



Rotman Institute  
of Philosophy

ENGAGING SCIENCE.

# ANNUAL REPORT 2023

PHILOSOPHY  
IN ACTION

# BREAKING BOUNDARIES



## Tackling Society's Greatest Challenges Through Interdisciplinary Collaboration

The challenges we face today, such as climate change, public health crises, an aging population or technological advancements, are incredibly complex and interconnected. Addressing them requires an approach that mobilizes knowledge and expertise from various fields and beyond the boundaries of academia. Only if we can break down disciplinary boundaries and foster collaboration and inclusivity, will we have a chance at tackling society's biggest challenges effectively.

Western's research institutes are designed for this exact purpose: they are hubs of interdisciplinary activity and innovation dedicated to addressing the world's greatest challenges. They create a welcoming space for researchers, where novel approaches to stubborn problems can thrive, and provide leadership to advance interdisciplinary excellence at Western and beyond.

# ROTMAN INSTITUTE OF PHILOSOPHY



## From the director

At the [Rotman Institute of Philosophy](#), we specialize in addressing deep and wicked problems that don't fall neatly into a single discipline. That's why our programs support interdisciplinary projects that merge philosophical inquiry and science to devise nimble responses to complex societal issues. Our workspace in the Western Interdisciplinary Research Building has been a hub and collision space for groups of scholars from diverse disciplines tackling some of the most difficult questions facing humanity.

In this report you will learn about some of the ways our researchers have put

philosophy into action in 2023, working on a wide range of challenges that run the gamut from ethical dilemmas in public health and synthetic biology to governments' use of AI to frontier research in physics.

Looking ahead, with Western's support and our global stature, the Rotman Institute will continue to pioneer interdisciplinary research. By harnessing the distinct capacities of philosophy in collaboration with experts from various disciplines, we will continue to forge novel solutions to pressing challenges.

**Mike Anderson**  
Interim director,  
Rotman Institute of Philosophy

■ 19

prestigious awards, including 3 Research Chairs, 6 Fellows of the Royal Society of Canada, 3 Distinguished University Professors, and 5 Faculty Scholars

■ 73.4K

in active external funding per PI (~ 33.4K per PI in tri-council funding)

■ 141

members total, including 63 faculty, 76 trainees, and 2

■ 13

new tri-agency grants (3.3% of all tri-agency grants held at Western)

■ 35M\*

in active multi-year funding

■ 518\*

grants held by members (303 external and 215 internal grants)

■ 192

161 publications were captured in InCites with an average category normalized citation impact 1.3 higher than the world average

citation counts were higher than or equal to 37% of the publications published in 2023 in the Web of Science database

scholars across 45 different countries/regions around the world cited these publications

87 publications were co-authored with one or more international scholars across 36 countries

■ 8

faculties and 16 departments are represented through members: Arts & Humanities, Social Science, Science, Health Sciences, Schulich, Information & Media, Law and Ivey

\*Data does not include grants located at or shared with other institutions or institutes.

# PHILOSOPHY & ETHICS OF AI



## Do androids dream of electric sheep?

Philip K. Dick's iconic 1968 novel sparked questions about the boundaries between organic and artificial life. Over 50 years later, AI and robotics have become increasingly integrated into various aspects of our daily life — from healthcare and education to transportation, entertainment and government. It makes it more important than ever for us to reflect on those boundaries and the use of AI: what principles should guide the behavior of artificial intelligence, especially when human lives and rights are at stake? How can we use and govern AI to enhance human well-being, address global challenges and ensure equitable access to AI's benefits?

Finding answers on how to manage these technologies will require transparent, accountable systems and policies that uphold human dignity. It requires us to explore and determine ethical guidelines to make sure AI helps people instead of hurting them.

Philosophy plays a pivotal role in encouraging critical reflection on societal values and the potential impacts of AI. Addressing these challenges through interdisciplinary approaches involving philosophy, ethics, technology and policymaking will help us navigate AI's complexities and guide its development for the benefit of all humanity.



## “We must act now”: team of researchers unveils widespread use of AI systems by Canada government agencies

Artificial Intelligence (AI) is rapidly transforming many aspects of our lives, raising questions about job automation, healthcare improvements, and the risks posed by technologies like deep fakes. Another area of growing concern is the increasing use of AI and automated systems by governments and its impact on society.

In Canada, governments increasingly rely on automated systems, yet there is no comprehensive documentation

on their usage or impact on people’s lives, according to [Joanna Redden](#), a professor at the Faculty of Media & Information Studies. Redden, a core member of the [Rotman Institute](#), emphasizes the lack of transparency in how public authorities utilize these systems: “It becomes really difficult for those of us on the outside to understand the implications of these systems and how they’re affecting us if we don’t even know where they’re being used.”

To shine a light on Canadian authorities’ use of AI and automated systems, Redden and a team of fellow researchers recently published Canada’s [first online database listing AI applications within government agencies](#). Through news reports, documents tabled in Parliament and access-to-information requests, the team identified more than 300 automated tools in use. The Canadian Tracking Automated (TAG) Register was developed with the help of the British [Pub-](#)

[lic Law Project](#), which published the first TAG register. “We have policymakers right now reviewing legislation and regulating so-called ‘high impact systems. We don’t know what those high impact systems are. They have not told us,” said Redden. “We need registries to develop effective oversight. Policymakers and the public need to be able to see how government and businesses are already using AI.”

### **Lack of transparency, lack of regulations**

To increase transparency, Redden and other researchers have long advocated for public, government-run registries detailing the use of AI and automated-decision systems. Public registries are already being used in some

cities around the world, including Amsterdam, New York, Helsinki and Nantes, France – but Canada has yet to follow suit.

