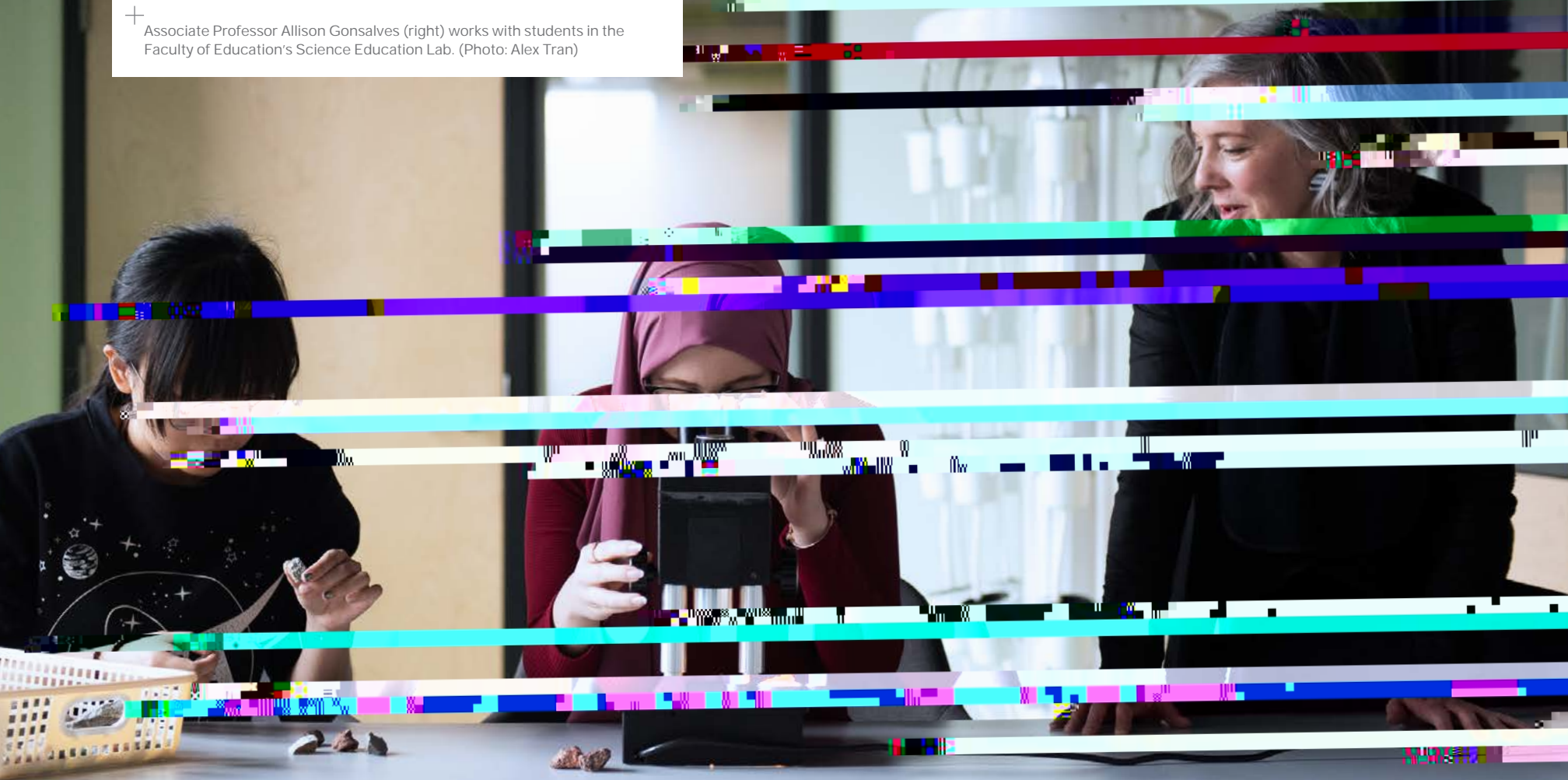
“

The IMPRESS program not only introduced me to research but set me up on a path directly towards graduate school. The support I received was phenomenal and I'm very privileged that this opportunity for Indigenous students exists at McGill.

”

Dane Malenfant, BA '22

+ Associate Professor Allison Gonsalves (right) works with students in the Faculty of Education's Science Education Lab. (Photo: Alex Tran)





## INVESTMENTS THAT MADE A DIFFERENCE

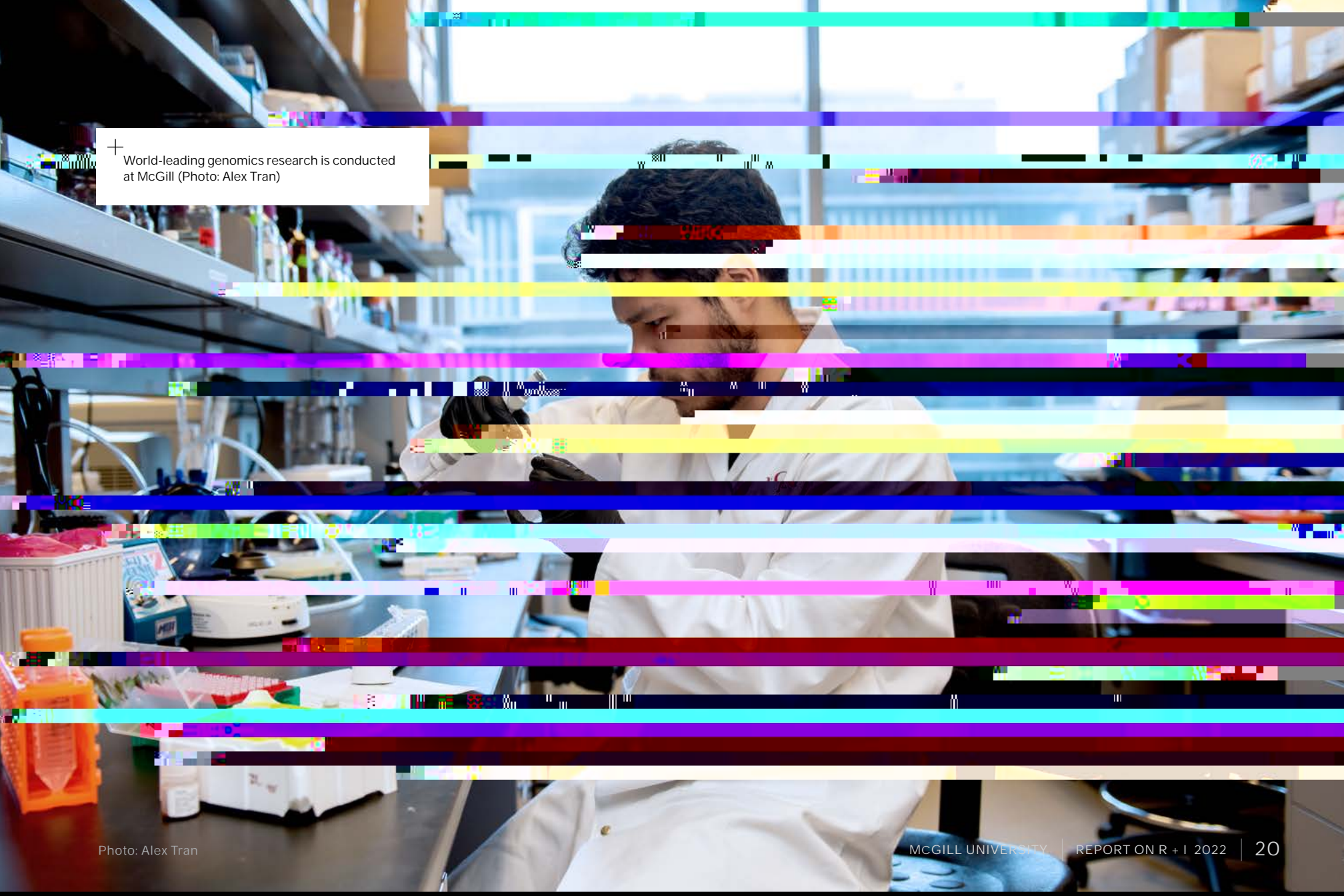
### FORGING A HEALTHIER FUTURE THROUGH RESEARCH: THE NEW VICTOR PHILLIP DAHDALEH INSTITUTE OF GENOMIC MEDICINE

