ACTION ON CLIMATE CHANGE BY THE UNIVERSITY OF OTTAWA

2019-2020

A MESSAGE FROM THE PRESIDENT

The dangers of climate change and its repercussions for our planet are very real and have put climate awareness at the forefront of how many organizations conduct their business. As an institution of higher learning and a research-intensive university, the University of Ottawa has a crucial role in raising awareness and understanding of climate change, as well as a responsibility to take positive and meaningful action. Through our collective activities, we are taking important steps forward each year to help address climate change and to increase our momentum in creating a sustainable future.

Over the past years, the University of Ottawa has made several important commitments to help create a culture of sustainability. We signed the Montreal Carbon Pledge, vowed to reduce the carbon footprint of our investments in accordance with Canada's national climate commitment, and implemented an Environmental Management and Sustainability Policy to support our efforts. We recruited one of the world's leading environmental economists, Carolyn Fischer, who holds the Canada 150 Research Chair in Climate Economics, Innovation and Policy, to position our university as a centre of excellence in environmental issues. And most recently, we made sustainability a key component of Transformation 2030.

While more remains to be done to ensure sustainability is deeply embedded across our campus, I am confident that the initiatives outlined in this report are helping to mobilize our institution and to integrate climate action throughout our academic programs, research activities and operations.

JACQUES FRÉMONT
PRESIDENT AND VICE-CHANCELLOR

uOttawa

Academics
LEARNING FOR TOMORROW

The University of Ottawa recognizes its role in advancing knowledge about climate change through its academic programs. The University's holistic approach to addressing climate change means not only focusing on what is taught in the classroom, but also leveraging the other learning and research vehicles available. By offering a variety of learning opportunities, the University can broaden and strengthen knowledge about our changing climate and how it affects the people on our planet. We can equip our students with the knowledge and tools they need to find and implement solutions to climate change.

TEACHING PROGRAMS

With thousands of courses offered at the University, it is easy to understand that many of them focus on the impact of climate change. From the hard science to legal decisions, from gender roles to business practices, from technology to tourism, students explore the many facets of how climate change is affecting our natural and social environments.

There are several focal points at the University of Ottawa that cluster around the concepts of climate change and sustainability. Each offers unique programming that contributes to an intensive learning experience for students at every level on campus.

The Centre for Environmental Law and Global Sustainability is the University of Ottawa's forum for research, teaching, discussion and advocacy related to environmental law. The centre promotes policy-relevant environmental law research and teaching, and is home to one of the largest concentrations of environmental law professors of any law school in Canada. Their areas of expertise include water law, toxin-related tort law, environmental justice, sustainable food law, international trade, economic instruments, biotechnology and Indigenous law.

The Institute of the Environment is a multidisciplinary teaching and research institute that brings together researchers and students from several faculties to explore environmental sustainability from diverse disciplines.

The institute's multidisciplinary master's program in environmental sustainability continues to attract strong cohorts of students to the University. In 2019, the University launched a PhD in Environmental Sustainability, an interdisciplinary degree that focuses on graduating first-class researchers with comprehensive knowledge of sustainability issues. The program's main objective is to equip researchers with the knowledge, skills and abilities required to conduct world-class research that directly informs real-world solutions to sustainability challenges. Both programs are supported by specializations that allow students in other graduate programs to supplement their degree with environmental sustainability content that is recognized on their diploma.

The Institute for Science, Society and Policy (ISSP) is a cross-faculty institute at the University of Ottawa that explores the links between science, society and policy. The institute attracts Fulbright Research Chairs, who collaborate with other researchers on campus and contribute to the knowledge capital of the University. The ISSP also supports unique programs, such as Mitacs, which provides an immersive experience for postdoctoral fellows to join government decision makers and stakeholders in informing policy. It also sponsors "Science Outside the Lab – North," a deep-dive, immersive introduction to science, policy and societal impact in which students spend one week meeting and interacting with the people who fund, regulate, shape, critique, publicize and study science, including government scientists and NGOs.

RESEARCH ACTIVITIES

As one of Canada's most research-intensive campuses, the University of Ottawa makes efforts to understand the impact of the warming environment, moving beyond the classroom into the laboratory and out into the field. This continues uOttawa's proud tradition of research founded on excellence, relevance and impact. Researchers from the University of Ottawa are working hard to understand the role that humans play in climate change, how it affects communities and economies around the world, how it changes our Canadian landscape and what it means for the millions of species that make up our ecosystems.

Between 2018 and 2020, 147 University research projects focused on climate change, representing over $22M in funding from various granting agencies. Every faculty at the University is engaged in climate research. Right now, researchers from uOttawa are speaking with members of Indigenous communities in the North, testing the strength of concrete under various climatic conditions, studying the role women play in creating climate policy, sampling the rate at which insects and diseases are moving north, and more.

The recruitment of environmental economist Carolyn Fischer, who holds the Canada 150 Research Chair in Climate Economics, Innovation and Policy, has raised the stature of an already impressive group of research chairs whose research intersects with climate change. These chairs are leading the way on sustainability research, but they are only the tip of the spear. Hundreds of researchers and scholars are pushing the boundaries of our understanding of the climate.

Since 2018, uOttawa researchers have published 31 research papers that focus specifically on climate change. Even so, publications are not the only output of our research activities. The Centre for Environmental Law and Global Sustainability (CELGS) has been contributing to cutting-edge research and innovative teaching in the broad field of environmental law. Over the years, the centre has helped train a new generation of environmental lawyers and is looking to move the needle towards more action and advocacy. Research is about more than just publication; it is about building a culture around the knowledge produced.

EXPERIENTIAL LEARNING

The University also seeks to bridge theory and practice and enrich the student experience through meaningful and diverse learning opportunities outside the classroom. We join with community, industry and government partners to create a holistic learning environment that stimulates academic inquiry, supports civic engagement and provides students with knowledge and skills forged in real-world settings.

Professors such as Daina Mazutis are incorporating community service learning into the academic experience. Mazutis ensures that her students learn about sustainability by applying theories in context through working with community not-for-profit organizations. For example, in 2017, a group of students helped change the University of Ottawa's building standards to incorporate the creation of more green roofs, which sequester carbon and reduce heating requirements.

Such novel approaches like this are common at uOttawa. The University's Michaëlle Jean Centre for Global and Community Engagement acts as a broker partnering with community organizations to set up community service learning opportunities for students. Since 2018, 41 uOttawa courses have offered community service learning options that focus on sustainability and the environment. For example, students in ENV 4520, a fourth-year environmental studies course, worked with the Office of Campus Sustainability to propose climate adaptation solutions for the uOttawa campus under the guidance of Professor Renata Sander-Regier.

Beyond the classroom, the Michaëlle Jean Centre offers opportunities for students to gain valuable experience by volunteering. The TD Environmental Leaders Program is an ongoing partnership that connects uOttawa students to projects related to reforestation and restoration, environmental education and sustainability, or community gardens. In the past two years, students have worked on six different projects, including helping create a pollinator and urban forest for Tree Fest Ottawa, a communal garden space in Gatineau and Lowertown, and a green alley for Heartwood House.

Finance and Treasury
INVESTING TO BUILD A CLEANER ECONOMY

The 2016 report entitled *Addressing Global Warming: The uOttawa Response* outlined a wide range of initiatives involving the University's teaching programs, research, facilities management and investment management.