In addition to a lack of transparency, Redden also voices her concerns about the absence of clear regulations governing AI systems in Canada.

While Canada’s federal government introduced its [Directive on Automated Decision-Making](#) and is currently finalizing the Artificial Intelligence and Data Act (AIDA) to address some of the concerns raised by citizens, academia and industry, the current draft does not go far enough, said Redden: “A major flaw in AIDA as of now is that it does not address government use. Also,

the directive on automated decision-making was supposed to make use of AI more transparent through impact assessments, but only 18 of these have been published to date.”

### **The dark side of AI-enhanced government systems**

While Canada’s federal government has focused on how AI can boost the country’s economy and improve the efficiency or quality of government services, it has barely scratched the surface of how AI might negatively impact the people receiving those services, said Redden.

Examples of flawed AI implementation leading to serious consequences for citizens are plentiful and grim.

A jarring example is one US-state's attempt to automate its unemployment system. In 2014, Michigan's unemployment insurance agency notified residents that they had committed unemployment fraud and needed to pay back thousands of dollars. A later audit revealed that MiDAS, the algorithm the agency was using to detect fraud, had flagged 40,000 people for fraud, with 93 per cent charged in error. While the agency said they repaid \$21 million, people had suffered long-term harms, such as damaged credit and lost homes. [According to an article in The Atlantic](#), 1,000 had to file for bankruptcy.

Other examples include biased facial recognition technology used in law enforcement and malfunctioning medical AI systems in hospitals.

To further look into the impact of AI systems on people, Redden is currently investigating case studies and documenting data harms to explore the effects of specific systems. One of the big challenges this type of work has revealed, said Redden, is that the existence of automated systems is often unknown until it is too late and the harm has been done. "Another project I've been involved in was look-

ing at where government agencies made the decision to pause or cancel use of systems. What we found in that research was that often people only become aware of systems when things go wrong, when they are seeking help with their case from legal aid organizations or other organizations," said Redden. "That's a huge shift in state citizen relations. Governments are rewriting the rules in ways that people can't even see or interrogate."

#### **Getting ahead of the curve through widespread public debate**

In addition to public registries and an improved regulatory framework, Redden would also like to see more research and public debate about the systems in use and their impacts. Rotman, she said, has taken important steps to increase public awareness through its 2023 Library Lecture Series on ethical issues in artificial intelligence.

"Once these systems are put in place, they often end up being used more widely than they were intended," said Redden. "We have an opportunity here to prevent the kind of harms that we see occurring in other countries, but we must act now." \*

**“Once these systems are put in place, they always end up being used more widely than they were intended,” said Redden. “We have an opportunity here to prevent the kind of harms that we see occurring in other countries, but we must act now.”**

**JOANNA REDDEN,**  
Faculty of Media & Information Studies



## 2023 Highlights

### Philosophy & ethics of AI

#### A year of growth

Once supporting topics in their early stages, the [Rotman Institute](#) now leads the dominating AI discourse.

Rotman core member [Mark Daley](#) has taken on the role of the university's first ever Chief AI Officer, a post that illuminates the growing importance of AI impact in our schools, workplace and research.

[Luke Stark](#) leads a SSHRC funded project to investigate the use of AI to predict homelessness. He and his co-investigators were awarded a Social Sciences and Humanities Research Council (SSHRC) grant of over \$200,000 to help explore the impact of these systems on the city of London's fight against homelessness."

[Carolyn MacLeod](#) hosted a three-day conference titled, "[\(Dis\)Trust and AI: Perspectives from Across Disciplines and Sectors](#)" funded by a large SSHRC grant that brought together over eighteen speakers and hundred attendees with diverse, multisectoral backgrounds featuring industry and academia.

Additionally, the Institute also sent out a call for a Postdoctoral Fellowship in AI in the fall of 2023. Dr. Andrew Buzzell was hired in the role beginning in early 2024. \*

#### 2023 Annual Lecture series: AI and Ethics

Each fall Rotman partners with the London Public Library and Western's Department of Philosophy to organize a four-part public lecture series on a theme of general interest or social importance.

The theme for this year's lecture series was "[Ethical Issues in Artificial Intelligence](#)". Over a series of lectures, speakers explored questions about Artificial Intelligence and its appropriate use as it overwhelms recent discourse about technology. They asked, "What is Chat GPT?", "Is AI ethical?", "Can it ever be 'trustworthy'?", and "How do we, or how should we understand and speak about AI?"

Three talks presented by Luke Stark (Western University), Catherine Stinson (Queen's University), Joanna Redden (Western University) were planned, as was a final panel session moderated by Jason Miller (CRC, University of Ottawa).

This event was held in person (every Thursday from October 4-26) at the Central Branch London Library. Attendance remained steady with recent years, seeing over hundred attendees with diverse backgrounds. Approximately 15 percent of attendees were Western and Rotman faculty, 33 percent were students/ trainees, and 52 percent were community members at large.

The four-part series acted as another catalyst of innovation and research, as even more events supporting the discourse have since emerged. \*

#### Rotman members in the news

Members such as [Mark Daley](#), [Luke Stark](#), [Joanna Redden](#) and [Carolyn MacLeod](#) appearing regularly as authorities in print, radio and events.

[Luke Stark](#) was regularly quoted as an expert during interviews on CBC News, CTV News, and Global Citizen, and CBC Radio in the discussions around AI and ethics, and the rise and use of ChatGPT.