McGill has long been a leader in Canada and North America in genomic medicine research. In 2022, McGill received a landmark \$30 million donation to support its renowned genomics research and education programs from alumnus and long-time donor, Victor Dahdaleh.

Thanks to this gift, McGill launched the **Victor Phillip Dahdaleh Institute of Genomic Medicine**, which harnesses the inter-

disciplinary expertise and research infrastructure across McGill's Faculties to expand its high-impact research programs, invest in top talent, and train the next generation of scientific world leaders.

Taking a "full spectrum" approach to genomic medicine, the Institute will help us understand a person's genes and how they interact to inform an individual's clinical care.



+ World-leading genomics research is conducted at McGill (Photo: Alex Tran)



## **BOOSTING SPACE RESEARCH AT MCGILL TO THE OUTER LIMITS**

The ground-breaking work by researchers at McGill includes major discoveries in the area of neutron stars and **fast radio bursts**. Physics Professor **Victoria Kaspi**, an award-winning



PARTNERSHIPS  
THAT PROPEL



At the announcement that Moderna will build a state-of-the-art manufacturing facility in the Montreal area, Prime Minister of Canada, Justin Trudeau, and Quebec Premier, François Legault, meet with students and Martha Crago, Vice-Principal, Research and Innovation, in Professor Nahum Sonenberg's lab. (Photo: Alex Tetrault)

## **INTERNATIONAL PARTNERSHIP FOR THE INTERNATIONAL LABORATORY ON LEARNING SYSTEMS (ILLS)**

In 2022, a new international lab dedicated to artificial intelligence kicked off in Montreal, with McGill as a key partner. A consortium of research organizations formed the new International Laboratory on Learning Systems (ILLS) focused on artificial intelligence (AI).

The new centre connects McGill University, École de technologie supérieure (ÉTS), Mila – Québec AI Institute,

INNOVATION  
IN ACTION

*In 2021, the Office for Intellectual Property + Patents established the McGill  
Intellectual Property Fund (MIPF) to accelerate the commercialization of  
McGill-developed IP.*

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The fund is structured to support McGill-developed Intellectual Property (IP). Teams are awarded one of three funding pack-

## MCGILL SPINOFFS IN ACTION

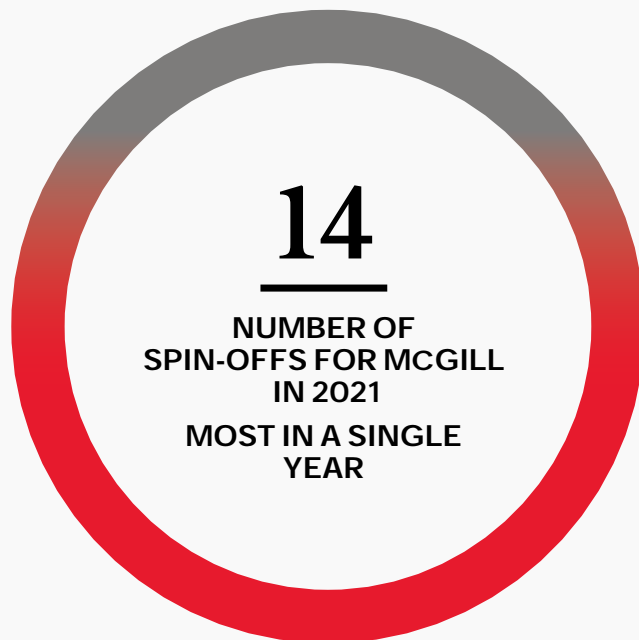
### **CARBICRETE: CLEAN TECH FOR A MORE SUSTAINABLE FUTURE**