In light of uOttawa's leadership role in addressing climate change, and to comply with its mandate, the Finance and Treasury Committee continues to build on its investment management efforts.

In accordance with the holistic approach and actions outlined in the report, the Finance and Treasury Committee has established the following steps to gradually tilt the portfolio away from fossil fuels and establish a framework to effectively measure future shifts in this direction:

1. Establish measurements and a proper starting point to track shifts in the long-term portfolio.
2. Identify and consider new indices and/or benchmarks that incorporate responsible investment principles, in addition to (or in place of) previous indices or benchmarks.
3. Annually measure progress and report the results to the University community.
4. Incorporate these results when considering and updating investment policies.
5. Consider these results, to the extent appropriate, in evaluating fund manager performance.
6. Create a Clean Innovations Fund with an initial $10 million. Increase it over time using funds from the existing portfolios and donations received for this purpose.

Taking steps to gradually tilt the portfolio away from fossil fuels remains a key strategic priority for the investment portfolio. As a result, the portfolio managers have increased investment allocation in an equities index portfolio that consists of low carbon intensity companies around the globe. This represents a carbon intensity reduction of 64% when compared with an overall market index for this allocation. In addition, the managers have made a $10 million commitment to an infrastructure fund with a strong renewable-energy focus that is mandated to only make investments that would otherwise lower the carbon intensity of the specific jurisdiction. This investment also provides flexibility to potentially co-invest in renewable projects, alongside the infrastructure fund.

Earlier this year, alongside 14 other universities, uOttawa pledged support for a new responsible investing charter called Investing to Address Climate Change: A Charter for Canadian Universities, which is aligned with uOttawa's current efforts in this regard.

Here is a breakdown of the progress made in the six steps outlined above:

1. Establish measurements and a proper starting point to track shifts in the long-term portfolio

The starting points to measure shifts in the long-term portfolios are the University's rankings in the following benchmarks:

a. PRI (Principles for Responsible Investing) ranking versus median respondent

b. Montreal Carbon Pledge

c. Environmental, social and governance (ESG) implementation by the portfolio's investment managers

These measurements have been identified by the Finance and Treasury Committee as proper starting points to measure shifts in the portfolio over time. All three measurements are updated annually, with 2016 levels operating as the base where applicable. The committee monitors annual progress against these measurements and will include any other new measurements as they arise.

a. University's PRI ranking versus median respondent

As a UN PRI signatory, the University is required to publicly report on the breadth and level of responsible investment activities within the portfolio. The following table describes the University's 2019 scorecard:

SUMMARY SCORECARD

Amount Under Management	Module Name	Your Score
	01. Strategy & Governance	A
Indirect Manager Selected, Approved & Monitored		
10-50%	02. Listed Equity	A
10-50%	03. Fixed Income - Social Security Administration	A
<10%	04. Fixed Income - Corporate Financial	A
<10%	05. Fixed Income - Corporate Non-Financial	A
<10%	06. Fixed Income - Securitised	Not Reported
10-50%	08. Property	A
10-50%	09. Infrastructure	A

The Finance and Treasury Committee concluded that ESG (environmental, social, and governance) scores have been consistent over the past three years and continue to be either ahead of, or in line with, other PRI signatories.

b. Montreal Carbon Pledge

As a Montreal Carbon Pledge signatory, the University submits the carbon footprint data of its equity portfolios to an independent audit. The following table reflects the results for 2019:

CO_2e/M$, tonnes	uOttawa LTP	Equity Benchmark Index	% below index
2019	55.0	151.7	63.7%
2018	68.1	124.9	45.5%
2017	65.9	121.2	45.6%
2016	68.5	134.1	48.9%

Source: MSCI

Index data remains difficult to interpret because carbon footprint calculations are based on index composition and weighted by market pricing. Since this measurement is still in its early stages, there are currently no best practices in carbon emissions evaluation methodology. The volatility of the data also suggests that caution should be used in interpreting these statistics over the short term. However, we expect to draw more insight on relative performance as longer-term trends are established and additional measurements are developed.

c. ESG implementation in the portfolios

Another way to measure progress is to assess the level of implementation of ESG throughout the portfolios on an annual basis. For 2019, the following observations can be made:

» On a dollar basis, approximately 76% of the portfolios are managed by investment managers who are PRI signatories:

- 100% of the equity portfolio (100% in 2017)
- 100% of the fixed income portfolio (79% in 2017)
- 63% of the real estate portfolio (23% in 2017)
- 100% of the infrastructure portfolio (100% in 2017)

» Approximately 48% of the portfolio (38% in 2017) is managed by managers who have formally integrated ESG into their investment management processes:

	% of Portfolio*	N/A	Informal Integration	Formal Integration
Equities	45.2%	3.7%	4.5%	37.0%
Fixed Income	25.8%	-	25.8%	-
Absolute Return Assets	13.4%	6.9%	6.5%	-
Real Estate	7.6%	-	2.2%	5.4%
	8.0%	-	2.0%	6.0%
TOTAL	100.0%	10.7%	41.0%	48.3%

* Cash and currency overlay are excluded from the total weight

2. Identify and consider new indices and/or benchmarks that incorporate responsible investment principles, in addition to (or in place of previous indices or benchmarks

Climate change is an emerging topic in global financial markets, and the University continues to monitor and support the development of new measurements. We are fulfilling a leadership role in addressing climate change and continuing to evaluate and compare emerging and existing indices and benchmarks against which to measure the investment portfolios. As a leader, we continue to discuss addressing climate change with our peers and serve as a model for others.

3. Annually measure progress and report these results to the University community

We conduct annual measurements of the three categories listed under item 1.

4. Incorporate these results when considering and updating investment portfolio policies

The Statement of Investment Policies and Goals (SIPG) incorporates responsible investing and is aligned with the United Nations framework on industry best practices. The SIPG is reviewed and approved annually. It is also published on the uOttawa website, which also features well-established, responsible investment guidelines for the long-term portfolio, which are periodically reviewed.

5. Consider these results, to the extent appropriate, in evaluating fund manager performance

We conduct ongoing evaluations of investment manager performance, with assessments of their responsible investing and ESG efforts as key criteria. This assessment forms part of the ongoing review and monitoring discussions with current external investment managers and are key considerations when selecting new investment managers. The ongoing evaluations are regularly reported to the Finance and Treasury Committee.

6. Create a Clean Innovations Fund with an initial $10 million; increase it over time using funds from the existing portfolios and donations received for this purpose

At various meetings, the Finance and Treasury Committee evaluated a number of options for the development of a Clean Innovation Fund. These discussions centred on the investment structure and the risk and return objectives of such a fund, along with implementation options. While investment staff continue to look for and research investment opportunities, the initial allocation of $10 million is invested in a Canadian Green Bond mandate. Green bonds are designated bonds intended to encourage sustainability and to support climate-related or other types of special environmental projects. More specifically, green bonds finance projects aimed at energy efficiency, pollution prevention, sustainable agriculture, fishery and forestry, the protection of aquatic and terrestrial ecosystems, clean transportation, sustainable water management and the cultivation of environmentally-friendly technologies.