[Jacob Shelley](#) was quoted and his expertise was sought in articles about healthcare privatization, alcohol guidance, and healthcare skepticism in both the BBC News and CBC News,

[Mark Daley](#), newly appointed as Western's first-ever Chief AI Officer, was featured in and was interviewed numerous times in the Toronto Star and Global News, and was interviewed by both CBC News and the London Free Press for his expert opinion. \*





MEDICAL & PUBLIC HEALTH ETHICS

## Public health and ethical dilemmas

The COVID-19 pandemic has not only reshaped our personal lives but also transformed public health policy on a global scale. Decisions surrounding vaccine and mandates, social distancing, and resource allocation have sparked profound societal debates on fundamental questions of ethics and public health priorities: When is it justifiable to limit individual freedoms for the sake of public health? How



should scarce medical resources, such as vaccines, be allocated? What criteria should guide public health priorities, especially during times of crisis?

Philosophers specializing in public health ethics have long grappled with these complex issues, applying moral principles to ensure fairness, justice, and respect for individual rights in public health policies and practices.

In tandem with public health ethics, medical ethics are concerned with the moral principles and standards governing patient care and medical research. Its main goal is to guide healthcare professionals in upholding the dignity and rights of patients, fostering health and preventing harm.

Together, these disciplines serve as essential guideposts in navigating the



complexities of healthcare practice and policy while upholding fundamental values of justice and respect. Interdisciplinary approaches involving philosophy, ethics, technology and policymaking will help us navigate AI's complexities and guide its development for the benefit of all humanity.

# The COVID-19 pandemic: what is the role of governments in protecting public health?

**An interdisciplinary think tank helps Western researchers explore what role the state should play in public health crises.**

The COVID-19 pandemic has been one of the most divisive issues of our decade. From lockdowns and school closures to vaccine mandates and travel restrictions: government policies enacted – or not enacted – created divisions between individuals, families and communities.

For School of Health Studies professor and [Rotman Institute of Philosophy](#) associate director [Maxwell Smith](#), views on public health measures all come down to one central question: what is the role governments should play in protecting public health?

“For many people, this was really the first time they were considering this question. And for people who were already thinking about this, the pandemic might have fundamentally changed their views,” said Smith. “We are at a critical point where we really need to examine how governments have and should intervene during pandemics, or any other public health crisis.”

To explore this question with interdisciplinary scholars across Western University, Smith started a think tank supported by the institute, which met in 2022 and 2023.

To address a wide array of questions in public health policy from multiple angles, the think tank brought together researchers from across Western with expertise in a wide range of areas, including public health, ethics, information and communication, social inequities and law. The team tackled complex issues such as the use of coercion in protecting public health or how our experience during the pandemic has shaped the way we see gov-

ernments play a role in other pressing societal issues, such as climate change.

Think tanks across [Western Research Institutes](#) have brought forth high-impact research questions and led to major funding to address some of society’s most difficult and pressing challenges. This one was no exception, said Smith. Think tank meetings led him to apply for - and become - Western’s first [Chair in Applied Public Health by the Canadian Institute of Health Research](#). The position comes with \$1.15 million in funding, which Smith will use to continue working with members of the think tank to advance research about the role of the state in post-pandemic public health.

In addition to enhancing research and increasing knowledge, Smith said his motivation for starting this think tank was to bring people across disciplines together to work on shared challenges and establish Rotman as a hub for transdisciplinary innovation: “There are areas like AI and ethics, where it seems like everyone on campus is a little bit involved. By having a formal think tank within an institute, people can say, ‘Oh, folks thinking about ethical issues in public health, that’s over at Rotman!’ It solidifies Rotman as the location where those conversations are happening.”

It may seem trivial to some, but having an organization, a place specifically designed for providing a research environment that expands on disciplinary

strengths by enabling the coming together of people and by facilitating the exploration of unique perspectives is valuable and empowering, said Smith.

***“The people I collaborate with that come to Rotman and have these discussions, they’re not as familiar with Rotman because they’re just coming in for think tanks. They tell me how refreshing it is and this is what a university should be like.”***

“Honestly, the people I collaborate with that come to Rotman and have these discussions, they’re not as familiar with Rotman because they’re just coming in for these think tanks. They tell me how refreshing it is and that this is what a university should be like.”

Things are looking up through this mechanism to advance thinking of important societal issue like the role of governments in public policy, but also to benefit researchers and partners in their quest to contribute in a more interdisciplinary and collaborative way. ✨



## Bridging the gap: Western and Cambridge researchers connect ancient philosophers and clinicians

**A new collaborative initiative seeks to bring together philosophers and clinicians by creating real-world collision spaces.**

Researchers at Western and Cambridge University have joined forces to bridge the longstanding gap between ancient philosophers and clinicians. The initiative seeks to create novel spaces where ancient philosophers and clinicians can meet face-to-face to discuss how these two disciplines might benefit from each other.

“You might think this happens all the time, but it’s not at all the case. It’s not completely new that clinicians draw from ancient philosophy in their work. What is completely new is that we all get into the same room,” said [Georgia Mouroutsou](#), professor in the Department of Philosophy at King’s College.

In partnership with Cambridge University’s [James Warren](#), Mouroutsou has taken active steps in 2023 to turn her dream of a real-world collision space into reality. Warren and Mouroutsou have started planning an international conference to bring together ancient philosophers and clinicians. Travelling between Europe and Canada, Mouroutsou has already recruited high-profile researchers, such as clinical psychologist [Tim Dalgleish](#), the director of the Cambridge Clinical Research Centre for Affective Disorders, or psychiatrist and philosopher [Thomas Fuchs](#). She has also shared her vision with local practitioners at an event for Schulich clinicians and is co-leading an application for a British grant for a series

of pilot events with clinicians at Cambridge.