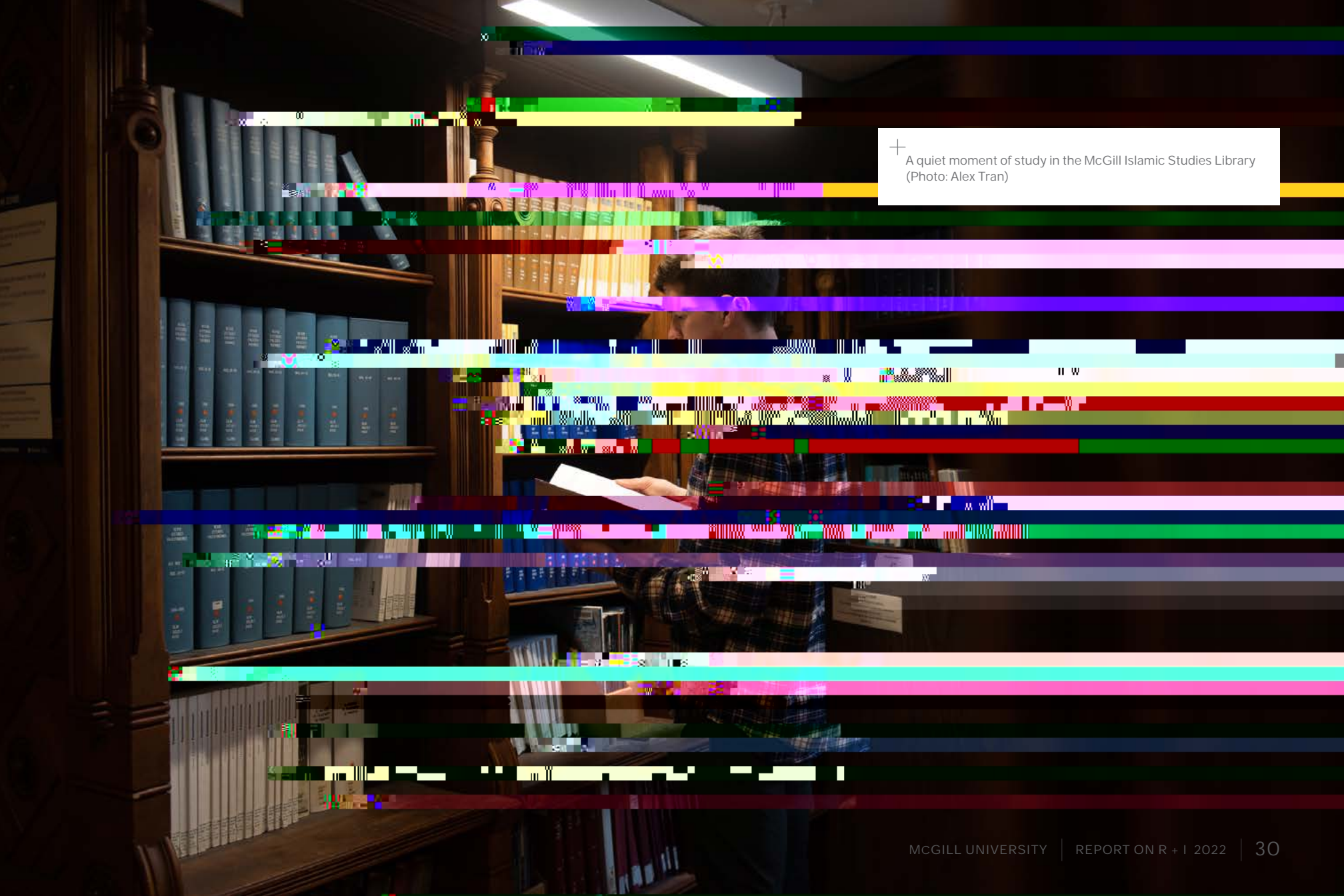
Founded by a team of McGill alumni, [CarbiCrete](#) has developed a formula for making cement-free, carbon-negative concrete. The material is used in Concrete Masonry Units (CMUs) that not only are cheaper to make, faster to cure and stronger than normal CMUs, but that also sequester carbon dioxide in their manufacture.

## **ANOMERA**

In 2014, a team of researchers from McGill and the Government of Quebec discovered plastic microbeads—often used by the cosmetic industry—at the bottom of the St. Lawrence River. The search for a replacement for these polluting plastics may stop with McGill spinoff **Anomera Inc.**, which manufactures carboxylated Cellulose Nanocrystals (CNC) in a patented eco-friendly method. In 2021, Canada Economic Development (CED) invested \$4.25 million to support the construction of a facility that will produce 250 tonnes per year of carboxylated-cellulose nanocrystals (cCNC) and bring its cosmetics ingredients and industrial products to market. By the end of the year, Anomera started manufacturing its first commercial product,







+ A quiet moment of study in the McGill Islamic Studies Library  
(Photo: Alex Tran)

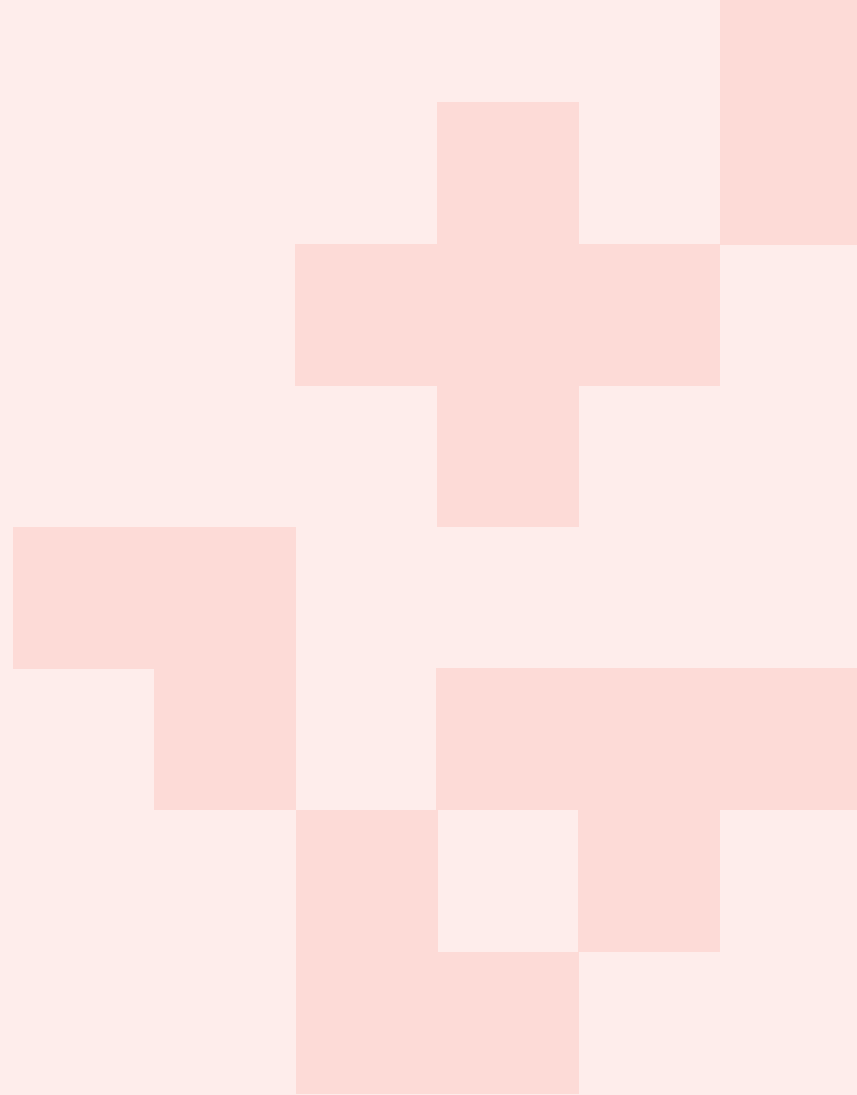


AWARDS +  
PRIZES

*I 2022, 112 McG e ea che  
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B a a a a dee !*

*S e f e g e  
a e c ded hef g age :*

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**BROCKHOUSE CANADA PRIZE  
FOR INTERDISCIPLINARY RESEARCH  
IN SCIENCE AND ENGINEERING/  
CHIME TEAM**

**Victoria Kaspi**, Professor, Department  
of Physics

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**Ma Dobbs**, Professor, Department  
of Physics