External Relations
WORKING IN THE COMMUNITY

EXTERNAL RELATIONS' CONTRIBUTIONS TO THE FIGHT AGAINST CLIMATE CHANGE

Through fundraising, hosting events and promoting research and activities related to sustainability, External Relations (ER) is helping the University of Ottawa community in the fight against climate change.

ENGAGING DONORS AND ALUMNI IN SUPPORT OF CLEAN INNOVATION

In 2016, the Executive Committee of the Board of Governors, in response to a Finance and Treasury Committee report on addressing global warming, committed uOttawa to creating a Clean Innovation Research Fund (CIRF), under the purview of the vice-president, research.

In turn, External Relations (ER) committed to raising $1.5M by 2020, with the Office of the VP Research committing to contribute an additional $1.5M, for a total of $3M. The fund supports research, as well as teaching and graduate scholarships. External Relations has exceeded this fundraising goal, with donors contributing $2.1M to date for initiatives related to climate change.

This fundraising total includes $325,000 raised in 2019-20 for Positive Energy. Led by Professor Monica Gattinger, associate professor at the School of Political Studies and director of the Institute for Science, Society and Policy, the project looks at how to build public confidence in the transition to a low-carbon economy in Canada.

It also includes $420,000 raised in 2019-20 for research at the Smart Prosperity Institute, a national research network and policy think tank on clean economy based at the University of Ottawa and led by Stewart Elgie, professor of law and economics who is also director of the University's interdisciplinary Institute of the Environment and founder and chair of the Smart Prosperity Institute.

In 2019, the Jarislowsky Foundation donated $250,000 (the second of three payments) in support of the Smart Prosperity Institute. These funds support Smart Prosperity's Senior Global Fellows and Research Program, which brings top researchers to uOttawa to advance research and policy engagement on driving clean innovation.

External Relations also received a generous gift of $52,000 from Robert Gorman (the first tranche of a $100,000 pledge) towards the Martine Aquarium Outreach Project, a program that strives to instill a sense of wonder and responsibility in young people and build their awareness of a fragile ecosystem endangered by climate change. This donation allowed Let's Talk Science at the University of Ottawa to develop and implement a successful research-based educational outreach program which welcomed 1,600 visiting students from 22 schools on campus and engaged 23 graduate students in the delivery of various workshops.

EXTERNAL RELATIONS HOSTS EVENTS RELATED TO CLIMATE CHANGE AND SUSTAINABILITY

In March 2019, External Relations, in partnership with the Office of the President, hosted a Chancellor's Debate on business and sustainability featuring social entrepreneur Zita Cobb.

In May 2020, the vice president, external relations, Dr. Jacline Nyman, hosted an online discussion featuring Professor Stuart Elgie of the Faculty of Law, Common Law Section. More than 85 alumni and donors participated in the discussion on how to stimulate a green post-COVID economic recovery that will create the economy of the future.

As part of its program to engage and stay in touch with our graduates, students, volunteers, parents, faculty and staff, the Alumni Relations Office held a series of events on sustainability and climate change.

RESPONSIBLE INVESTMENT WORKSHOP – OCTOBER 22, 2019

The importance of responsible investment is often overlooked due to its seeming complexity. Our financial series with Desjardins assisted in understanding how to make responsible investments alumni can count on. Fred Pratt, Telfer alumnus, led workshop attendees through the importance of responsible investment. The workshop included the importance of ethical investment and how to apply these concepts.

UOTTAWA INNOVATES - SOFTWARE, SCALABLE AUTOMATION AND SUSTAINABLE ENERGY - DECEMBER 12, 2019

uOttawa Innovates is an event series that connects the University of Ottawa's Faculty of Engineering with alumni and partners from the tech and innovation sector. This edition of uOttawa Innovates invited uOttawa experts Lionel Briand and Elena Baranova to uOttawa's Kanata North location to bring together a diverse audience to learn how the University is leading in the areas sustainable energy and AI-driven scalable automation. In particular, Dr. Baranova provided insight on how her Laboratory of Electrochemical Engineering is utilizing the nanotechnology of smart materials for energy and the environment.

ZERO WASTE 101 WORKSHOP – JANUARY 21, 2020

Nu Grocery launched a new a zero-waste grocery store in Old Ottawa South. Founder and CEO Valerie Leloup graduated from uOttawa and later opened Nu Grocery. The zero-waste store has items in bulk or redeemable glass containers to allow customers to participate and thrive in the zero-waste lifestyle. Leloup delivered a workshop to guide attendees on the basics of zero waste and how to make reusable beeswax wrap.

A Sustainable Campus
CREATING A GREENER CAMPUS

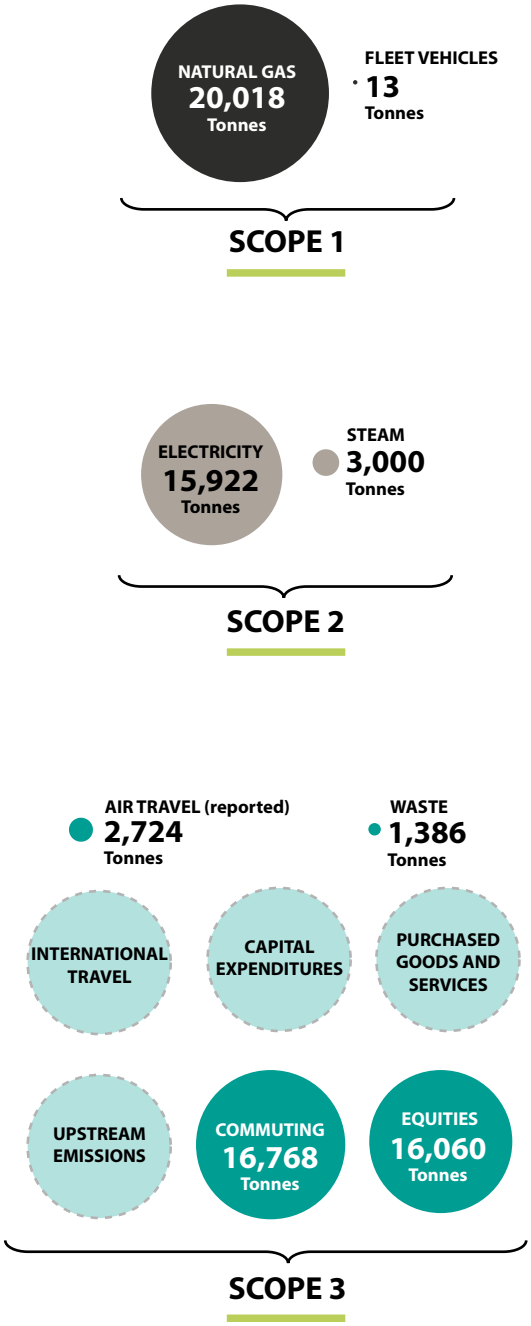
For decades, the University of Ottawa has been operating a lean and efficient campus. This has helped foster a culture of conservation and stewardship; however, the accelerated pace of climate change has forced the University to evolve and implement new practices to deal with the changes we see in the National Capital Region. Along with new programs, the University has also adopted new ways of thinking about the challenge, ultimately moving towards a holistic approach that incorporates a diverse set of solutions.

