FOR INFORMATION **PUBLIC** **OPEN SESSION**

TO:	Academic Board
SPONSOR:	Professor Leah Cowen, Vice-President, Research and Innovation, and Strategic Initiatives
CONTACT INFO:	416-978-4984, vp.research@utoronto.ca
PRESENTER:	See above
CONTACT INFO:	
DATE:	April 8, 2025 for April 24, 2025
AGENDA ITEM:	3

ITEM IDENTIFICATION:

2024 Annual Report, Division of the Vice-President, Research & Innovation

JURISDICTIONAL INFORMATION:

The annual report for the Division of the Vice-President, Research and Innovation is considered by the Academic Board for information. (Academic Board Terms of Reference, Section 5.2.12)

GOVERNANCE PATH:

1. Academic Board [for information] (April 24, 2025)

PREVIOUS ACTION TAKEN:

This report is provided annually to the Academic Board.

HIGHLIGHTS:

In a year of exciting accomplishments at U of T, we continued to build on our legacy of discovery and innovation that has improved lives and expanded knowledge for nearly two centuries.

The Division of the Vice-President, Research & Innovation (VPRI) continues to diligently support the talent, creativity and collaboration of our researchers, innovators, entrepreneurs, and learners as they conduct worldclass research and innovation. Our 2024 Annual Report highlights these accomplishments and the impact of U of T's research enterprise by reporting on

key performance metrics. The report also focuses on important initiatives and service improvements we have implemented to support research and innovation.

The attached presentation provides key highlights. Please explore 2024.research.utoronto.ca to learn more about how we continue to facilitate research and innovation across our worldclass institution.

FINANCIAL IMPLICATIONS:

None.

RECOMMENDATION:

For information only.

DOCUMENTATION PROVIDED:

2024 VPRI Annual Report Presentation, Division of the Vice-President, Research & Innovation

Link to full online report: 2024.research.utoronto.ca

RESEARCH & INNOVATION

2024 Annual Report

UNIVERSITY OF TORONTO

DEFY GRAVITY

A MESSAGE FROM THE VICE-PRESIDENT

2024 gave us much to celebrate. University Professor Emeritus Geoffrey Hinton was awarded the Nobel Prize in Physics for his foundational machine learning discoveries that enable today's AI breakthroughs. We continued to excel in global rankings: for the second consecutive year we were ranked the most sustainable university in the world. And we signed crucial partnerships to further new initiatives, like the Grid Modernization and Testing Centre, that supports Canada's 2050 net-zero targets.

Guided by **U of T's Institutional Strategic Research Plan 2024–2029** the Division of the Vice-President, Research & Innovation (VPRI) advanced its mission to support, foster and promote the research and innovation activities of our community, in conjunction with our partner hospitals, sponsors, and public and private sector partners. From sustainability and bioinnovation solutions, to community-engaged initiatives that translate U of T discoveries into improvements to public health and civic life, we are delivering impactful solutions to today's challenges.

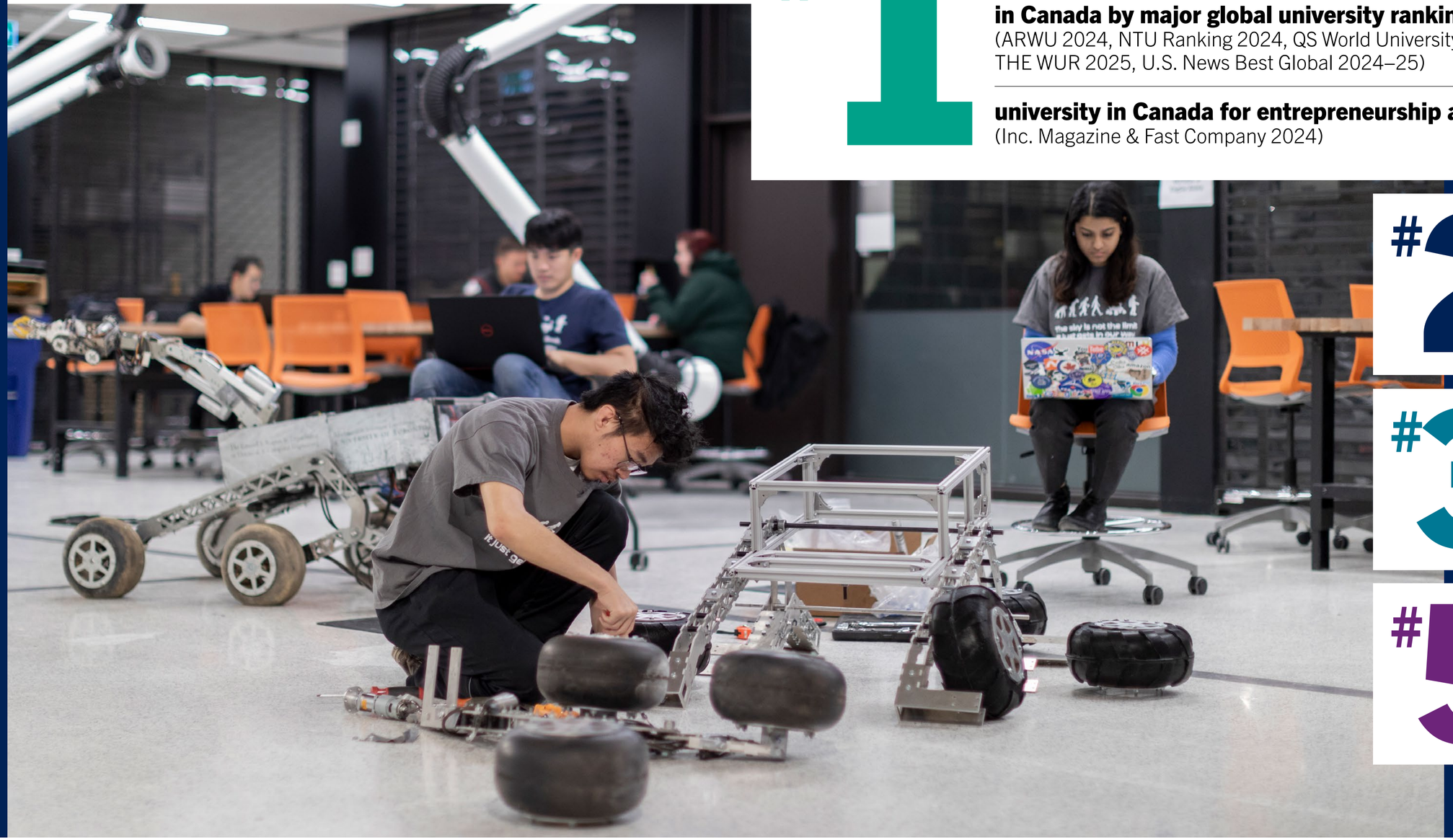
We have an ambitious year ahead as we equip U of T researchers with the critical supports they need to advance understanding and apply new knowledge. We will advance our commitments to equity, diversity and inclusion, advocate for increased supports for investigator-led research, and foster research and innovation that deliver real-world benefits to Canadians.