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**JOHNSON AND JOHNSON  
WISTEM2D SCHOLARS AWARD**

**Noémie-Manuelle Dorval Courchesne**,  
Assistant Professor, Department of Chem-  
ical Engineering

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**ROYAL SOCIETY OF CANADA (RSC)  
FELLOWS**

**Ehab Abouheif**, James McGill Professor,  
Department of Biology, Faculty of Science

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**Roussos Dimitrakopoulos**, Professor,  
Department of Mining and Materials  
Engineering, Faculty of Engineering; Tier 1  
Canada Research Chair in Sustainable  
Mineral Resource Development and  
Optimization Under Uncertainty

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**Allan Hepburn**, James McGill Professor,  
Department of English, Faculty of Arts

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**Joel Kamnitzer**, Professor, Department  
of Mathematics and Statistics, Faculty of  
Science

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**Gergely L. Lukacs**, Distinguished  
James McGill Professor, Department of  
Physiology, Faculty of Medicine and  
Health Sciences

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**Stephen McAdams**, Professor, Depart-  
ment of Music Research, Schulich School  
of Music; Tier 1 Canada Research Chair in  
Music Perception and Cognition

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**Heidi McBride**, Full Professor, Depart-  
ment of Neurology and Neurosurgery, and  
the Department of Anatomy and Cell  
Biology, Faculty of Medicine and Health  
Sciences; Tier 1 Canada Research Chair in  
Mitochondrial Cell Biology

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**Satya Prakash**, Professor, Department of  
Biomedical Engineering, and Department  
of Physiology, Faculty of Medicine and  
Health Sciences

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**Doina Precup**, Associate Professor,  
School of Computer Science, Faculty  
of Science

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**Jonathan Sterne**, James McGill Professor, Department of Art History & Communication Studies, Faculty of Arts

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**Jennifer Welsh**, Professor, Department of Political Science, Faculty of Arts; Canada 150 Research Chair in Global Governance and Security; Director of the Centre for International Peace and Security Studies (CIPSS)

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### **MEMBERS OF THE RSC COLLEGE OF NEW SCHOLARS, ARTISTS, AND SCIENTISTS**

**Nicolas Cowan**, Professor, Department of Earth and Planetary Sciences, Faculty of Science

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**Patricia Pelufo Silveira**, Associate Professor, Department of Psychiatry, Faculty of Medicine and Health Sciences

---

**Nathan Spreng**, Professor, Department of Neurology and Neurosurgery, Faculty of Medicine and Health Sciences

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**Debra Thompson**, Associate Professor, Department of Political Science, Faculty of Arts; Tier 2 Canada Research Chair in Racial Inequality in Democratic Societies

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### **RSC RUTHERFORD MEMORIAL MEDAL IN PHYSICS & NSERC HERZBERG MEDAL**

**Daryl Haggard**, Associate Professor, Department of Physics

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### **RSC FLAVELLE MEDAL**

**Graham Bell**, Professor, Department of Biology

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### **RSC LORNE PIERCE MEDAL**

**Robert Lecker**, Department of English: Lorne Pierce Medal

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### **WORLD CULTURAL COUNCILS ALBERT EINSTEIN WORLD AWARD OF SCIENCE**

**Vicky Kaspi**, Professor, Department of Physics

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### **JOSE VASCONCELOS WORLD AWARD OF EDUCATION**

**Claudia Mitchell**, Distinguished James McGill Professor, Department of Integrated Studies in Education

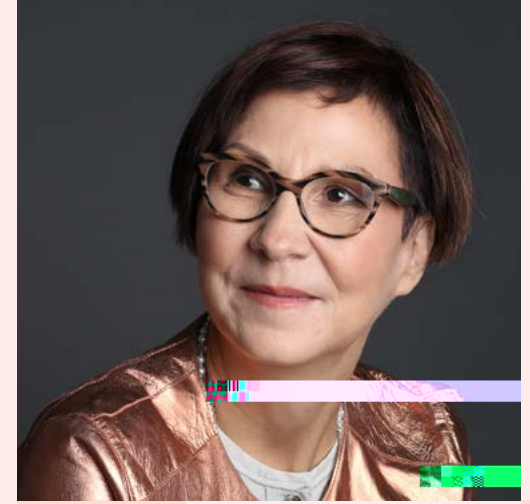


## SPOTLIGHT ON THE SSHRC GOLD MEDAL

*O e fCa ada' a ca ł ch a a da  
defa gab ead ca ef I dge ch de ' gh a d efa e,  
P fe fS ca W ł, **Cindy Blackstock**, ha bee a a ded  
heS ca Sce ce a dH a e Re ea chC c ' (SSHRC)  
G dMeda, hefede a age c ' h ghe h . The G dMeda  
a a ded a d d a h e a ed eade h , ded ca ,  
a d g a f h gh ha e ed de a dc eag e a ł e.*

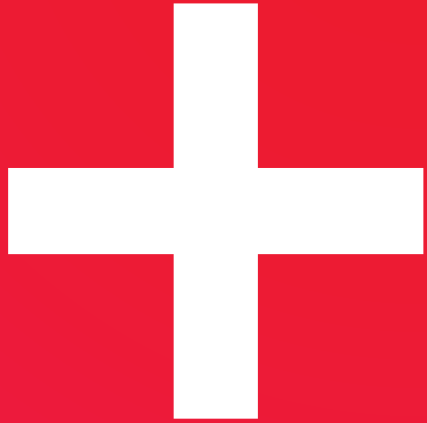
A member of the Gitksan First Nation, Blackstock is a Professor in McGill's School of Social Work and the Executive Director of the First Nations Child and Family Caring Society of Canada. Blackstock has devoted decades of work to changing the state of First Nations Child Welfare in Canada, saying that children remind her of how to defeat anger and injustice in society through love. Her academic research focuses on inequities in First Nations' public and voluntary sector services and the over-representation of First Nations children in the welfare system. She has worked tirelessly to develop policy interventions to address these issues.