EXPANDING OUR EMISSIONS INVENTORY

In late 2017, the University of Ottawa adopted Policy 72—Environmental Management and Sustainability. This precipitated the creation of a Campus Sustainability Plan. The first iteration of this plan focuses on three key areas: climate change, waste management and experiential learning. The climate portion of this plan expands the institutional view of our emissions from simply those produced by the natural gas we burn to include other sources such as the emissions created from air travel and so forth.

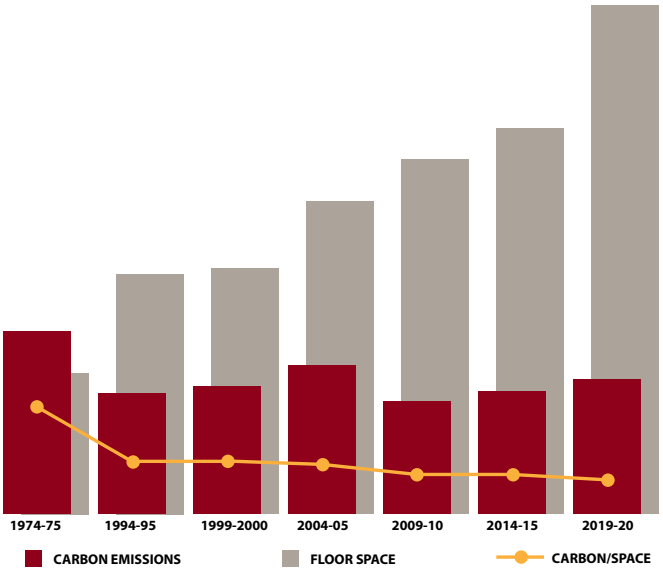
In the coming years, a complete inventory of the institution's greenhouse gases will be undertaken to better understand an appropriate course of action under this expanded view of our emissions. Policy 72 requires that every faculty and service create a sustainability plan that aligns with institutional goals. The creation of these plans will be undertaken with the help of the Office of Campus Sustainability and reviewed by the Campus Sustainability Committee.

By the year 2040, the University of Ottawa aims to be carbon neutral, essentially emitting zero net emissions by offsetting its carbon. This would apply to direct emissions produced by burning natural gas and fuel.



INFRASTRUCTURE

In the past five years, the floor space of the University of Ottawa has increased significantly due to the construction of new buildings and the acquisition of leased spaces. This has expanded the campus footprint and increased the carbon burden. Nevertheless, work continues in order to reduce the carbon created by the buildings on campus; carbon emissions intensity is one-quarter of what it was in 1975.



The majority of the work done to reduce the University of Ottawa's emissions was accomplished through forward thinking infrastructure, such as the decision in the 1980s to create a district heating and cooling system, and more recently, through energy retrofits. For the past decades, the EcoProsperity Program, a series of deep energy retrofits, have dramatically reduced CO_2 production on campus and produced a very attractive return on investment. For example, a $1M retrofit that was completed at the Minto Sports Complex, represents an annual saving of $200K in utilities costs (water, electricity and natural gas) and a reduction of our carbon footprint of 403 tonnes.

These energy retrofits have been recognized by Enbridge Gas, who offer financial incentives for successful energy reduction projects. The rigorous verification process undertaken by Enbridge Gas provides assurance that the project did indeed achieve verifiable energy reductions. In January of 2020, Enbridge officials visited the University to present another incentive rebate for the energy retrofits at the Biosciences Complex and Colonel By Hall. The deep energy retrofits over the past decade have eliminated 9,682 tonnes of CO_2 annually.

Another reason for our success is in part thanks to the University's decision to build green-certified buildings. Both the Social Sciences Building (FFS) and the Advanced Research Complex are certified LEED Gold. In 2018, FSS was recognized by the Canadian Green Building Council for Building Excellence in the National Capital Region. The recently completed STEM Complex and Learning Crossroads are in the process of receiving their LEED certification, and the new development at 200 Lees is targeting the highest LEED certification, platinum. Even higher standards are being explored for future buildings.

Emissions come from a variety of sources and so solutions cannot be limited to what is happening in our buildings. In early 2020, Facilities revamped its fleet of work vehicles. The size of the fleet was reduced, and one-third was replaced by electric vehicles. This is estimated to eliminate 16 tonnes of CO_2 from our fleet annually and contribute to our clean air community.

TRANSPORTATION

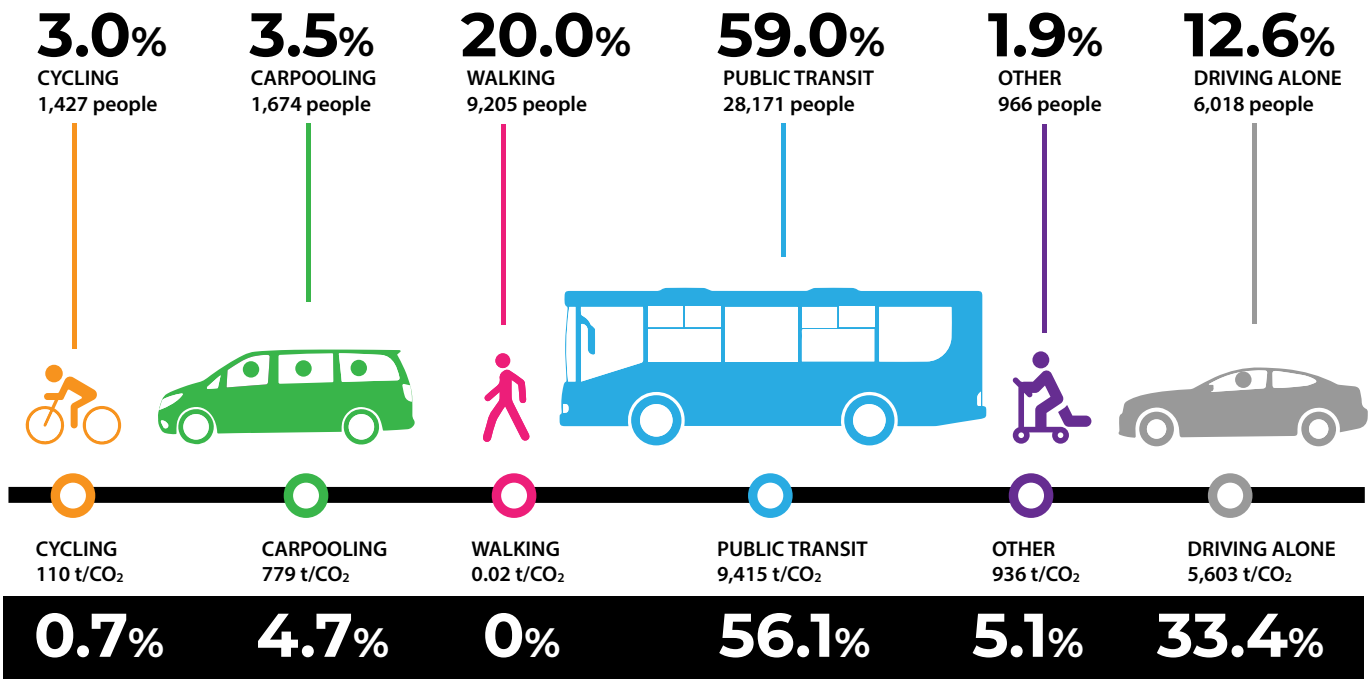
Taking a broader look, the emissions created from heating and powering our buildings represent only slightly more than the emissions created by commuting to campus. Beyond the Facilities fleet, there has been a rigorous effort to encourage campus commuters to move towards less carbon-intensive forms of transportation. Currently, over 87% of campus community members do not use a single occupancy vehicle to arrive on campus, but the 13% who do produce represent one-third of all the emissions.

