



McGill

Faculty of
Science

Leading discovery,
**invention and
learning**

Make *your* mark

As a global society, we are more
connected, complex and
interdependent than ever before –
and we face a multitude
of intersecting challenges.



The imminent threat of **irreversible climate change and biodiversity loss**, along with sustainability challenges that cut across environmental, economic and societal domains

An increase in **mental health challenges** across all age groups, impacting wellness and life outcomes

The rise of **artificial intelligence (AI)** and its impact on technology and society



A growing mistrust in science and scientists in the public space

How will we address these challenges?

- By transforming the way science is conducted and taught, with increased emphasis on student-professor interactions, interdisciplinary collaboration and outreach beyond the university sphere
- By finding solutions critical to economic and human well-being

Our academic vision

- To **identify and address key questions** that are critical to human and economic prosperity in the fields of environment, new materials, mathematics, computer science and data sciences
- To **prepare our students for a lifetime of accomplishment**, by training them to become the next generation of scientists, business leaders and policy practitioners
- To serve as a catalyst for **new perspectives on teaching and discovering** – both within the McGill community and beyond

Make *your* mark

Leading discovery, invention and learning

Opportunities for philanthropic support

- 1 Taking urgent action on sustainability challenges
 - 2 Transforming data into knowledge
 - 3 Developing novel approaches to human wellness
 - 4 Revolutionizing science learning
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- 5 Giving strategically: The Science Opportunities Fund



Taking urgent action on sustainability challenges

1.1

Protecting biodiversity

Support the proposed *Biodiversity Institute*

The groundwork

The Faculty of Science is home to world-renowned scholars in biodiversity and conservation research, supported by extensive expertise in satellite imaging and other Earth observation technologies.

With this expertise, we have the potential to be a leading player in addressing the alarming rate of global biodiversity loss – an urgent issue that threatens the stability of local and global economies.





Your impact

Your gift will help us create a new **Biodiversity Institute** with a Biodiversity Observatory as its centrepiece. With your support, this Institute will allow us to:

- **Forecast biodiversity and ecosystem changes**, and provide governments and industry with the knowledge necessary to protect ecosystem biodiversity
- Establish McGill and Canada as leaders in **monitoring and protecting global biodiversity**



1.2

Leveraging Earth Systems data for strategic planning

Support the proposed *Earth Systems Institute*

The groundwork

McGill's Earth Systems researchers have unique access to a global network of measurement capabilities, including a network of North-to-South Pole research stations, remote-sensing capabilities, and computational models that integrate the resulting data to provide predictive insights.



Your impact

Your support will help us launch the new **Earth Systems Institute**, leveraging the expertise of our researchers to build comprehensive, quantitative and predictive models of interactions between land, oceans and atmospheres. With the knowledge gained from these computationally intensive models, we can:

- **Inform policy makers, stakeholders and the public** in devising the best strategies for landscape development, urban growth and climate forecasting
- **Become a world leader** in the development of the theoretical and experimental capabilities that are required to address some of the great unknowns of Earth Systems

1.3

‘Benign by design’ through Green Chemistry

Help us create the *Green Chemistry Institute*

The groundwork

Chemical and materials use is the USD \$5 trillion “silent giant” of the global economy, but it is also the single greatest contributor to resource use and environmental pollution.

For more than 25 years, McGill has been a leader in Green Chemistry, which aims to minimize the use of chemical feedstocks and energy while limiting the production of environmentally hazardous waste.





Your impact

Your support will help us establish the **Green Chemistry Institute**, making McGill the premier site for the discovery and application of sustainability principles to chemical manufacturing and use. The proposed Institute will:

- Merge our expertise in molecular and materials synthesis, efficient chemical use, and the application of new AI and computational methods to **reduce the harmful impacts of chemical manufacturing processes and their products**
- Enable our researchers to inform policy makers, stakeholders and the public as to the **best strategies for the environmentally responsible use of chemical materials**