[READ MORE \[+\]](#)



Professor Cindy Blackstock  
(Photo: First Nations Child and Family Care Society of Canada)





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Numbers



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e a ed d a d a e h
FY2021.*

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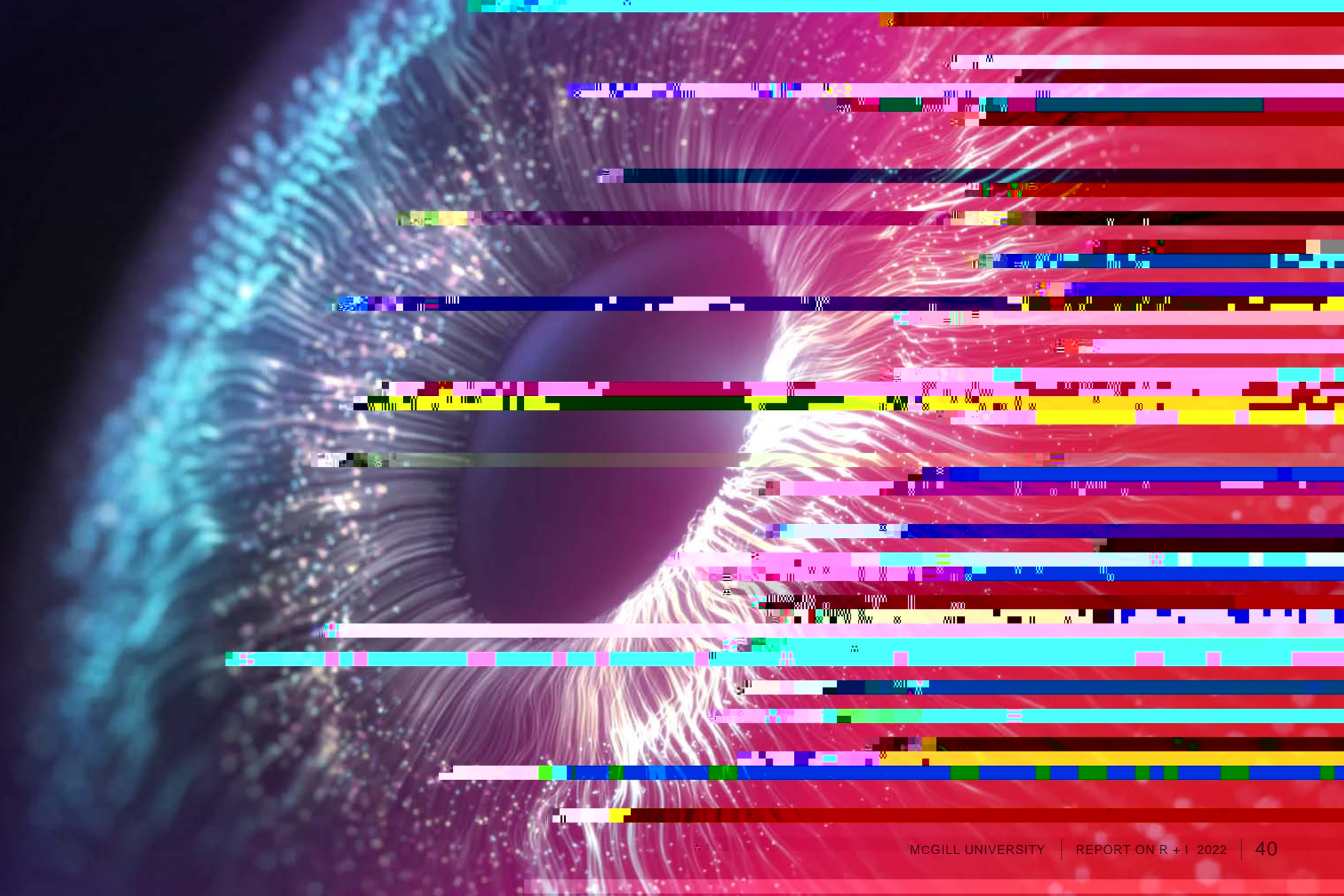
This period reflects the most recent and complete data available from various sources including:

- **InfoEd Global**, McGill's internal research administration database;
- **Canadian Association of University Business Officers (CAUBO)**, a non-profit organization representing the chief administrative and financial officers of over 100 institutions across Canada;
- **Observatoire des sciences et des technologies (OST)**, an organization dedicated to science, technology, and innovation that maintains a national research funding database for its partners from the Tri-Agency, the three federal research funding agencies;
- **Les Fonds de recherche du Québec (FRQ)**, the Province's three research funding agencies;
- **SciVal**, a bibliometric tool, based on the Scopus database, that offers access to research performance metrics of over 10,000 institutions in 230 regions and countries;

- **Statistics Canada**, Canada's national statistics office; and
- **AUTM**, formerly known as the **Association of University Technology Managers**, a non-profit organization that supports and advances technology transfer.

Certain metrics within this report are benchmarked in comparison to the U15 Group of Canadian Research Universities. For other metrics, the University of Toronto, the University of British Columbia, l'Université de Montréal, the University of Alberta and McMaster University have been selected as comparator peer institutions as they resemble McGill in size, scope of research and research intensity with a medical doctoral program,