I want to thank the VPRI team for all their accomplishments in the past year.

Sincerely,

Professor Leah E. Cowen
Vice-President, Research and Innovation,
and Strategic Initiatives

U OF T'S RANKINGS



#1

in the world for sustainability for the second year in a row
(QS Sustainability Rankings 2025)

in Canada by major global university rankings
(ARWU 2024, NTU Ranking 2024, QS World University Rankings (WUR) 2025, THE WUR 2025, U.S. News Best Global 2024–25)

university in Canada for entrepreneurship and #13 globally
(Inc. Magazine & Fast Company 2024)

#2

most prolific university in the world for health sciences publications
(Nature Index 2024)

#3

among North American public universities
(THE WUR 2025)

#5

most cited university in the world
(Clarivate Analytics, InCites, 2020–24)

U OF T'S RANKINGS

#6 **university in the world for the number of highly cited articles (top 10% most cited)**
(Clarivate Analytics, InCites, 2020–24)

#14 **most cited university in public policy documents**
(Overton 2025)

#21 **university in the world**
(THE WUR 2025)

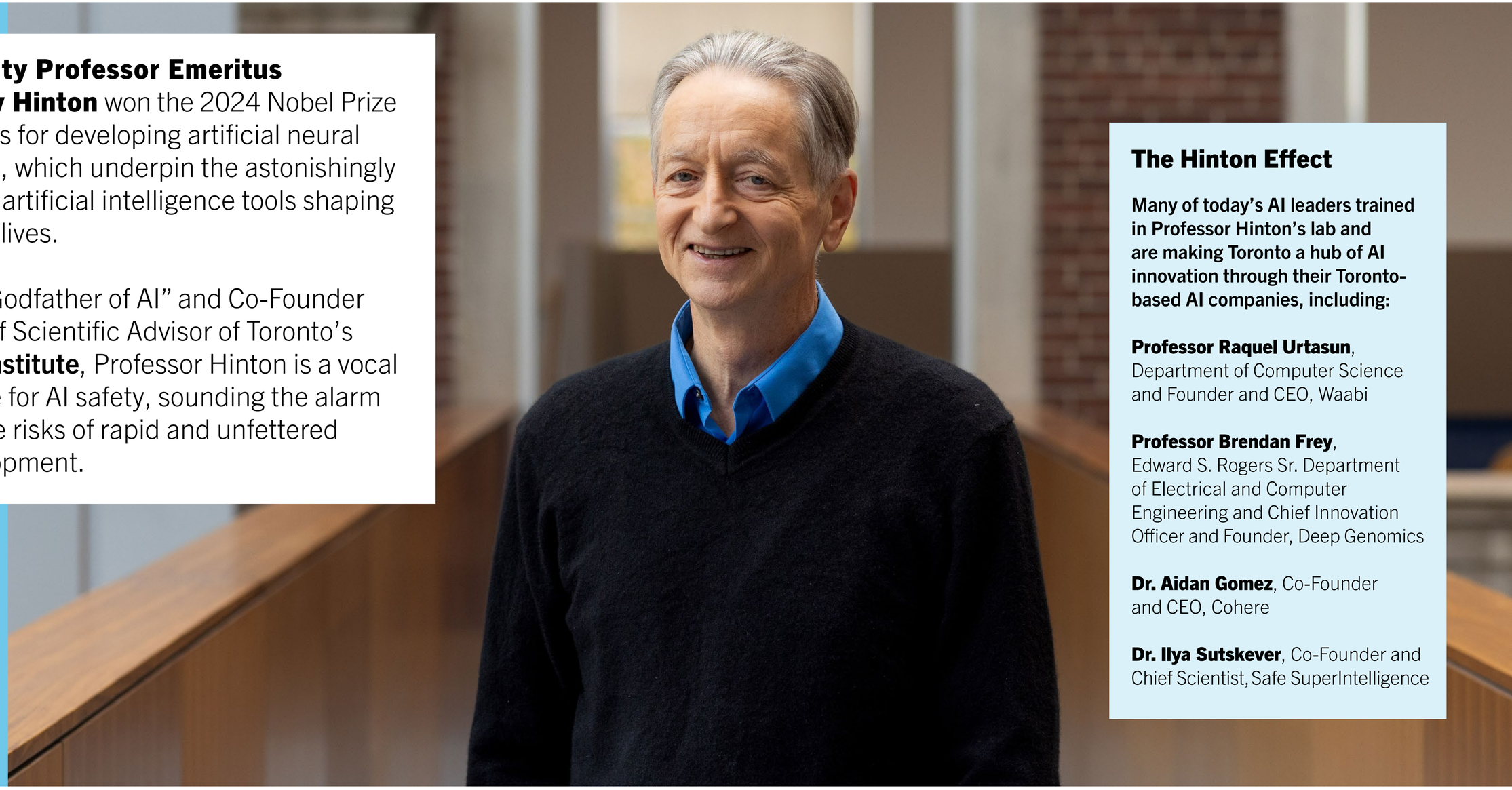
TOP 30 **in all major global university rankings**
(ARWU 2024, NTU Ranking 2024, QS WUR 2025, THE WUR 2025, U.S. News Best Global 2024–25)