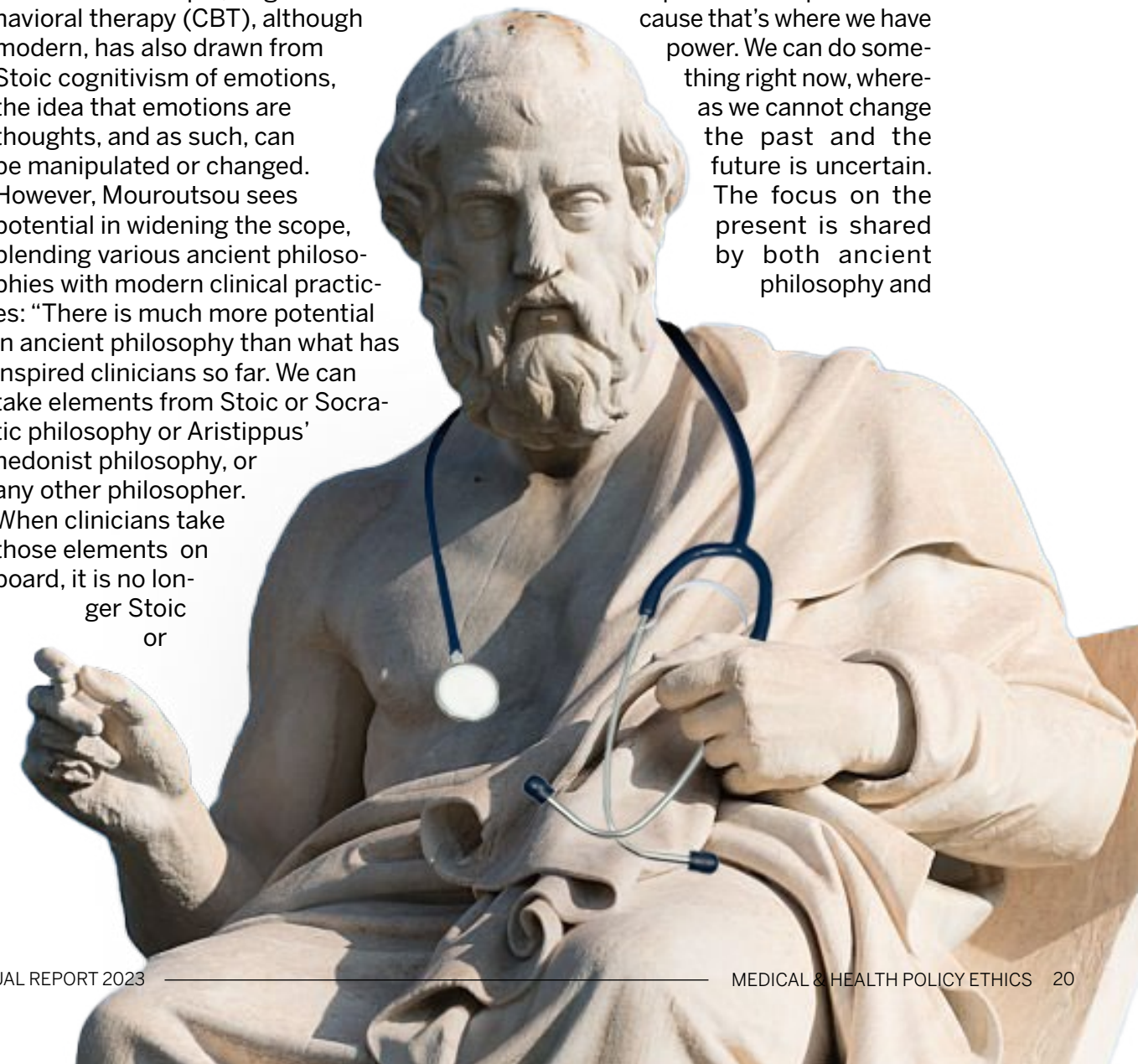
Her own background in both philosophy and psychology sparked the initiative: “I was driven by the vision of ancient philosophy taking the lead by harnessing its field -- in particular ethics as ‘therapy of the soul’ -- to enhance the therapy of depression that has been characterized ‘the illness of our era,’” she said.

Psychotherapy has long drawn from ancient philosophy, particularly Stoicism, for its approach to emotional self-regulation. For example, Cognitive-behavioral therapy (CBT), although modern, has also drawn from Stoic cognitivism of emotions, the idea that emotions are thoughts, and as such, can be manipulated or changed. However, Mouroutsou sees potential in widening the scope, blending various ancient philosophies with modern clinical practices: “There is much more potential in ancient philosophy than what has inspired clinicians so far. We can take elements from Stoic or Socratic philosophy or Aristippus’ hedonist philosophy, or any other philosopher. When clinicians take those elements on board, it is no longer Stoic or

any other philosophy. I want to make it very clear that ancient philosophy is not to be prescribed. That is dangerous or incompetent, or both. When a person needs clinical help, they should not grab philosophy books, instead.”

Having dabbled in various schools of thought herself, Mouroutsou came across what she thinks will be the perfect theme for the first interdisciplinary get-together: “The Therapeutic Focus on the Present: Dialogue Between Ancient Philosophers and Modern Clinicians”.

“The present is important because that’s where we have power. We can do something right now, whereas we cannot change the past and the future is uncertain. The focus on the present is shared by both ancient philosophy and



modern clinical approaches,” said Mouroutsou.

In a separate work, her hypothesis, “the plasticity of temporal attention”, inspired by Marcus Aurelius, is that our ability to focus on different time periods is plastic: We can focus on long periods of time (the present week, month or life) or the immediate present, depending on our context and state, with the latter being a skill that is often compromised in depression. She is hopeful that the hypothesis can help both depressed and non-depressed people regulate their emotions, but this depends on scientists and clinicians evaluating it first.”