## RESEARCH FUNDING

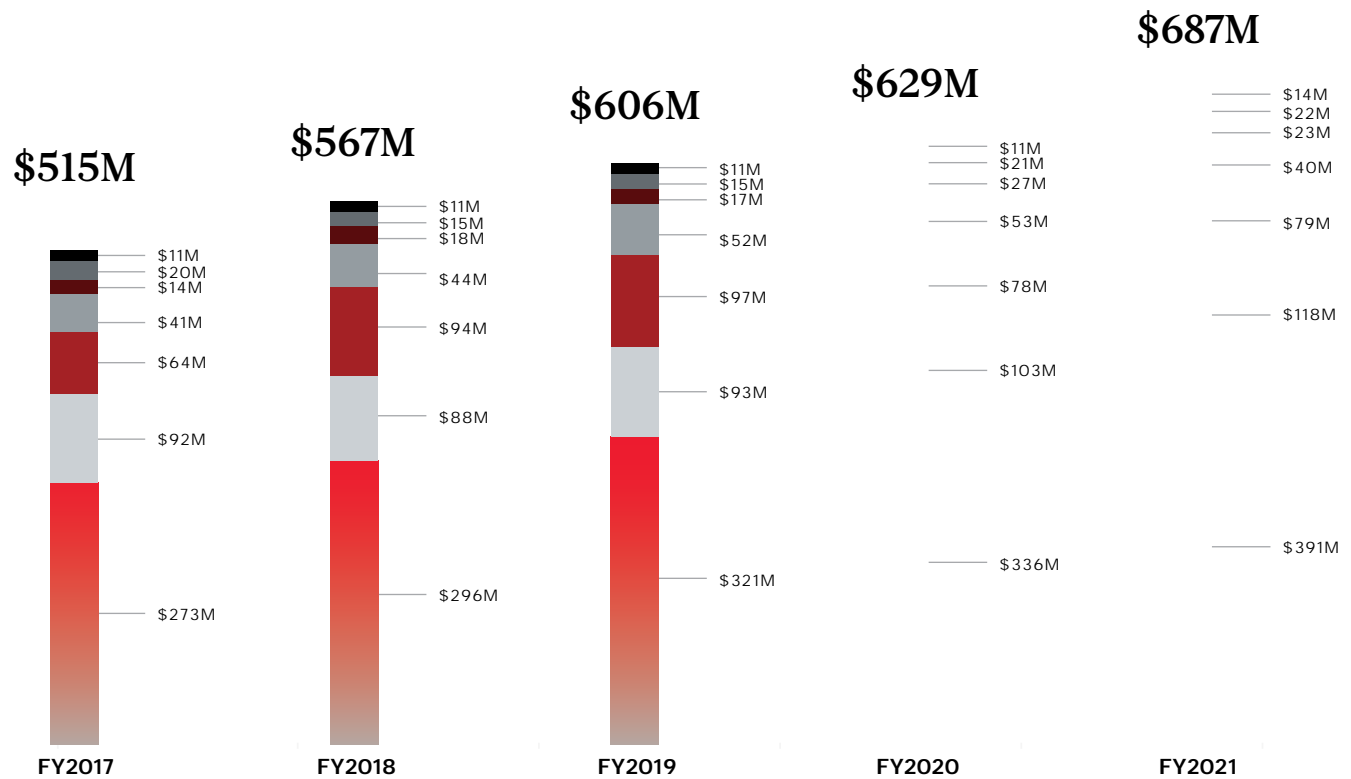


FIGURE 2: MCGILL'S RESEARCH FUNDING OVER 5 YEARS BY CATEGORY OF FUNDING (\$M), FY2021

\* Note: Not for Profits include organizations with strong funding mandates

**\$101M**  
LEVERAGED  
RECEIVED (FY22)

A diagram consisting of a rectangular box with a thin black border. The text "\$101M LEVERAGED RECEIVED (FY22)" is centered above the box. A horizontal line extends from the left side of the box, and a vertical line extends from the bottom of the box, meeting at a right-angle corner.

**\$191M**  
LEVERAGED  
FUNDING REQUESTED

A diagram consisting of a rectangular box with a thin black border. The text "\$191M LEVERAGED FUNDING REQUESTED" is centered above the box. A horizontal line extends from the left side of the box, and a vertical line extends from the bottom of the box, meeting at a right-angle corner.

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**\$84M**  
FEDERAL  
AWARDED

Funding awarded (\$M) for  
the Healthy Brains, Health Lives initiative  
2017-2025 (2016 competition)

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**\$165M**  
FEDERAL FUNDING  
REQUESTED

Funding applied (\$M) for  
DNA to RNA: An Inclusive Canadian Approach to

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FIGURE 3: CANADA FIRST RESEARCH  
EXCELLENCE FUND

TABLE 2: U15 TOTAL RESEARCH FUNDING (\$M)

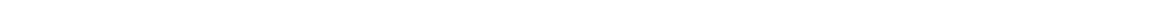
INSTITUTION	TOTAL RESEARCH FUNDING (IN 1000'S)	FACULTY COUNT*
University of Toronto	\$1,461M	2,283
University of British Columbia	\$726.8M	2,379
<b>McGill University</b>	<b>\$687.4M</b>	<b>1,809</b>
Université de Montréal	\$682.3M	1,902
University of Alberta	\$554.1M	1,551
Université Laval	\$515.1M	1,380
University of Calgary	\$504.5M	1,482
University of Ottawa	\$432.7M	1,218
McMaster University	\$374.6M	909
University of Saskatchewan	\$285.4M	891
Western University	\$263.8M	1,125
University of Manitoba	\$231.0M	1,131
Queen's University	\$227.3M	831
University of Waterloo	\$221.0M	1,131
Dalhousie University	\$183.6M	882



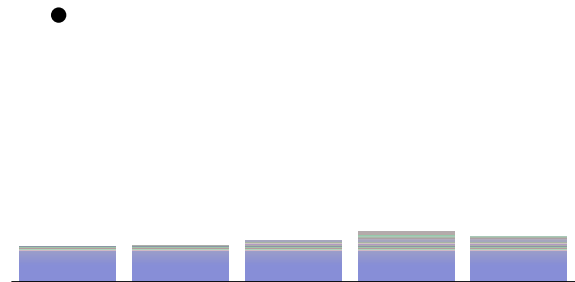
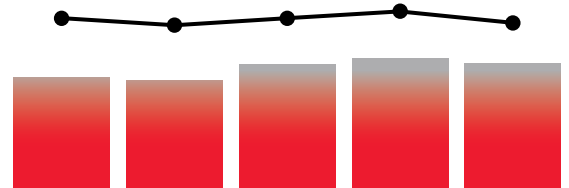
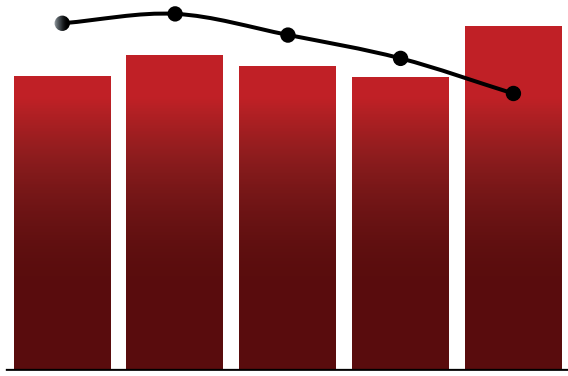