The amount of cycling infrastructure on campus has greatly increased over the past decade. There are fewer emissions associated with cycling, so reducing barriers to this activity benefits the environment. Two City of Ottawa cycling paths converge on campus and a recently completed multi-use pathway connects the main campus to 200 Lees. On campus, there are public, secure bike racks, outdoor bike repair stations, and the Student Union operates a bike coop. To further encourage walking and cycling, the core of the University's main campus is being transformed into a car-free area, with barriers installed in 2019 to reroute vehicular traffic away from the centre of campus.

One of the most significant programs to change commuting patterns on campus was the implementation of the U-Pass, which helped direct students towards public transportation. In 2019, the City of Ottawa's new electric light rail system was completed. Once the system is widely adopted, it is expected to significantly reduce the emissions associated with commuting. Other car-related programs, such as carpooling, ride-sharing, and an emergency ride program, help compliment the University's efforts to move people away from single-occupancy vehicles.

The University is constantly looking for new opportunities to reduce its emissions. Already, there are groups around the campus looking to play a proactive role in reducing their emissions. The uOttawa Library has created a sustainability group to discuss how they can fly less to reduce their footprint and create tools to empower other groups on campus. The Department of Geography and Environmental Studies has an informal working group trying to figure out how it can reduce energy consumption in its spaces.

As we gain a deeper understanding of how our operations affect the environment, we will adjust to ensure that we are respecting the limits of our environment and providing the opportunity for our community to grow.



CONCLUSION

The University of Ottawa is committed to taking real action on climate change and to being part of the global movement that will tackle this common challenge. Given the scale and urgency of the threats posed by global warming, the integration of sustainability as one of four strategic pillars of Transformation 2030 is critical to our leadership in this area. It commits our entire community to dialogue and identifying opportunities to take action across all sectors and disciplines of our institution.

As uOttawa moves toward a more comprehensive and integrated approach to addressing climate change, I am proud of the leadership demonstrated by our faculty, staff members and students. From generating knowledge and disseminating research to implementing sustainability-related policies and cultivating global citizens with the skills to implement important change, we are harnessing opportunities to solve a real-world problem and to create a better future.

As we aim to improve upon our own policies and practices, we will continue to help society prepare and adapt to our changing climate through education, research, operations and community engagement efforts. Our collective achievements are reason for optimism and will no doubt encourage a healthier, more sustainable community.

JACQUES FRÉMONT
PRESIDENT AND VICE-CHANCELLOR

ACADEMIC

CSL COURSE INVENTORY (ENVIRONMENT AND SUSTAINABILITY)

COURSE CODE	TITLE	TERM	PROFESSOR
ADM4317M	Leadership, Strategy and Sustainability	Winter 2018	Safi, Pouya
GEG1302	Places and Spaces of Human Activity	Winter 2018	Veronis, Luisa
GEG2110B	Sustainability of Social Spaces and Built Environments	Winter 2018	Kurtz, Matthew
ADM4317A	Leadership, Strategy and Sustainability	Fall 2018	Safi, Pouya
DVM3135A	Food Security and International Development	Fall 2018	Huggins, Christopher
ENV1101A	Global Environmental Challenges	Fall 2018	Asif, Furqan
ENV1501A	*Les défis environnementaux globaux*	Fall 2018	Sander-Regier, Renate
ENV2701A	*Histoire de la pensée environnementale*	Fall 2018	Sander-Regier, Renate
GEG3305A	Geographies of Globalization	Fall 2018	Veronis, Luisa
GEG4127A	Seminar in Human Geography - Livable Communities, Healthy Cities (selected topics)	Fall 2018	Crighton, Eric
ADM4317	Leadership, Strategy and Sustainability	Winter 2019	Safi, Pouya
BIO3115	Conservation Biology	Winter 2019	Findlay, C. Scott
BIO3515	*Biologie de la conservation des espèces*	Winter 2019	Chuard, Pierre
ENV4120	Research Seminar in Environmental Studies	Winter 2019	Sander-Regier, Renate
ENV4513A	*Thèmes choisis en enjeux environnementaux*	Winter 2019	Mailhot, Amélie-Anne
GEG1302	Places and Spaces of Human Activity	Winter 2019	Veronis, Luisa
GEG2110A	Sustainability of Social Spaces and Built Environments	Winter 2019	Kurtz, Matthew
GEG3301/ EAS3102	Selected Topics in Human Geography/Selected Topics in Aboriginal Studies | Indigenous Peoples, Environment and Health	Winter 2019	Wesche, Sonia
ADM4317A	Leadership, Strategy and Sustainability	Fall 2019	Safi, Pouya
ADM4717A	*Leadership, stratégie et durabilité*	Fall 2019	Jlouli, Dorra
DVM3125	Environmental Policies, Natural Resources Management and Sustainable Development	Fall 2019	Ramisch, Joshua
DVM3135A	Food Security and International Development	Fall 2019	Huggins, Christopher
ENV1101	Global Environmental Challenges	Fall 2019	Wesche, Sonia
ENV2701A	*Histoire de la pensée environnementale*	Fall 2019	Sander-Regier, Renate
GEG3305	Geographies of Globalization	Fall 2019	Veronis, Luisa
ADM4317A	Leadership, Strategy and Sustainability	Winter 2020	Mazutis, Daina
BIO3115	Conservation Biology	Winter 2020	Findlay, C. Scott
BIO3515	*Biologie de la conservation des espèces*	Winter 2020	Fréchette, Emmanuelle
DVM4153	International Development and Environmental Change	Winter 2020	Huggins, Christopher
ENV4520	*Séminaire de recherche en études de l'environnement - La durabilité en action*	Winter 2020	Sander-Regier, Renate
GEG1302	Places and Spaces of Human Activity	Winter 2020	Veronis, Luisa
GEG-ENV 3702	*Gestion des ressources naturelles et de l'environnement*	Winter 2020	Sander-Regier, Renate
ADM4317A	Leadership, Strategy and Sustainability	Fall 2020	Safi, Pouya
ADM4717A	*Leadership, stratégie et durabilité*	Fall 2020	Jlouli, Dorra
DVM3125	Environmental Policies, Natural Resources Management and Sustainable Development	Fall 2020	Ramisch, Joshua
DVM3135A	Food Security and International Development	Fall 2020	Huggins, Christopher
DVM4330	Global Governance and the Extractive Industries	Fall 2020	Huggins, Christopher
ENV2701A	*Histoire de la pensée environnementale*	Fall 2020	Sander-Regier, Renate
GEG 3506	*Ville en mutation*	Fall 2020	Cao, Huhua
GEG3305A	Geographies of Globalization	Fall 2020	Veronis, Luisa
LSR3505A	*Parcs et zones protégées*	Fall 2020	DeschÍnes, Gervais