2024 NOBEL PRIZE IN PHYSICS

Leading the world in AI and machine learning

University Professor Emeritus Geoffrey Hinton won the 2024 Nobel Prize in Physics for developing artificial neural networks, which underpin the astonishingly powerful artificial intelligence tools shaping our daily lives.

As the “Godfather of AI” and Co-Founder and Chief Scientific Advisor of Toronto’s **Vector Institute**, Professor Hinton is a vocal advocate for AI safety, sounding the alarm about the risks of rapid and unfettered AI development.



The Hinton Effect

Many of today’s AI leaders trained in Professor Hinton’s lab and are making Toronto a hub of AI innovation through their Toronto-based AI companies, including:

Professor Raquel Urtasun, Department of Computer Science and Founder and CEO, Waabi

Professor Brendan Frey, Edward S. Rogers Sr. Department of Electrical and Computer Engineering and Chief Innovation Officer and Founder, Deep Genomics

Dr. Aidan Gomez, Co-Founder and CEO, Cohere

Dr. Ilya Sutskever, Co-Founder and Chief Scientist, Safe SuperIntelligence

AWARDS & HONOURS

U of T's researchers were recognized and celebrated for being at the forefront of today's breakthroughs, reflecting our broad leadership across numerous fields of research, scholarship and creative practice.

165
international and major national research accolades received by U of T researchers in 2024

1
Nobel Prize in Physics

35
faculty elected as Fellows of Canada's national academies

22
faculty appointed Members or Officers of the Order of Canada

AWARDS SPOTLIGHT

Killam Prize in Social Sciences, Canada

Awarded annually to distinguished Canadian scholars in health sciences, natural sciences, engineering, social sciences and humanities.

- **University Professor Tania Li**
  Department of Anthropology

  For her research on rural land transformation and development policy in Asia.

Inaugural Paul Lévy Prize in Probability Theory, France

Awarded to a mathematician who has made outstanding contributions in probability theory and its applications.

- **University Professor Jeremy Quastel**
  Department of Mathematics

  For his research on the large-scale behaviour of interacting particle systems and differential equations.

PRESIDENT'S IMPACT AWARDS

The **President's Impact Awards (PIAs)** recognize contributions that emerge from academic scholarship and have fully realized, demonstrable impacts in any domain.

2024 WINNERS

- **Professor Alán Aspuru-Guzik**
  Faculty of Arts & Science

  For his pioneering work in the fields of artificial intelligence and quantum computing for materials discovery.

- **Professor Yvonne Bombard**
  Dalla Lana School of Public Health

  For her significant contributions in enacting national law against genetic discrimination, improving health care options for Canadians and advancing clinical practice and genomics research.

- **Professor Gillian Hadfield**
  Faculty of Law and Rotman School of Management

  For contributions impacting access to justice, innovative design for legal and dispute resolution systems in advanced and developing market economies, and governance for artificial intelligence.

  Professor Hadfield is also the recipient of the 2024 Carolyn Tuohy Impact on Public Policy Award.

- **University Professor David Jenkins**
  Temerty Faculty of Medicine

  For his studies on the health effects of food that have changed how the world makes healthy dietary choices.

- **Professor M Murphy**
  Faculty of Arts & Science

  For contributions that consistently move environmental justice research along a collaborative trajectory with Indigenous communities data practices, and policy-making.