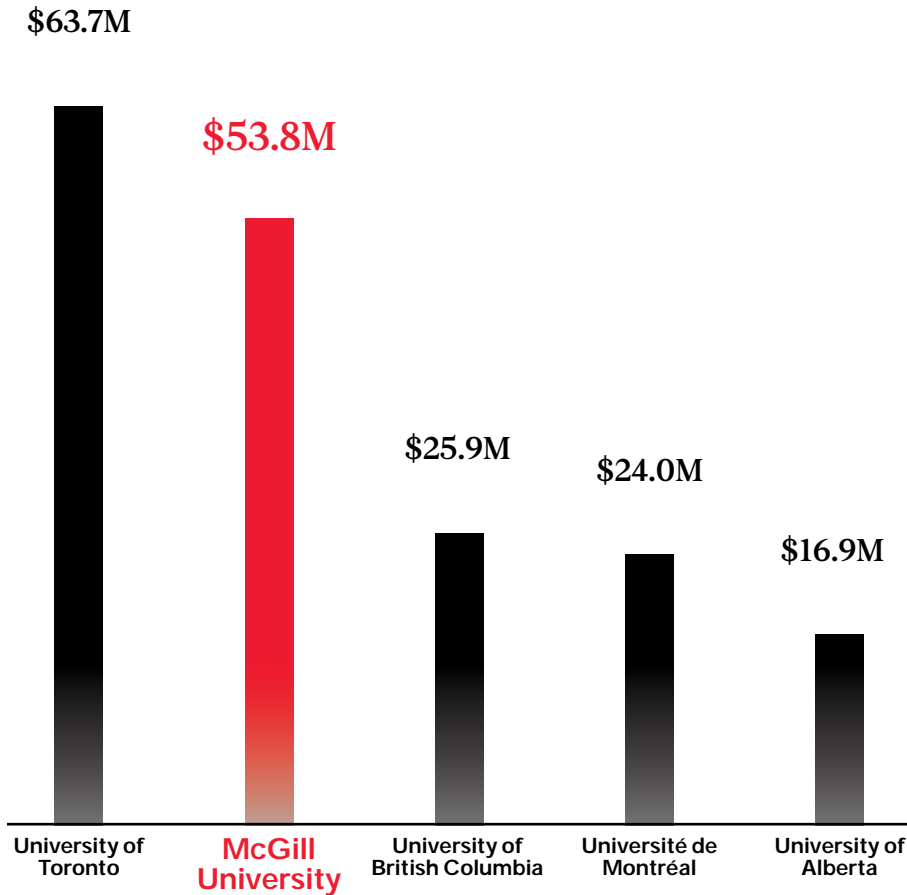


TRI-AGENCY  
FUNDING









In the Fall 2022 CIHR Project Competition, McGill University awarded 63% of the total funding of \$53.8M, the highest percentage of any university. McGill University also received a total of \$855K in CIHR funding, the highest amount received by any university. McGill University has funded 30% of the total funding of \$53.8M, the highest percentage of any university. McGill University has funded 30% of the total funding of \$53.8M, the highest percentage of any university.

FIGURE 7: TOTAL \$ AWARDED (\$M) IN THE CIHR PROJECT COMPETITION, FALL 2022

Source: Canadian Institutes of Health Research

A  $FEI > 1.00$ , indicating that funding is higher than what would be expected based on faculty size. This is true for CIHR (1.79, 1.81, 1.65, 1.55, 1.36) and SSHRC (1.51, 1.42, 1.26, 1.27, 1.18). For NSERC, the  $FEI$  is below 1.00 (0.91, 0.87, 0.87, 0.89, 0.83), indicating that funding is lower than expected based on faculty size.

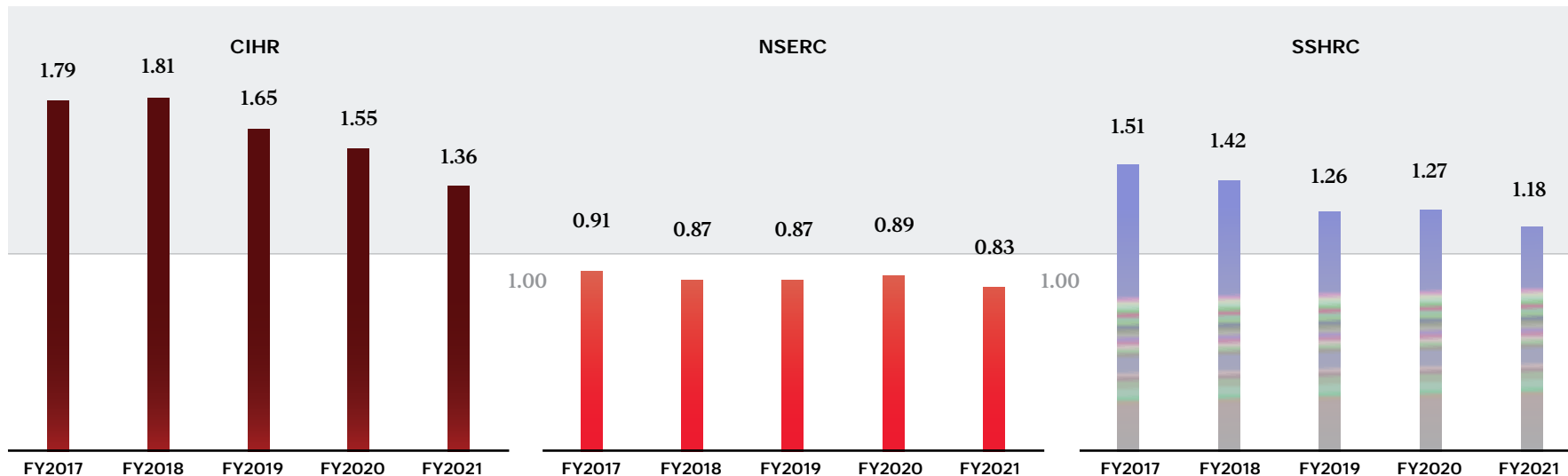
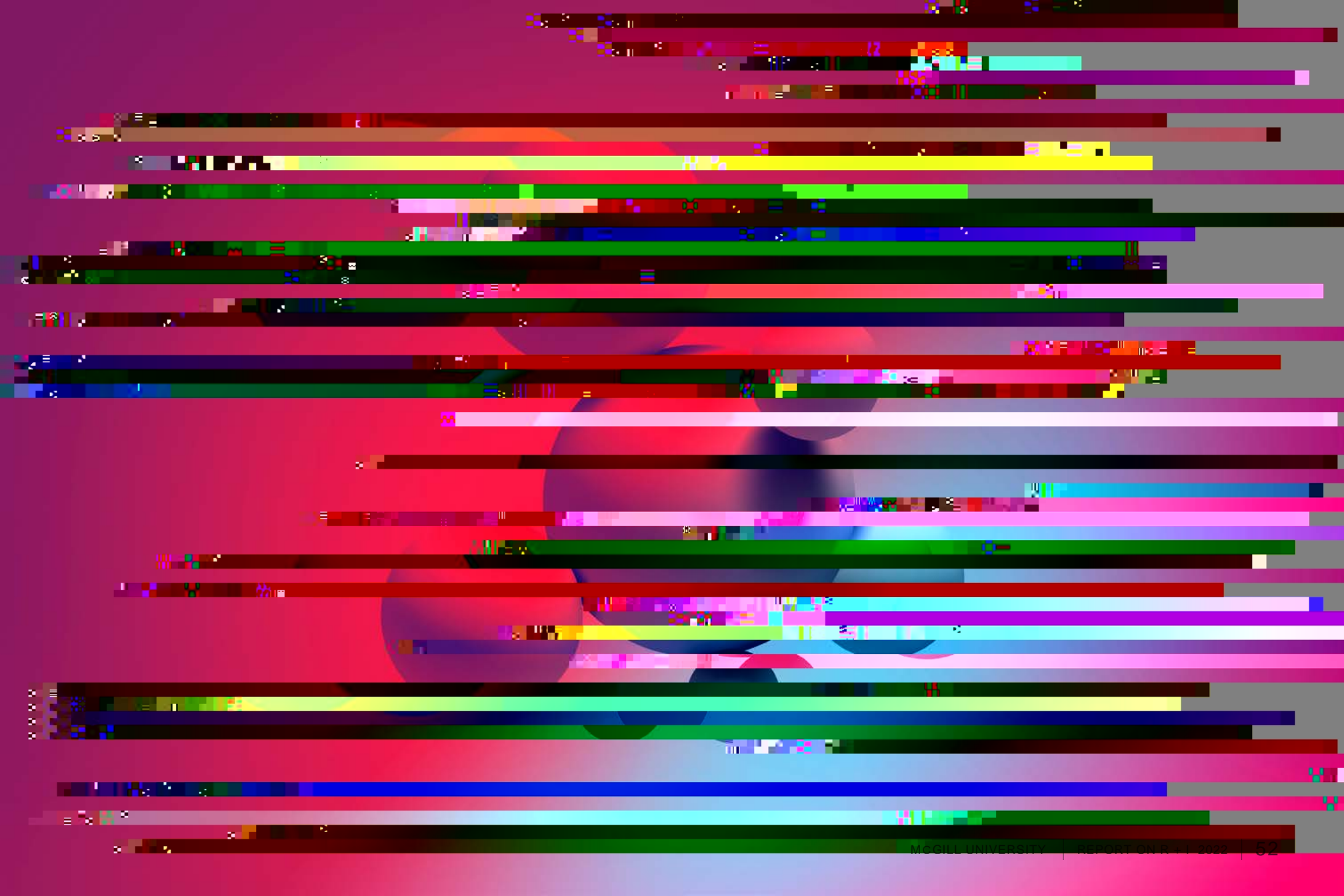