While the format and list of attendees for the conference are taking shape, Mouroutsou and Warren are still exploring the broader scope of their endeavor. “This is uncharted territory. We need to see how this first meeting goes and what comes out of the event. Whether we create a platform with ancient philosophy texts translated for clinicians or

focus on developing individual relationships, or hold a series of conferences, remains to be seen,” said Mouroutsou.

One thing, though, is for sure. Her newfound home at Rotman has provided her with much needed inspiration and support.

“I’ve dedicated years to fostering the vision and the collaboration with clinicians, working towards a goal that, at times, seemed impossible for an individual without expertise in clinical research and without institutional backing,” said Mouroutsou. “I have been with Western for a while but I’m relatively new to the Rotman institute. Finding a home for this endeavor at Rotman has been truly a dream come true. Its interdisciplinary community of experts is ideal for further establishing this undertaking at Western and growing the collaboration with Cambridge. This undertaking requires a global village and a home, an esteemed research institution that will embrace it as one of its priorities.” \*

**“I’ve dedicated years to fostering the vision and the collaboration with clinicians, working towards a goal that, at times, seemed impossible. Finding a home for this endeavor at Rotman has been truly a dream come true. Its interdisciplinary community of experts is ideal for further establishing this undertaking at Western and growing the collaboration with Cambridge.”**

**GEORGIA MOUROUTSOU,**  
Department of Philosophy, King’s College

## Frontier research in physics

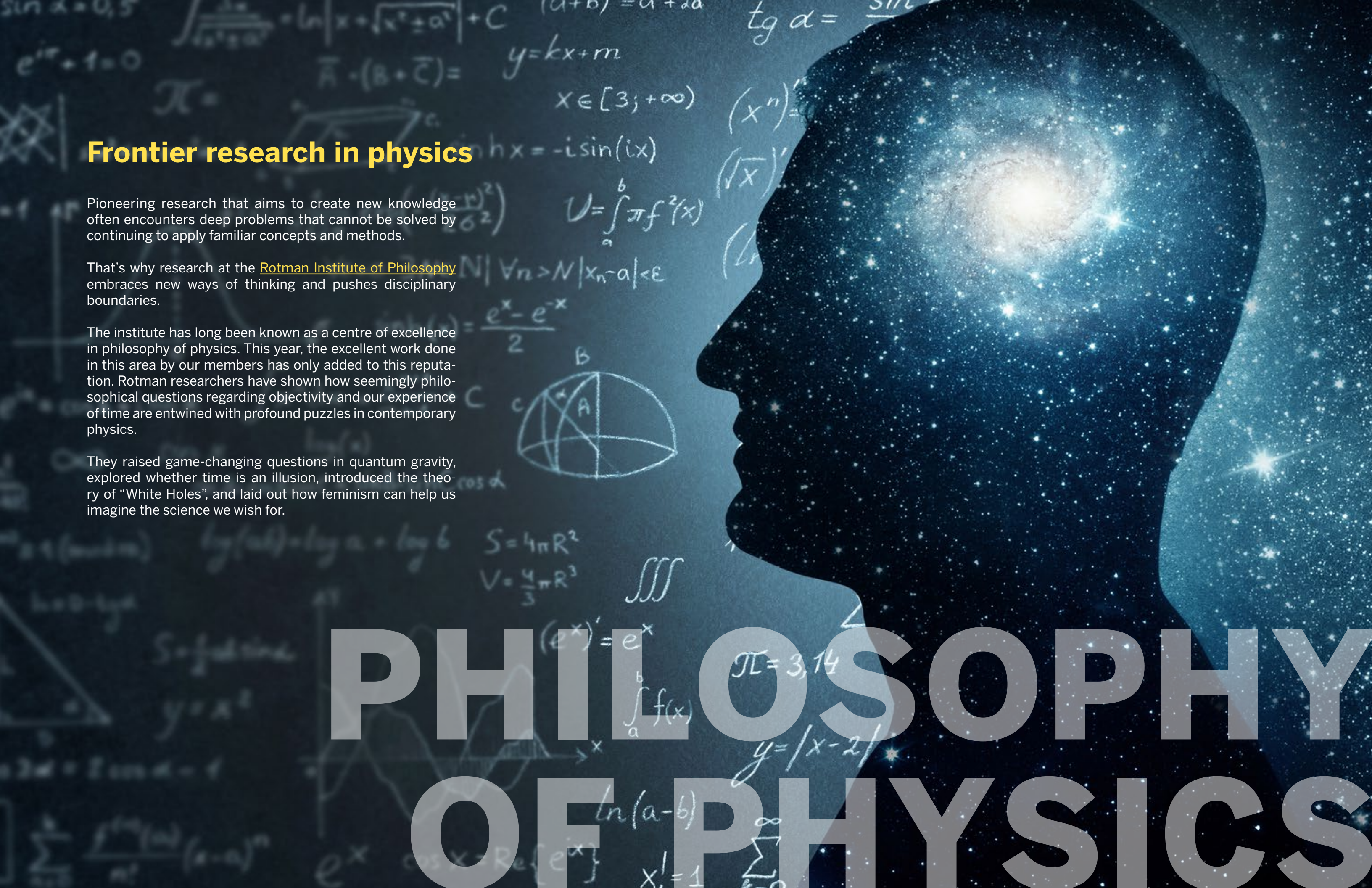
Pioneering research that aims to create new knowledge often encounters deep problems that cannot be solved by continuing to apply familiar concepts and methods.