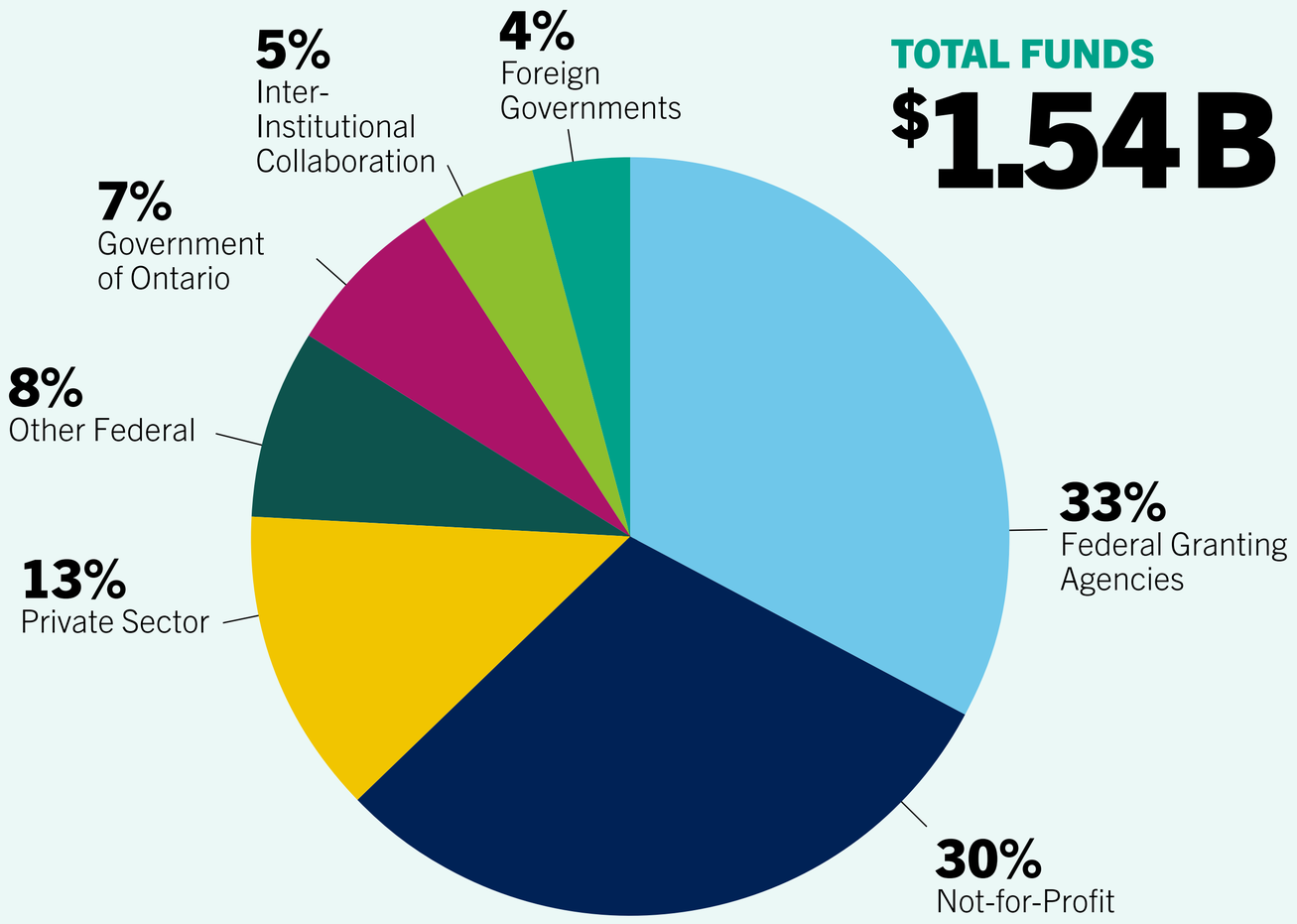
FUNDING

Powering research and innovation at U of T

U of T and partner hospitals are proud to be Canada's largest and top university research and innovation ecosystem. Our global impact improves lives as it powers the Ontario and Canadian economies. This would not be possible without investments from our funding partners that are critical to future prosperity and employment.

Explore Research By The Numbers to learn more about funding at U of T.