FIGURE 8: MCGILL'S SHARE OF U15 TRI-AGENCY FUNDING RELATIVE TO FACULTY SIZE (FUNDING EFFECIENCY INDEX), FY2017 TO FY2021

Source: OST and Statistics Canada





# FONDS DE RECHERCHE DU QUÉBEC FUNDING

\$6.3M

\$8.7M

\$20.3M

■ FRQSC

■ FRQNT

■ FRQS



## INDUSTRY SPONSORED RESEARCH FUNDING

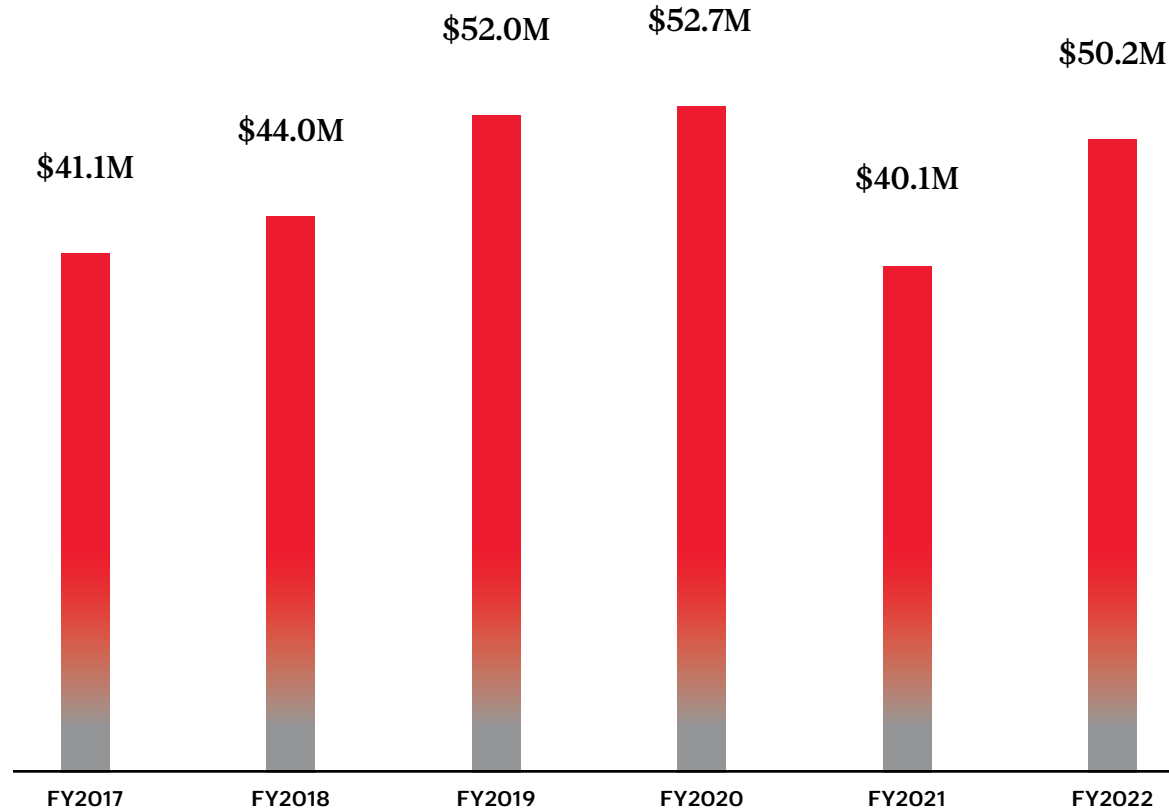


FIGURE 10: MCGILL'S INDUSTRY SPONSORED RESEARCH FUNDING OVER SIX YEARS, FY2017 TO FY2022

Source: CAUBO, includes industry sponsored donations and grants and contracts.

Data for FY2022 is preliminary at this time









Table 5 details the number of co-authored publications by international institutions collaborating with McGill from 2017 to 2021. The top 10 institutions are listed in the table below.

The top 10 co-authored publications with McGill are listed in the table below:

TABLE 5: TOP 10 INTERNATIONAL INSTITUTIONS COLLABORATING WITH MCGILL BY NUMBER OF CO-AUTHORED PUBLICATIONS, 2017 TO 2021

RANK	INSTITUTION	COUNTRY	CO-AUTHORED PUBLICATIONS
1	Harvard University	United States	2522
2	CNRS	France	2016
3	University College London	United Kingdom	1323
4	Université Paris Cité	France	1288
5	University of Pennsylvania	United States	1284
6	Institut national de la santé et de la recherche médicale	France	1266
7	University of Michigan, Ann Arbor	United States	1263
8	University of Washington	United States	1202
9	Columbia University	United States	1189
10	University of Oxford	United Kingdom	1184

Source: SciVal. Data as of January 23, 2023.



Photo: Alex Tran



In alignment with recommendations stemming from the San Francisco Declaration on Research Assessment (DORA), McGill recognizes the value of non-traditional research outputs. One qualitative indicator of research impact is the influence of research on policy and practice. Below is a brief summary of the impact of McGill research on policy from January 2017 to December 2022.

- McGill publications were cited in almost 5,000 policy documents
- Policy bodies included:
  - World Health Organization  
(policy body citing McGill publications most frequently)
  - World Bank
  - Government of Canada
  - Province of Québec
  - Organisation for Economic Co-operation and Development
  - United Nations Environment Programme

Signatory of



**DORA**

*The excellence of McGill's research community  
is matched by the dedication  
of those who support their endeavours.*