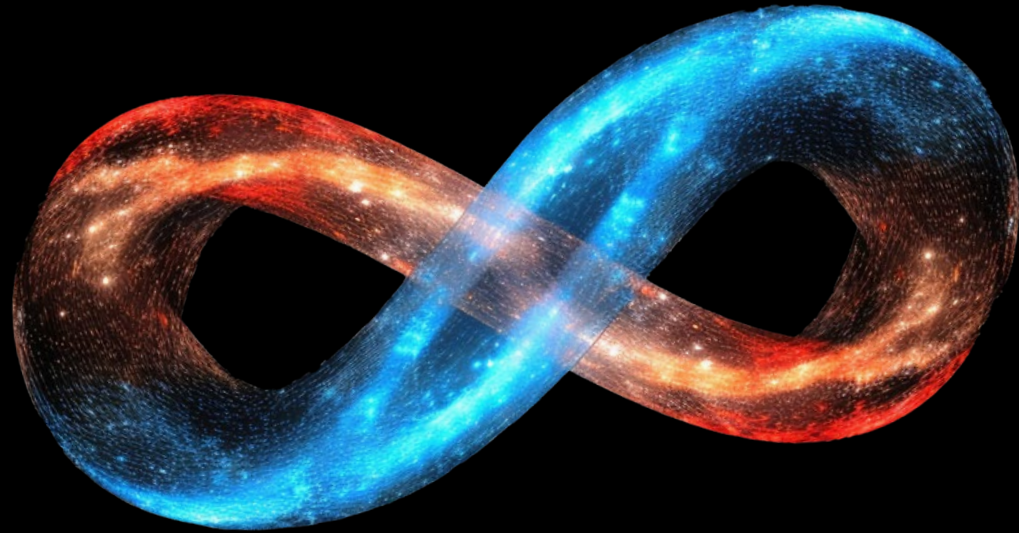
That's why research at the [Rotman Institute of Philosophy](#) embraces new ways of thinking and pushes disciplinary boundaries.

The institute has long been known as a centre of excellence in philosophy of physics. This year, the excellent work done in this area by our members has only added to this reputation. Rotman researchers have shown how seemingly philosophical questions regarding objectivity and our experience of time are entwined with profound puzzles in contemporary physics.

They raised game-changing questions in quantum gravity, explored whether time is an illusion, introduced the theory of "White Holes", and laid out how feminism can help us imagine the science we wish for.

# PHILOSOPHY OF PHYSICS





## 2023 Highlights

### Philosophy of physics

#### The Quantum Information Structure in Spacetime (QISS) grant

In 2023, the [Rotman Institute](#) was one of three partners in a \$4.6M grant for the Quantum Information and Structure of Spacetime (QISS) project.

The Rotman Institute is a hub for the [Quantum Information Structure in Spacetime](#) (QISS) grant, an interdisciplinary consortium funded by the John Templeton Foundation. [Carlo Rovelli](#), Distinguished Visiting Fellow at the Institute, leads the grant, alongside institute members [Francesca Vidotto](#) and [Chris Smeenk](#).

The grant brings together physicists, experimentalists, and philosophers to make progress on one of the fundamental challenges in contemporary physics: finding a quantum theory of gravity. Emerging as a group of 12 co-investigators (physicists, experimentalists, and philosophers) located at three hubs, the consortium now consists of 18 nodes representing various international research institutes and universities and continues to grow in membership and activity.

In 2023, QISS's virtual seminar offerings picked up momentum. Nine new 2023 seminars are currently available online with one featuring Rotman member Markus Muller.

Through funding events, supporting postdoctoral fellows, and bringing leading researchers to London, the grant has helped Rotman to remain a main location for collaborations between philosophers and physicists pursuing questions of the nature of space, time, and information, and for those who seek to make progress on one of the fundamental challenges in contemporary physics: finding a quantum theory of gravity. \*

#### Meetings of great minds: Rotman conferences in 2023

The [Rotman Institute](#) serves as a catalyst, uniting researchers across the world from diverse backgrounds to address challenges at the intersection of philosophy and physics.

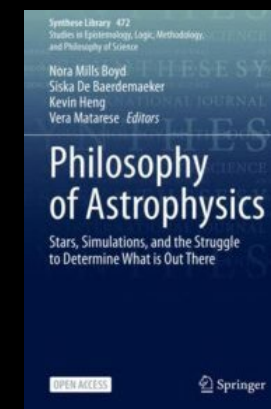
In May 2023, the Rotman Institute hosted the annual Philosophy of Physics Conference titled "[Foundations of Quantum Field Theory](#)". The conference, funded by a SSHRC Connection grant award to [Chris Smeenk](#), brought together philosophers and physicists from all over North America. This conference was held in tandem with the annual Philosophy of Logic, Math and Physics Graduate Conference, which featured keynote speaker [Jenann Ismael](#) of Johns Hopkins University.

In November, the Rotman Institute hosted the [Cosmology and Quantum Gravity Beyond](#)

[Spacetime Conference](#), organized by [Chris Smeenk](#) and [Francesca Vidotto](#) of the Rotman Institute, and [Nick Huggett](#) of the University of Illinois. The three-day conference saw speakers and attendees from Canada, the United States, the United Kingdom and Europe. Feraz Azhar of the University of Notre Dame, Jamee Elder of Harvard University, Katie Mack and Lee Smolin of the Perimeter Institute, and Sean Gryb of the University of Groningen were among key presenters. \*

#### First standard resource on philosophy of astrophysics

A new book underscores the pioneering work being done at Western in the philosophy of astrophysics and in the training of experts shaping the emerging field.