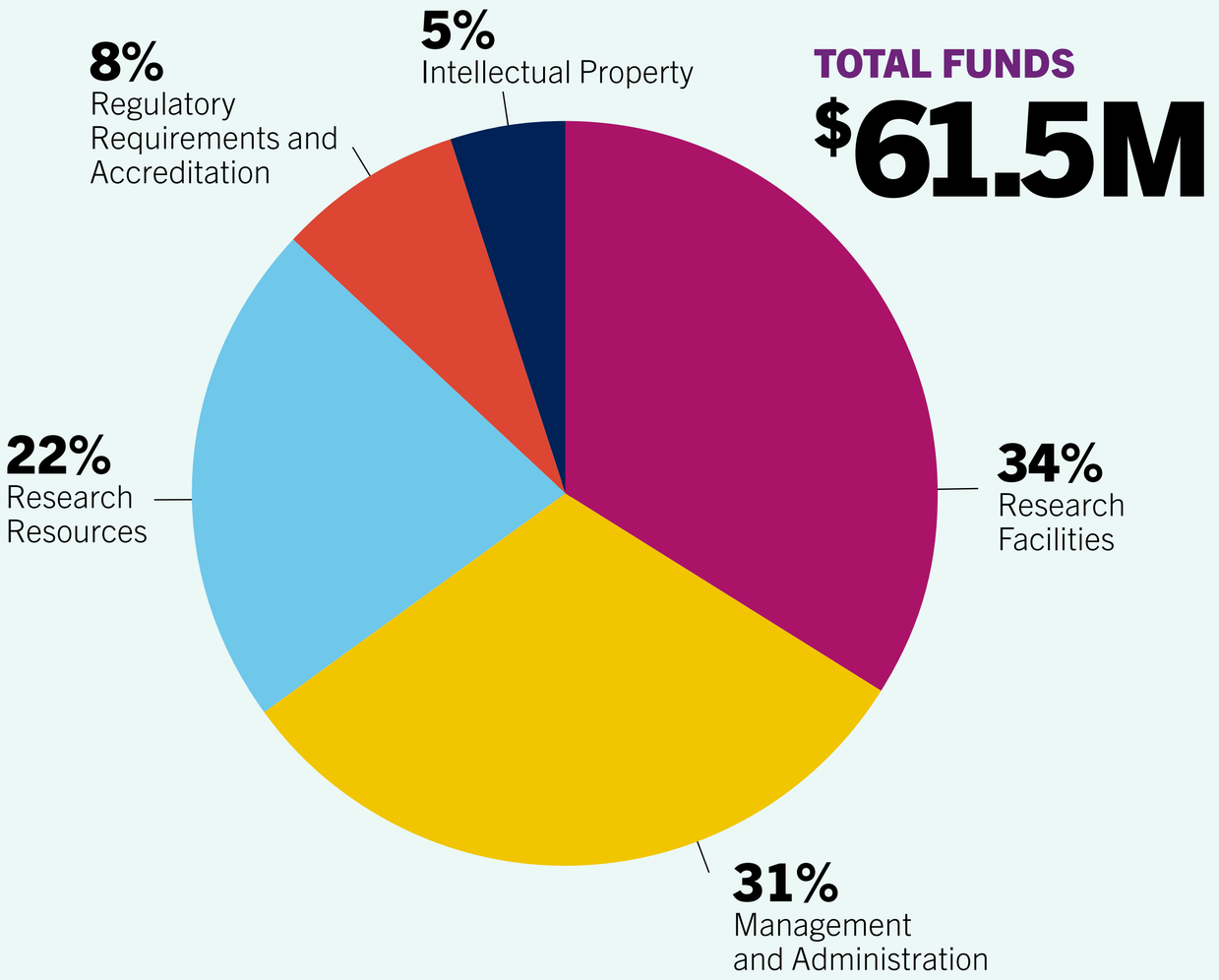
Research Funds Awarded to U of T and Partner Hospitals by Sector (2023–24)



FUNDING

The federal **Research Support Fund (RSF)** assists universities with the indirect costs of research such as the maintenance of modern labs and equipment, retaining administrative support staff, ensuring regulatory and ethical compliance and enhancing security to maintain a world-class research environment.

Research Support Fund Expenditures (2023–24)



CANADA RESEARCH CHAIRS

330 **Canada Research Chairs: U of T holds the most CRCs of any university**

The **Canada Research Chairs (CRC)** program helps U of T attract and retain top researchers. Through our **EDI Action Plan**, we are implementing strategies to meet federal targets for the representation of CRC's four designated groups by 2029.

In 2024, U of T surpassed our interim targets.

INNOVATION, COMMERCIALIZATION AND ENTREPRENEURSHIP

U of T is among the world's top 10 universities powering global innovation in technology, health care, sustainability and economic development.
(Clarivate 2025)

U OF T'S ENTREPRENEURSHIP ECOSYSTEM

TOP 5
in the world for university startup incubators

1,200+
venture-backed companies created

$12B+
funding raised in the past five years

12+
accelerators supporting 1,000+ startups across U of T

Subscribe to Deep Tech Download for the latest news on the innovative breakthroughs shaping our future

INNOVATION, COMMERCIALIZATION AND ENTREPRENEURSHIP

U of T-affiliated startups
U of T is Canada's leading engine for research-based startups and a global leader in transforming ideas into products and services that impact the world. In the past five years alone, our startups have created over 17,000 jobs.

Mississauga-based **HDAX Technologies** is developing targeted therapeutics for the treatment of brain cancers and neurodegenerative disorders, by selectively targeting the disease driver protein HDAC6 in the brain.

Phenomic AI is developing therapeutics that target the biology of solid cancers. They recently secured a $500M partnership with leading pharmaceutical company Boehringer Ingelheim.

Quantum Bridge is safeguarding companies from cyber threats with their quantum-safe technology. Their partnership with digital infrastructure company Eurofiber is creating quantum-safe communications solutions and secure global data transfers.