Transforming data into knowledge

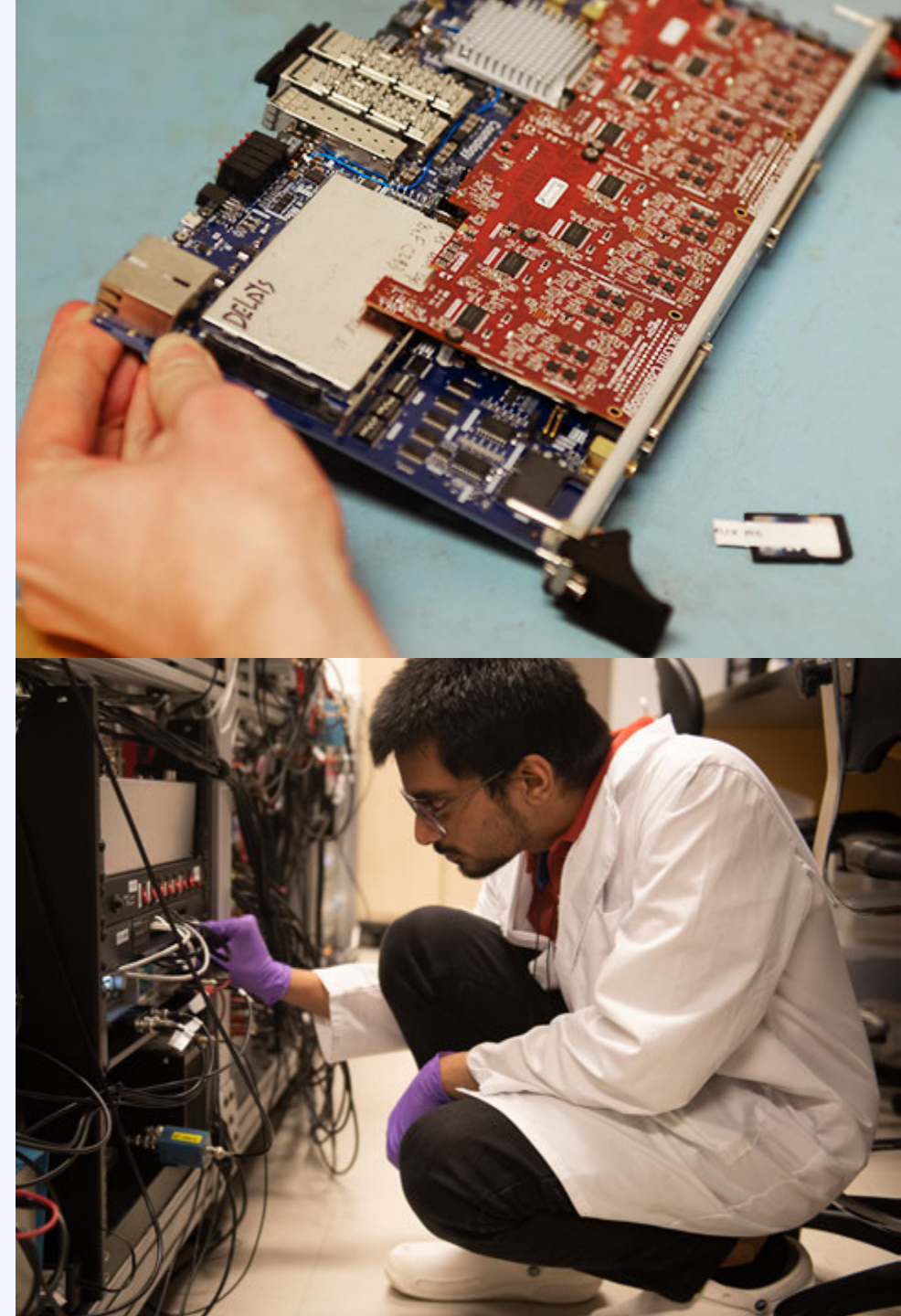
Support the *Computational Data Systems Initiative*

The groundwork

Given that 95 per cent of the world's data was created in the past five years, researchers must rely on quantitative and computational procedures to manage these vast quantities of scientific data. This has created a critical need for new methods and tools that enable researchers to integrate and manage these massive datasets.

McGill's [Computational Data Systems Initiative \(CDSI\)](#) is tackling this need. It serves as a hub for research, training and resources at the nexus where computing and data systems meet.