Heartwood House Green Alley Project
servingothers.uOttawa.ca/volunteering/td-environmental-leaders-program/past-projects-td

Tree Fest Ottawa and communal garden projects
servingothers.uOttawa.ca/volunteering/td-environmental-leaders-program/upcoming-projects

CELGS – 2020 STRATEGIC PLAN

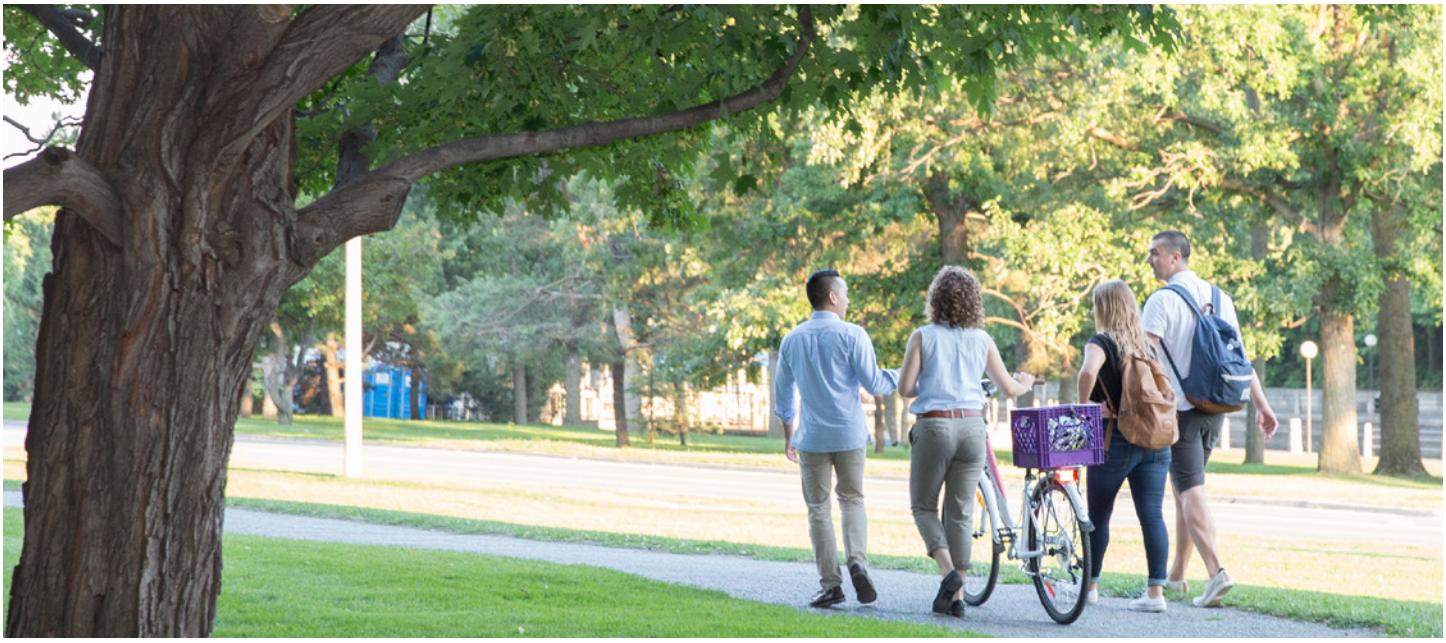
PI Name	Project Title	Start Date (DD/MM/YYYY)	Amount Awarded
Abrahamsen, Rita	The evolution of Arctic governance	5/1/2020	$7,000.00
Altosaar, Illimar	GHG reduction by atmospheric phytoremediation: Empowering Ontario's industrial crops like corn with enzymatic power to reduce GHGs like nitrous oxide; LCIF Business Case EA Identifier 140.	4/1/2018	$38,550.00
Altosaar, Illimar	GHG reduction by atmospheric phytoremediation: Empowering Ontario's industrial crops like corn with enzymatic power to reduce GHGs like nitrous oxide; LCIF Business Case EA Identifier 140.	3/31/2018	$750,000.00
Aoude, Hassan	Climate resilient bridge infrastructure - Research Area 3: High performance climate adaptation CFRP laminate for rapid strengthening of existing bridge columns	8/15/2018	$62,727.00
Audet, Pascal	EON-ROSE Symposium 2018	2/1/2018	$5,690.00
Bao, Xiaoyi	Installation of test equipment, data collection and analysis	2/21/2018	$8,800.00
Baranova, Olena	Research Assistant I: Development of efficient catalysts for conversion of CO_2 to value-added products	5/1/2018	$15,000.00
Bataille, Clément	Development and application of isotope tracers for geolocation and surface hydrology	1/23/2019	$331,028.00
Bataille, Clément	Investigating climate controls on weathering processes in modern and ancient rivers	4/1/2019	$12,500.00
Bataille, Clément	Development and application of isotope tracers for geolocation and surface hydrology	1/23/2019	$134,470.00
Bataille, Clément	Investigating climate controls on weathering processes in modern and ancient rivers	4/1/2019	$50,000.00
Bataille, Clément	Investigating climate controls on weathering processes in modern and ancient rivers	4/1/2019	$150,000.00
Ben Amar, Walid	Climate change disclosures in family firms	3/1/2019	$4,000.00
Blais, Jules	New directions in tracking environmental change using lake sediment archives - northern supplement	4/1/2018	$100,000.00
Blais, Jules	New directions in tracking environmental change using lake sediment archives	4/1/2018	$375,000.00
Bronson, Kelly	Working with co-production	2/1/2019	$1,000.00
Chan, Laurie	Developing adaptation strategies for healthy fisheries and food security for First Nations in British Columbia under climate change	10/1/2019	$1,526,176.00
Chan, Laurie	Co-developing innovative approaches with Indigenous partners to foster coastal resilience, food security, and sustainable marine harvests	1/1/2019	$149,980.00
Chan, Laurie	Developing adaptation strategies for healthy fisheries and food security for First Nations in British Columbia under climate change	10/1/2018	$100,000.00
Chan, Kin	Using cancer hypermutation to genetically engineer better bioethanol-producing yeasts	3/29/2019	$273,309.66
Chelli, Mohamed	Corporate water performance, market valuation and cost of equity capital	6/1/2018	$43,402.00
Chomienne, Marie-Hélène	*Bien-être psychologique du personnel de l'entretien ménager des hôpitaux canadiens, facteurs déterminants et conditions d'influence en temps de pandémie (COVID-19).*	9/1/2020	$199,028.00
Copland, Luke	Impacts of climate change on pinch points for shipping in the Canadian Arctic	1/1/2019	$24,900.00
Copland, Luke	GO-Ice: glacier-ocean-iceberg dynamics in a changing Canadian Arctic	4/1/2019	$89,833.00
Copland, Luke	Impacts of climate change on ship-ice interactions in Arctic Canada	11/15/2019	$49,350.00
Copland, Luke	Ocean impacts on tidewater glaciers in the Canadian Arctic	4/1/2018	$96,939.00
Copland, Luke	Analysis of vessel ice strengthening relative to Arctic ice navigational conditions	2/13/2020	$40,000.00
Copland, Luke	University Research Chair in Glaciology	11/1/2018	$125,000.00