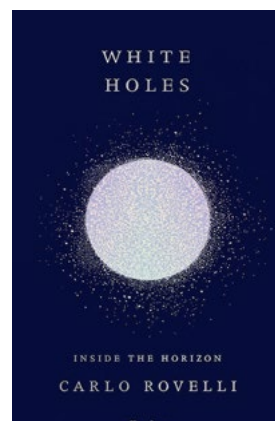
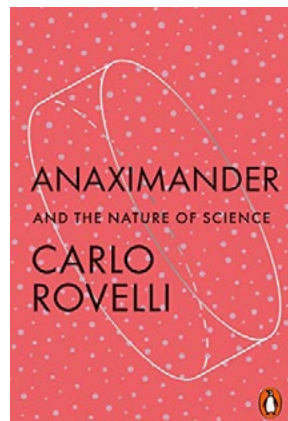
*The Philosophy of Astrophysics: Stars, Simulations, and the Struggle to Determine What is Out There* is the first edited collection of its kind. Positioned as "the first standard resource on the philosophy of astrophysics," the book features a paper by Western philosophy professor [Chris Smeenk](#), associate di-

rector of the Rotman Institute of Philosophy, and physics and astronomy professor [Sarah Gallagher](#), director of the Institute for Earth and Space Exploration (Western Space).

*(continues on next page)*

**“The Rotman Institute really is a special place for philosophy of physics. There are only few places in the world where you have postdoctoral research in philosophy and in philosophy of science in one place. It’s one of those places young researcher come to and do really creative work.”**

**Francesca Vidotto,**  
Rotman Associate Director *Quantum Information Structure of Spacetime*



Graduates Melissa Jacquart, MA'12, PhD'17, Marie Gueguen, PhD'19, and Cameron Yetman, MA'21, also contributed to the volume, which was created for scholars in the field looking to deepen their knowledge, and for philosophers and scientists seeking a basic understanding of the main issues in the philosophy of astrophysics.

“The number of people connected to Western involved with this book is a testament to the real sense of community developing here between our astronomers and astrophysicists and to the work that’s possible through the Rotman Institute,” said Smeenk. “I’ve been pushing for a while now that there’s really interesting philosophy to be done in astrophysics and cosmology, so it’s great to see a group of junior scholars taking this concept and running with it.” \*

### **Carlo Rovelli publishes two new buzz-worthy books**

Rotman member and renowned theoretical physicist [Carlo Rovelli](#) published two books in 2023, *Anaximander* and *White Holes*.

In *Anaximander*, Rovelli argues that a little-known Greek philosopher invented the idea of the cosmos. In *White Holes*, he explores the hypothesis that black holes can transform into white holes, the hypothetical inverse of black holes where matter cannot enter but will eventually leave.

Reviews of *Anaximander* have been published in *The Guardian* and *The Times*, and Rovelli continues to travel internationally, with a busy television interview schedule. \*

### **A stellar year**

[Emily Adlam](#), a Rotman postdoctoral associate in 2023, had a stellar year. She published eight articles, has been hired as an assistant professor of physics at the Schmid College of Science and Technology at Chapman University, and [won the 2023 Blaumann Prize](#). The award consists of 20,000 Euro and a sculpture from a renowned Italian artist. It is given to a young scholar for a scientific or philosophical work that advances the understanding of how nature works. \*

### **Winning essay: imagining the science we wish for**

Rotman associate director [Francesca Vidotto](#) won best essay in the 2023 [FQxI's Competition](#) and was awarded \$10,000.

The contest invited creative and thought-provoking essays addressing science itself by considering the questions: To what degree is the science we have today necessarily the way it is versus contingent on the particular history and human societies in which it originated? What could a science free of prejudice and bigotry have looked like? What can it look like in the future? And how could the process of science be better?

[In her prize-winning essay](#) Vidotto considers the question of how science can be different from the standpoint of women in science. She reviews the changes this perspective has brought to science in past decades and highlights the conceptual tools that feminism can offer to imagine the science we wish for. According to Vidotto, the case of women in science provides inspiration to support other groups that are marginalized in scientific institutions and outlines a new and desirable future of better science. \*



Rotman postdoc Emily Adlam was honoured with the 2023 Blaumann Prize.

**In her prize-winning essay Rotman associate director Francesca Vidotto considers how science can be different from the standpoint of women in science and highlights the conceptual tools that feminism can offer to imagine the science we wish for.**

## Towards an equitable, sustainable future

Bioethics and environmental ethics share foundational commonalities rooted in the ethical consideration of living beings and their environments. Both fields emphasize the interconnectedness of life systems, our moral responsibility towards the world we live in, and the need to consider the long-term impact of our actions.

These disciplines address critical issues of fairness and justice, focusing on the equitable treatment of individuals and communities, and the fair distribution of resources and the impacts of climate change. Questions in these fields often involve overlapping concerns from diverse areas of study, including philosophy, life sciences, biotechnology, public health, medicine, public policy, law and theology.

As a result, the complex challenges bioethics and environmental ethics address require an interdisciplinary approach to shape policies, practices and societal values that promote a healthier, more equitable world for future generations.







## Unraveling the complexities of synthetic biology: a bottom-up approach to governance and understanding

**What do meatless burger patties, a novel diabetes drug and a biological nitrogen fertilizer for corn have in common? All these innovations were created in the last twenty years using synthetic biology tools.**

Synthetic biology focuses on redesigning biological organisms, such as bacteria, plants and even humans, to give them new capabilities. Researchers and companies worldwide have been deconstructing and reconstructing biological cells and processes to develop inventions with significant practical benefits. Synthetic biology has already changed our world as we know it and can be a powerful tool in tackling complex global challenges, such as climate change, hunger or incurable diseases. However, with this immense potential comes significant responsibility. Concerns about the accidental release of genetically modified organisms, the misuse of biological weapons, and the ethics of human enhancement underscore the need for careful governance.