Importantly, it is home to the [McGill Collaborative for AI and Society \(McCAIS\)](#), a trans-faculty organization whose mission is to understand the impact of AI on society and develop evidence-based best practices for its responsible use.





Your impact

Your gifts to **CDSI** and **McCAIS** will help position McGill as a global leader in data science methods and algorithm innovations, and their application to complex physical, biological and social sciences problems. With donor support, we can:

- **Discover and apply** new computational, mathematical, statistical and data science methods
- **Facilitate knowledge exchange and best practices** across sectoral and disciplinary boundaries, in a domain that is evolving at a remarkable rate
- Accelerate our capacity to **interpret and translate data into knowledge that can serve society** – with both rigour and consideration of ethics

3

Developing novel approaches to wellness

Support the *Professor Virginia I. Douglas Centre
for Clinical Psychology and Wellbeing*



The groundwork

The Department of Psychology's [Professor Virginia I. Douglas Centre for Clinical Psychology](#) builds on four decades of internationally renowned research in the treatment of mental health conditions. Its centrepiece is an in-house clinic that provides training opportunities for PhD students in Clinical Psychology.

This clinic has emerged as a centre of excellence for clinical psychology research and treatment. It is also an increasingly critical resource for the McGill and Montreal communities as the need for mental health services continues to grow.

Your impact

With additional donor support, we will be able to expand the research and training capacity of the clinic. Your support will help us:

- **Provide psychological services** to underserved members of the McGill and Montreal communities
- **Contribute to knowledge translation and dissemination** by hosting workshops and lectures on topics including assessment, intervention and clinical supervision
- **Provide self-help resources** on mental health and wellness
- **Provide new services for young people**, including group therapy programs and a summer camp for youth with mental health needs





Revolutionizing science learning

Support the *Centre for University Science Education*



The groundwork

With the explosion of computer-based information and tools such as generative AI, science course delivery and assessment methods must evolve and adapt to the rapidly changing demands of teaching and learning today. This will require innovations across the full spectrum of undergraduate learning activities, including lecture, laboratory, experiential learning and research.

Since its establishment in 2017, McGill's [Office of Science Education](#) has emerged as a leader and convenor of evidence-based pedagogy within the Faculty of Science.



Your impact

With donor support, we will build on the successes of the existing Office of Science Education, transforming it into the new **Centre for University Science Education**. This Centre will:

- Become a specialized home for the development, implementation and promotion of university-based science teaching and learning methods
- Develop teaching innovations that enable students to identify and address scientific problems and in doing so, embrace the challenge of tackling complex problems
- Establish a McGill-wide ecosystem for the incubation of new programming around science teaching, learning and outreach



Giving strategically

The Science Opportunities Fund

You can maximize the impact of your donation by giving through the **Science Opportunities Fund**.

This fund provides our Faculty with the flexibility to respond to emerging opportunities quickly and with impact, via mechanisms that include:

- Scholarships
- Professorships
- Emerging research initiatives
- Experiential learning opportunities for students



The result:
Partnering for impact

Your gift to the Faculty of Science will:

- Strengthen our integrated approach to the pressing challenges of our time
- Enable us to rally our collective strengths – in science and beyond – to face urgent global sustainability challenges
- Harness the power of data science and AI to benefit society
- Support mental health and well-being in an increasingly complex world
- Rethink university science education for the leaders of the future



With your philanthropic support, we can create:

Opportunities that open doors

Ensuring that no qualified student is denied a McGill education for financial reasons, while expanding the range of perspectives on campus.

Research that changes lives

Pushing the boundaries of knowledge and collaborating at the intersection of disciplines where solutions to global challenges will emerge.

Innovation that drives progress

Building a vibrant innovation ecosystem that brings creative ideas from the classroom or the lab to the marketplace and the community.

Education that shapes future-ready students

Training students to thrive as engaged citizens and leaders, while making a positive impact on the world around us.

McGill University is on land which has long served as a site of meeting and exchange amongst Indigenous peoples, including the Haudenosaunee and Anishinabeg nations.

We acknowledge and thank the diverse Indigenous peoples whose presence marks this territory on which peoples of the world now gather.

Make *your mark* today.



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giving.mcgill.ca/science