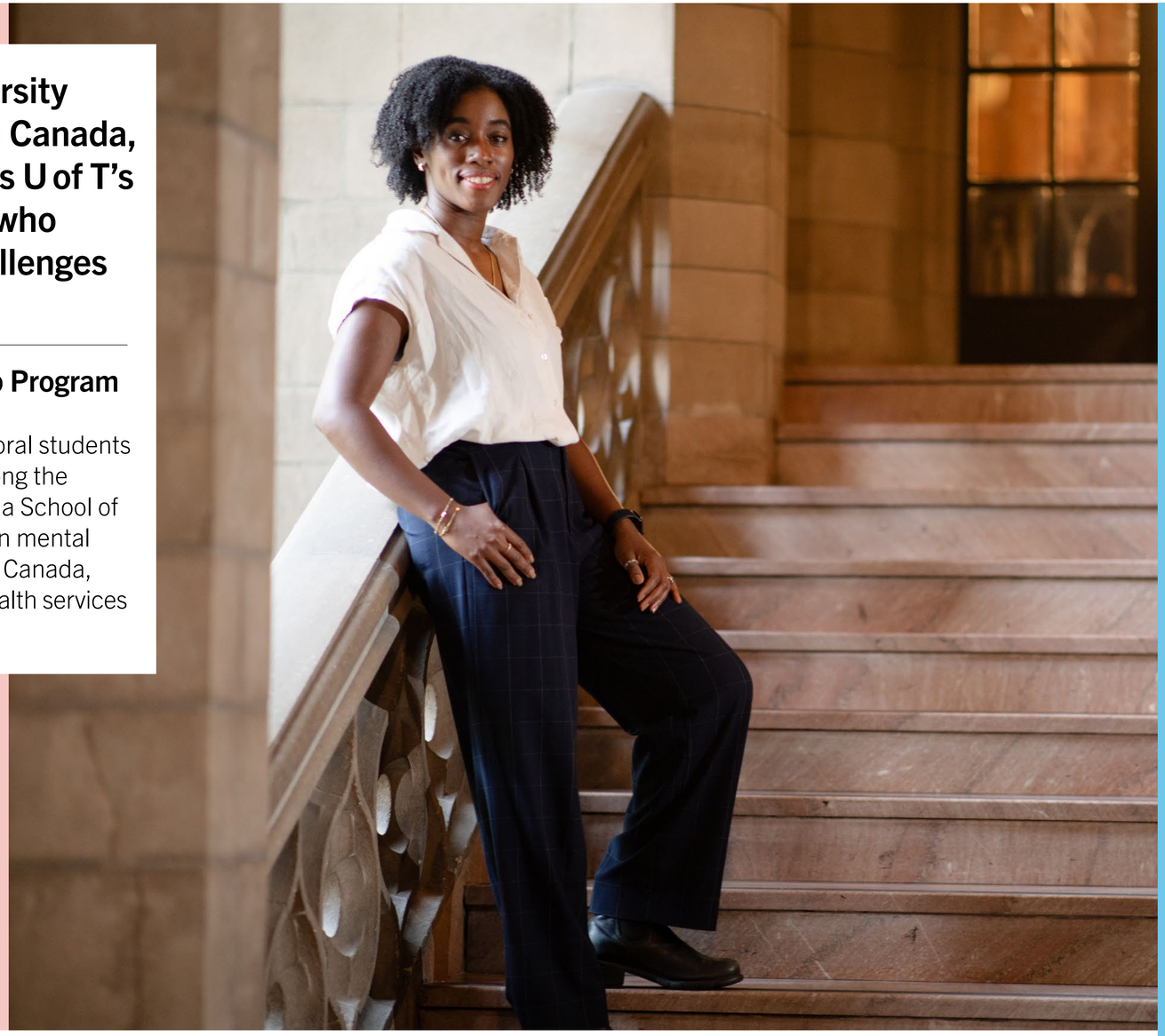
Structura Biotechnology is helping 10,000 scientists accelerate drug discovery. Their AI-infused software, CryoSPARC, helped discover and publish more than 2,200 new 3D protein structures in 2024 alone.

THE CONNAUGHT FUND

As the largest internal university research funding program in Canada, the Connaught Fund supports U of T's researchers and innovators who are working to solve the challenges facing our global society.

PhDs for Public Impact Fellowship Program

In 2024, the Program supported 15 doctoral students pursuing public impact scholarship. Among the recipients is **Mercedes Sobers**, Dalla Lana School of Public Health, whose research focuses on mental health disparities among Black people in Canada, with an emphasis on improving mental health services access and outcomes.



The Connaught Fund traces its origins back to the discovery of insulin at U of T and the renowned Connaught Laboratories that were the first to produce life-saving insulin.

$191M+
awarded to researchers since 1972

200
researchers supported by the Connaught Fund annually

$8.2M+
awarded annually to U of T faculty and trainees from the Connaught Fund and associated resources

SOLVING GLOBAL CHALLENGES

At U of T, we are committed to understanding today's world and creating impact by tackling the greatest global challenges.

This includes:

Amplifying the value created by research in the **social sciences and humanities**

Strengthening **civil society and democracy**

Pursuing **medical innovation** to promote health and wellbeing

Advancing **biomanufacturing** to address **infectious diseases**

Developing **AI technologies** as well as corresponding **ethical and legal frameworks**