Traditionally, the governance of synthetic biology has relied on expert opinions and risk assessment frameworks that evaluate innovations in isolation, often ignoring the complex interplay between science, technology, and society. To address this shortcoming, a team of interdisciplinary researchers is pioneering a new project to establish a more comprehensive model for regulating and understanding the fast-evolving field of synthetic biology.

“Synthetic biology is a deeply social enterprise composed of a complex network of actors. Our approach involves mapping this network and understanding the motivations, concerns and values of its participants,” explains philosophy professor [Eric Desjardins](#). “By identifying how values unite or separate these actors, we can propose

a new method for aligning community needs, synthetic biology projects and community values.”

The inspiration for this project came out of a long-standing reading group at the [Rotman Institute](#), led by Desjardins, who is a former associate director of the institute. The group included Rotman members [David Edgell](#), [Kathleen Hill](#) and post-doctoral scholar [Derek Os-wick](#). Together, they discovered a shared interest in examining synthetic biology through the lens of actor-network theory, a social science framework that argues that society, organizations, ideas and other elements are shaped by interactions between actors within diverse and constantly evolving networks.

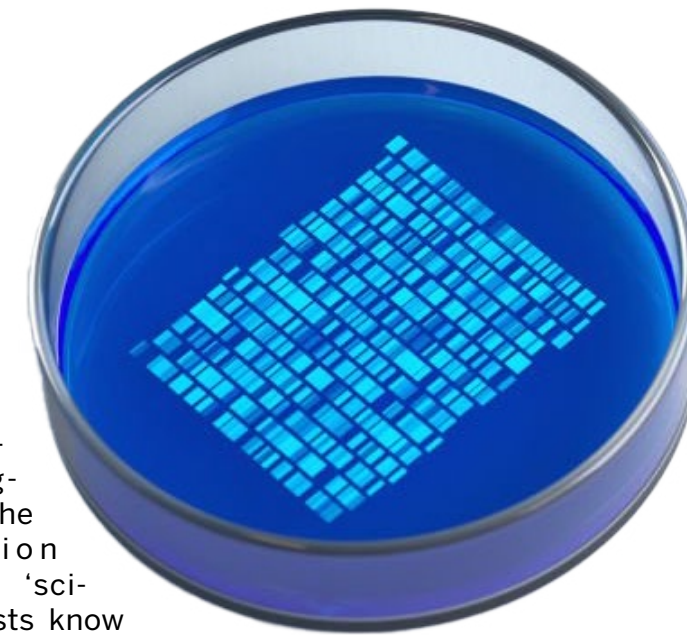
In addition to their research on anticipating and responding to the societal impacts of synthetic biology, Desjardins emphasizes the importance of incorporating diverse perspectives and values: “We aim to foster discussions that are not solely guided by experts and policy-makers but are also informed by those who will ultimately use synthetic biology products. It’s a bottom-up approach

**“Rotman provides a unique space for collaboration, allowing us to address highly relevant problems that don’t fit neatly within academic boundaries.”**

that challenges the notion that ‘scientists know best’ and that public opposition is rooted in ignorance.”

The group’s long-term objective involves selecting a specific case study to further explore the local impact of synthetic biology implementations. By engaging with local communities affected by these projects, the team hopes to gain insights that can inform effective and inclusive governance and help articulate community concerns.

Currently, Desjardins and his collaborators are seeking funding to support their vision. A [Rotman catalyst grant](#) supported the development of a large funding proposal, spearheaded by an interdisciplinary team of biologists, biochemists and philosophers of science and technology from Western and other institutions. Desjardins acknowledges that the Rotman Institute was instrumental in bringing together experts from different disciplines: “Rotman provided a unique space for collaboration, allowing us to address highly relevant problems that don’t fit neatly within traditional academic boundaries. If you think broadly about your work, Rotman is the place to be. I think that this project is a great example for that spirit of interdisciplinary collaboration.” \*



**“If your only tool is a hammer, then every problem looks like a nail. It’s important that we adopt a broader, interdisciplinary approach to climate change. It is just as much a moral and social crisis as it is an environmental one.”**

**BIPASHA BARUAH,**  
Department of Gender, Sexuality, and Women’s Studies

#### [A SNEAK PEEK AT NEXT YEAR](#)

### **2024 Library Lecture Series: climate change as a moral and social crisis**

Each fall, the [Rotman Institute of Philosophy](#) partners with the [London Public Library](#) and Western’s [Department of Philosophy](#) to present a four-part public lecture series on topics of general interest or social significance.

[Bipasha Baruah](#), a professor in the Department of Gender, Sexuality, and Women’s Studies, is already busy planning next year’s series, which will take an unconventional approach to the topic of climate change.

“When we think of climate change, the whole narrative and what takes up space is technological solutions and financing,” said Rotman affiliate faculty member Baruah. “There is very little conversation about people. Like, why does climate change affect some more than others. What’s the connection between climate change and gender equality? I really want to explore this topic through the lens of social justice.”

Another twist will be the series’ focus on hope that diverges from the usual doom-and-gloom perspective. While emphasizing the urgency of climate

change, Baruah wants to get across that it is not too late to make impactful choices that benefit our planet: “Despair makes people feel like everything is pointless. There are many actions we can take, such as putting pressure on harmful institutions or rethinking how we define a ‘good life’. I want people to understand the seriousness of climate change, but without succumbing to despair.”

Although the list of speakers has not yet been finalized, it will feature diverse and interdisciplinary voices. Baruah hopes the speakers will offer fresh perspectives on climate change, including its effects on the Global South, legal viewpoints, and the influence of hypermasculine ideas on the emphasis on technological solutions.

“If your only tool is a hammer, then every problem looks like a nail,” said Baruah. “It’s important that we adopt a broader, interdisciplinary approach to climate change. It is just as much a moral and social crisis as it is an environmental one.” \*



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