PI Name	Project Title	Start Date (DD/MM/YYYY)	Amount Awarded
Cornut St-Pierre, Pascale	*La construction d'une infrastructure juridique pour la finance verte : le cas des obligations vertes*	9/1/2018	$5,000.00
Cornut St-Pierre, Pascale	*La construction d'une infrastructure juridique pour la finance verte : le cas des obligations vertes*	9/1/2018	$5,000.00
Cornut St-Pierre, Pascale	*Fonds de démarrage de la recherche*	4/1/2018	$5,000.00
Couture, Jean-François	Protein biophysics core facility	5/1/2019	$90,000.00
Cvetkovska, Marina	Elucidating the basis of photosynthetic adaptations to extreme conditions	12/15/2018	$52,536.00
Cvetkovska, Marina	Using the Antarctic green alga Chlamydomonas sp. UWO241 as a model system to investigate photosynthesis under extreme conditions	1/1/2019	$210,000.00
Cvetkovska, Marina	Using Antarctic green algae to study photosynthesis under extreme conditions	4/1/2019	$140,000.00
Cvetkovska, Marina	Elucidating the basis of photosynthetic adaptations to extreme conditions	12/15/2018	$202,060.00
Dawson, Jackie	Mapping characterization of the Arctic	7/8/2019	$24,725.00
Dawson, Jackie	Arctic shipping and transportation in a rapidly changing Arctic	4/1/2019	$223,000.00
Dawson, Jackie	Mobile labs to support interdisciplinary research along shipping corridors in the Canadian Arctic	3/29/2019	$100,000.00
Dawson, Jackie	Mitigating Arctic shipping risks through improved prediction of conditions leading to ship besetment in pressured ice: A case study in Hudson Strait	4/1/2019	$40,000.00
Dawson, Jackie	Mapping and managing shipping risks to protected marine areas in Canada's Northwest Passage - Lancaster Sound and the Franklin wreck sites	4/1/2018	$166,281.00
Dawson, Jackie	Impacts of climate change on ship-ice interactions in Arctic Canada	11/15/2019	$19,950.00
Dawson, Jackie	Community perspectives on the impacts of increased shipping and climate change along the Northwest Passage in the Canadian Arctic.	4/1/2019	$40,000.00
Dawson, Jackie	Arctic Corridors and Northern Voices	11/1/2018	$124,110.00
Dawson, Jackie	Monitoring Arctic shipping risks in Nunavut	4/1/2019	$174,340.00
Dawson, Jackie	Arctic Corridors and Northern Voices: Knowledge dissemination project	4/1/2018	$25,000.00
Dawson, Jackie	Arctic Corridors and Northern Voices: governance of low impact shipping corridors	5/8/2020	$130,150.00
Dawson, Jackie	Understanding Inuit community uses and needs for weather, water, ice, and climate information and services	4/1/2019	$92,500.00
Delatolla, Robert	ECCC wastewater training package	3/22/2019	$15,000.00
Delatolla, Robert	Pilot-scale nutrient removal technology optimization for lagoon wastewater treatment system upgrades	4/15/2019	$15,000.00
Delatolla, Robert	Pilot-scale nutrient removal technology optimization for lagoon wastewater treatment system upgrades	4/15/2019	$30,000.00
Delatolla, Robert	Pilot-scale nutrient removal technology optimization for lagoon wastewater treatment system upgrades	4/15/2019	$50,000.00
Dimoff, Jennifer	Mental illness in the workplace: Understanding the impact of mental health climate on employees	6/1/2020	$65,798.00
Dionne, Liliane	*Rencontres francophones région Ottawa-Gatineau sur les exemples de pratiques en éducation environnementale et au développement durable*	12/1/2019	$3,457.00
Dionne, Liliane	*Rencontres francophones région Ottawa-Gatineau sur les exemples de pratiques en éducation environnementale et au développement durable*	12/1/2019	$3,000.00
Directeur, Doyen	Voting for a better world? Foreign policy in the 2019 Elections	3/15/2019	$7,000.00
Elgie, Stewart	Smart Prosperity Institute	5/1/2018	$1,800,000.00
Elgie, Stewart	Mark Cameron - Climate change communications	3/29/2019	$75,000.00
Elgie, Stewart	Women leaders kicking it on climate change summit	5/2/2018	$23,000.00
Fall, Mamadou	Development of a geosynthetic mechanical stabilization technique for road subgrade in warming cold regions	11/1/2019	$25,000.00

PI Name	Project Title	Start Date (DD/MM/YYYY)	Amount Awarded
Fall, Mamadou	Climate Resilient Bridge Instracture: structural and hydraulic performance of existing bridges, key elements subjected to climatic loads and development of climate adaptation approaches Research Area 6: Geotechnical response of Canadian bridge substructures and foundations to changing soil freeze-thaw frequencies	8/15/2018	$62,727.00
Fischer, Carolyn	Canada 150 Research Chair in Climate Economics, Innovation and Policy	11/1/2018	$2,450,000.00
Fischer, Carolyn	Canada 150 Research Chair in Climate Economics, Innovation and Policy	11/1/2018	$1,105,122.00
Fischer, Carolyn	Canada 150 Research Chair in Climate Economics, Innovation and Policy	11/1/2018	$700,000.00
Forrest, Jessica	Bee ecology and evolution in the context of global change	4/1/2019	$235,000.00
Gajewski, Konrad	*Manuel de laboratoire en géographie physique*	9/1/2018	$10,560.00
Gajewski, Konrad	Analysis of fire disturbance regime and vegetation response of the past 2000 years for western Nova Scotia	10/1/2018	$35,295.00
Garred, Jason	Research Visit - Environment and Development Economics	9/9/2019	$6,000.00
Gattinger, Monica	Positive Energy: Strengthening public confidence in energy decision-making	1/9/2020	$150,000.00
Guilherme, Stephanie	Sustainable water treatment strategies for northern communities	2/1/2020	$10,000.00
Guilherme, Stephanie	Sustainable water treatment strategies for northern communities	2/1/2020	$10,000.00
Guilherme, Stephanie	Sustainable water treatment strategies for northern communities	1/1/2020	$30,000.00
Hajmohammad, Sara	Supplier sustainability risk to non-market stakeholder claims, and managerial strategic reaction	7/1/2019	$16,839.25
Haman, François	Optimizing operational readiness of CF women and men in cold climates: Developing a research framework and field decision making tool through an interdisciplinary international partnership	2/5/2019	$198,365.57
Harper, Mary-Ellen	Novel thermoregulatory mechanisms in brown adipose tissue	4/1/2020	$325,000.00
Heyes, Anthony	Heat and the Indian economy: a study with three components	4/1/2020	$138,956.00
Himick, Darlene	The fossil fuel divestment campaign	4/1/2019	$98,224.00
Imbeault, Pascal	*Métabolisme du tissu adipeux blanc sous influence des polluants organiques persistants et de l'hypoxie*	4/1/2019	$140,000.00
Jonz, Michael	Respiratory epithelia in vertebrates: sites of chemosensing and neurogenesis	4/1/2018	$235,000.00
Katz-Rosene, Ryan	The future of sustainable protein: outreach activities [SSHRC Connections Grant]	1/1/2019	$24,250.00
Katz-Rosene, Ryan	The future of protein: challenge and opportunity in nourishing the world sustainably	9/1/2018	$1,100.00
Katz-Rosene, Ryan	Proposal for new KMB activities: future of sustainable protein	4/1/2020	$7,000.00
Kavgic, Miroslava	Start-up grant: Sustainable, affordable, and comfortable buildings for Canadian climates	7/1/2020	$30,000.00
Kenny, Glen	Establishing evidence-based indoor temperature thresholds to protect health	12/10/2018	$715,625.00
Kenny, Glen	The air calorimeter: an innovative tool for the scientific discovery of the human heat stress response in a warming planet	4/1/2019	$144,840.00
Kenny, Glen	Heat stress solutions alliance	9/1/2020	$250,000.00
Kerr, Jeremy	Mitacs Globalink research award	4/8/2019	$6,000.00
Kerr, Jeremy	University Research Chair in Conservation and Macroecology	7/1/2018	$125,000.00
Kulkarni, Manisha	Citizen-based surveillance of Ixodes scapularis and other ticks in ON, QC and NB using eTick.ca, a web platform dedicated to image-based tick identification	9/1/2018	$32,000.00
Kulkarni, Manisha	Public health risk assessment tools for emerging vector-borne diseases 2.0	10/1/2019	$198,900.00
Kulkarni, Manisha	Best practices for urban planning in the context of climate change and emerging tick-borne diseases	8/31/2019	$ 406,728.00
Labonté, Ronald	Mapping Canadian knowledge of, and involvement in, the global governance of anti-microbial resistance and related infectious diseases	3/1/2018	$100,000.00