Designing high-precision therapeutics with **regenerative medicine**

Creating **sustainable solutions** to address climate change

ARTIFICIAL INTELLIGENCE

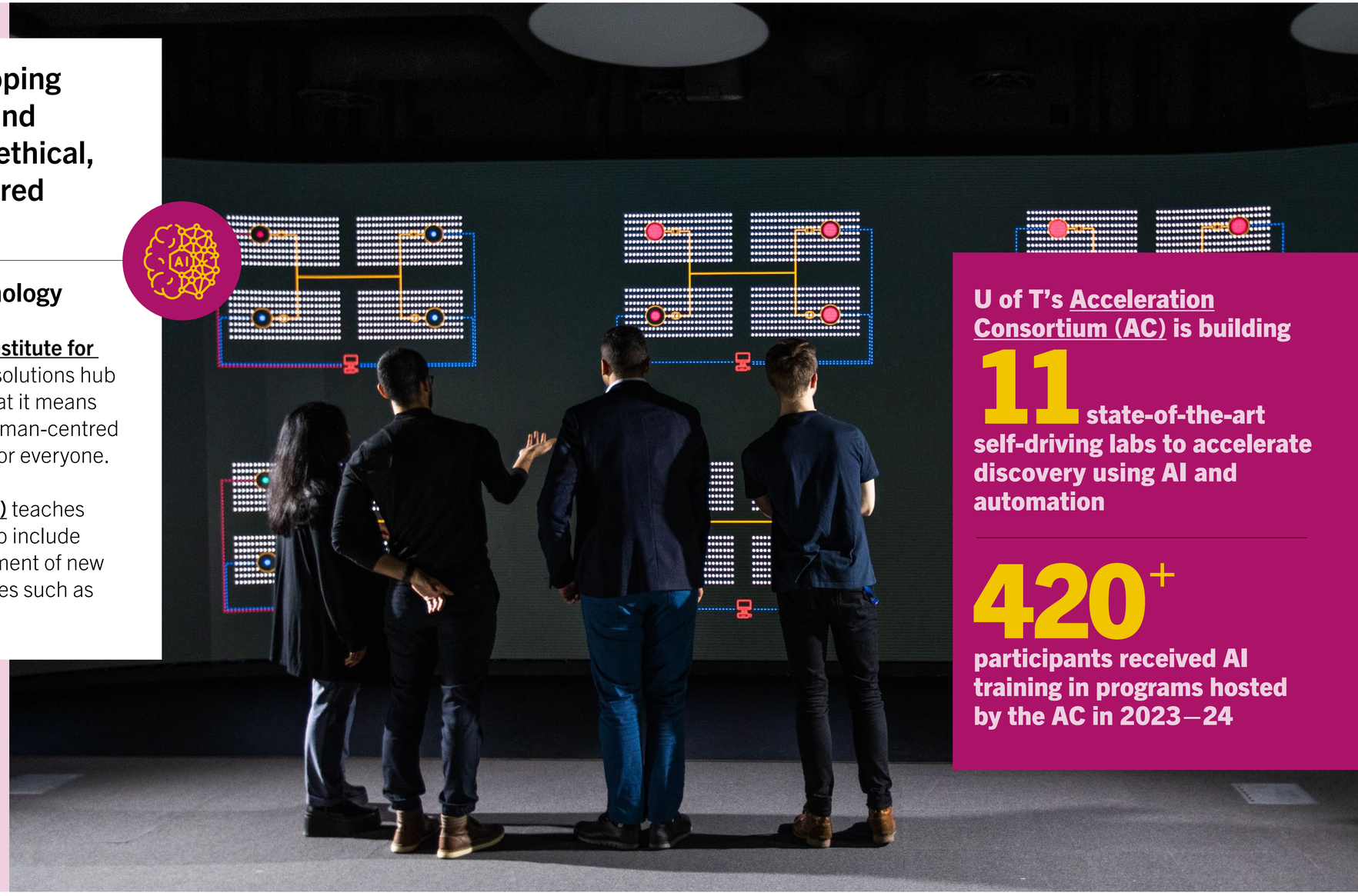
We are advancing the future of AI and its responsible use.

U of T is an AI powerhouse developing next-generation AI technologies and companies, while developing the ethical, legal and policy frameworks required to protect humanity.

Training students to create ethical technology

Launched in 2024, U of T's **Schwartz Reisman Institute for Technology and Society (SRI)** is a research and solutions hub dedicated to deepening our understanding of what it means to be human through integrative research and human-centred solutions that ensure technology improves life—for everyone.

SRI's **Embedded Ethics Education Initiative (E3I)** teaches undergraduate computer science students how to include ethical considerations in the design and development of new AI technologies. This includes grappling with issues such as AI safety, data privacy and misinformation.



U of T's Acceleration Consortium (AC) is building

11 **state-of-the-art self-driving labs to accelerate discovery using AI and automation**

420+

participants received AI training in programs hosted by the AC in 2023–24

REGENERATIVE MEDICINE

We are leading the development of precision therapeutics.

Precision therapeutics startups are commercializing U of T research discoveries.

BlueRock Therapeutics is fast-tracking to market a treatment for Parkinson's disease. Now a subsidiary of Bayer AG, BlueRock emerged from Toronto's regenerative medicine ecosystem and was supported by U of T's **Medicine by Design (MbD)**, a Canada First Research Excellence Fund initiative.

Liver disease is one of the top 10 leading causes of death in Canada. U of T researchers are applying regenerative medicine strategies that harness stem cells to regenerate damaged livers in people with end-stage liver disease.

$75M
invested in 190+ regenerative medicine research projects by MbD since 2015

1,100+
intellectual property patents filed by MbD investigators since 2015

SUSTAINABILITY

We are creating sustainable solutions to address climate change.

Advancing green energy with the U of T Grid Modernization Centre.

U of T's **Climate Positive Energy (CPE)** launched the **Grid Modernization Centre** in 2024 to provide state-of-the-art equipment and expertise needed to test, develop and commercialize green technologies before they are integrated with the grid.

Siemens, a leading supplier of electrical components to utilities, expanded their partnership into a multi-year agreement to continue working with U of T on projects including defending power utilities from cyberattacks.

#1
most sustainable university in the world out of more than 1,700 institutions across 95 countries

506
researchers are advancing 94 global sustainability projects supported by CPE (2022–24)

BIOMANUFACTURING AND INFECTIOUS DISEASES

U of T is investing in the future of public health in Canada by building facilities to help us respond to future health emergencies.

1. With nearly $10M from the Ontario government, and $35M received from the federal government, we are updating critical research infrastructure for the study of infectious pathogens.

2. $72M from the federal government is supporting four research programs in the **Canadian Hub for Health Intelligence & Innovation in Infectious Diseases (HI^3)**, bolstering the country's biomanufacturing capacity.

U of T's new BioHubNet will train

500+

students with industry-relevant skills, experiential learning and commercialization support to help them succeed in the biomanufacturing sector

STRENGTHENING SOCIETY AND DEMOCRACY

U of T is committed to strengthening civil society and democracy by creating spaces for open discourse and the crafting of solutions to disinformation and geopolitical challenges, while advocating for equity, diversity and inclusion.

Recognizing leadership in advocacy for equity globally

Professor Lynette Ong, Department of Political Science and the Munk School of Global Affairs & Public Policy, is the recipient of the 2024 **SSHRC Insight Award**. A renowned scholar of authoritarianism, contentious politics and development in China, her work addresses the workings of political repression.

Professor Patricia Romero-Lankao, Department of Sociology, UTSC, is one of two **Canada Excellence Research Chairs** at U of T. She is leading an $8 M, eight-year research program dedicated to ensuring justice and equity as Canada transitions to renewable energy sources. The program engages underserved, marginalized communities to ensure that the benefits and opportunities of sustainable solutions are equitably distributed.

200+ social justice leaders and activists completed leadership training from the School of Cities Leading Social Justice Collective (LSJC) program since 2021

78 projects exploring power, social justice and critical theory in digital humanities research supported by the Critical Digital Humanities Initiative (CDHI) since 2021

56 trainees provided hands-on digital humanities research experience and opportunities to build professional networks by CDHI since 2021

SOCIAL SCIENCES AND HUMANITIES

We are furthering the study of people, cultures and societies.

U of T is a global leader in social sciences and humanities and supports community-engaged research activities across Toronto and beyond.

Strengthening caregiver support in Nunavut's family services system

Professor Jeffrey Ansloos, Ontario Institute for Studies in Education (OISE), leads a team in collaboration with researchers at the **Umingmak Centre**, a child advocacy centre in Nunavut. His study identifies systemic challenges in Nunavut's child welfare system and recommends strategies to strengthen caregiver support.

Available in Inuktitut/English, the report, which directly engaged caregivers in Nunavut, will play a crucial role in improving Umingmak's services and shaping future programs for the local community.

2024 Global subject rankings

(*Times Higher Education* 2025)

9th in education

11th in psychology

16th in arts & humanities

22nd in law

24th in social sciences and business & economics

PURSUING MEDICAL INNOVATION

We are anchoring Canada's life sciences ecosystem.

Recognized among the top three life sciences hubs in North America, the Toronto Academic Health Science Network (TAHSN) provides dynamic leading-edge research, teaching and clinical care. The network links U of T and 14 academic hospitals ranked among the best in the world for research and impact.

Boosting the commercialization of medical innovations

In 2024, U of T collaborated with **University Health Network**, the **Hospital for Sick Children** and **Sunnybrook Research Institute** to pilot the **Entrepreneur in Residence (EiR)** program, which supports researchers to commercialize their work by connecting them with leaders in business and entrepreneurship.

The program, funded by the Intellectual Property Ontario (IPON) initiative, supports projects that have high potential for clinical impact and spin-off company formation, spanning areas ranging from regenerative therapies and medical devices to AI-powered clinical tools and apps for patient care.

U of T is ranked:

#2
most prolific university in the world for health sciences publications (Nature Index 2024)

#9
for medical and health out of 1,150 institutions globally (THE World University Rankings by Subject 2025)

SERVING THE U OF T COMMUNITY

The VPRI supports researchers across U of T's expansive research and innovation enterprise at every stage of their careers and on all three campuses. These activities reflect our **Core Research and Innovation Values**.

Funding Administration
Supporting research-related activities including proposal development, managing the funding life cycle and operationalizing research initiatives.

Safeguarding Research
Securing U of T's research facilities and digital infrastructure, consulting on security risks and helping researchers navigate funding agency security requirements.

Strategy, Advocacy and Communications
Promoting public awareness of U of T's research and innovation enterprise through strategic projects, government advocacy and communications initiatives.

Partnership Development and Coordination
Developing and supporting institutional initiatives and partnerships across divisions and with partner hospitals, industry and community organizations.

Oversight and Compliance
Ensuring U of T fulfills its ethical, legal and financial reporting obligations, from overseeing research ethics practices to managing lab inspections.

Research Facilities and Tools
Enabling access to high-performance computing resources, research discoverability tools and core facilities with cutting-edge infrastructure and lab space.

Training and Professional Development
Promoting researcher development and providing educational resources on technical, administrative and health and safety protocols.

IP, Commercialization and Entrepreneurship
Facilitating commercialization and patenting for U of T's IP portfolio and supporting U of T startups with 12+ accelerators.

RESEARCH & INNOVATION

research.utoronto.ca

UNIVERSITY OF TORONTO

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