PI Name	Project Title	Start Date (DD/MM/YYYY)	Amount Awarded
Lagacé, Martine	*Leviers d'action contre l'âgisme: une exploration du rôle du climat intergénérationnel*	3/15/2018	$46,528.00
Lemaire, Edward	Notification mat	7/16/2019	$15,000.00
Lemyre, Louise	*Recherche en congé universitaire: Aspects psychosociaux de la communication habilitante en matière de risques*	7/1/2018	$22,000.00
Lemyre, Louise	*Intégration de la gestion psycho-sociale du risque dans la communication*	1/1/2020	$20,000.00
Levesque, Anne	*Fonds de démarrage*	7/1/2019	$15,101.50
Lewkowicz, Antoni	May Creek hydrology study, Tanquary Fiord, Ellesmere Island, Nunavut	5/3/2019	$16,687.00
Lewkowicz, Antoni	Climate station inventory and data provision, Yukon Territory	2/1/2019	$5,000.00
Lutscher, Frithjof	Modelling the effects of spruce budworm phenology on its population dynamics in a changing climate	4/1/2019	$180,000.00
MacLean, Allyson	Understanding the molecular mechanisms that regulate arbuscular mycorrhizal symbiosis	4/1/2018	$204,000.00
Martin-Perez, Beatriz	Impact of climate change on deterioration and structural performance of existing bridge columns	8/15/2018	$125,455.00
Mazutis, Daina	The business of accelerating sustainable urban transformations in Canada	3/1/2020	$41,914.00
McCurdy, Patrick	A Tar Sands Tale: A critical study into the events and mediatized legacy surrounding the banned CBC	3/15/2018	$55,362.00
McKee, Susan	Let's talk science in Sanikiluaq	4/1/2019	$4,700.00
McKee, Susan	Submerged in a coral reef with Let's Talk Science in Ottawa	6/1/2019	$5,000.00
Milne, Glenn Antony	Past and future changes in ice sheets and sea level	4/1/2018	$375,000.00
Mirza, Vincent	*Centre de recherche sur le futur des villes*	7/1/2020	$30,000.00
Mohammadian, Abdolmajid	Optimization of the two-dimensional hydrodynamic model for the Ottawa River	6/15/2020	$38,985.00
Mohammadian, Abdolmajid	Extension of the two-dimensional hydrodynamic model for the Ottawa River downstream, up to Carillon, to support ECCC's spill modelling operational program	1/10/2018	$24,840.00
Mohammadian, Abdolmajid	Mesh optimization of the two-dimensional hydrodynamic model for the Ottawa River to support ECCC's spill modelling operational program	2/4/2020	$34,500.00
Murugesu, Muralee	High-pressure gas adsorption analyzer for clean energy technology	4/1/2019	$150,000.00
Narbaitz, Roberto	Adapting to life in a changing climate: optimizing water treatment processes	4/1/2018	$130,000.00
Nistor, Ioan	Verification of 3D numerical model and examination of applicability of new breakwater design	12/1/2019	$3,000.00
Nistor, Ioan	Intercomparison of scale and dimensionality of prediction tools for multi-risk assessment: erosion, coastal flooding, ice jamming (INEDINE)	4/1/2020	$80,000.00
Nistor, Ioan	Prevention and mitigation of natural disasters under climate change – Research visit of Professor Tomoya Shibayama from Waseda University, Tokyo, Japan	4/1/2020	$3,500.00
Pick, Frances	Expansion, toxicity and impact of cyanobacteria in a changing world	4/1/2018	$235,000.00
Rennie, Colin	River morphodynamics research for flood mitigation	4/1/2019	$310,000.00
Richards, Gregory	A framework for assessing regulations and initiatives with goals and Watson analytics	5/15/2018	$15,000.00
Rivers, Nicholas	Harvesting optimal societal health benefits from climate policies	8/1/2020	$31,250.00
Saatcioglu, Murat	Structural performance of damaged and CFRP strengthened aged RC beam and slab elements	8/15/2018	$579,265.00
Sartaj, Majid	Assessment and enhancement of biogas production from high nitrogen content organic waste (poultry manure) through ammonia stripping	5/7/2020	$44,000.00
Sartaj, Majid	Assessment of impacts of upstream developments and climate change on Carp River watershed	9/15/2019	$30,000.00
Sayari, Abdelhamid	Advanced CO_2 capture materials	12/1/2019	$260,000.00
Sayari, Abdelhamid	Carbon capture materials	5/1/2019	$210,000.00
Scaiano, Juan	Anti-fog coating detection	7/1/2018	$25,000.00
Schneider, David	Applied thermochronology and the timing of brittle-ductile crustal-scale tectonic processes	4/1/2019	$307,000.00
Schoenberger, Laura	Sand grabbing: Disentangling land, water and sand to reveal new struggles for territory	6/1/2018	$10,000.00

PI Name	Project Title	Start Date (DD/MM/YYYY)	Amount Awarded
Schoenberger, Laura	Sand grabbing: Disentangling land, water and sand to reveal new struggles for territory	6/1/2018	$140,000.00
Seidou, Ousmane	Contribution to the BAMGIRE project	12/1/2019	$15,158.00
Seidou, Ousmane	Decision support systems (DSS) for wather management in the inner Niger delta and upper Niger basin	3/1/2018	$104,887.50
Stalcup, Mary Margaret	Viral conspiracies: An anthropology of rumour, media, and emerging infectious diseases in Brazil	6/1/2018	$67,018.00
Standen, Emily	Understanding adaptive mechanisms in locomotion by integrating motor control, tissue performance, and mechanical constraint	4/1/2020	$235,000.00
Van Wychen, Wesley	Go-Ice: glacier-ocean-iceberg dynamics in a changing Canadian Arctic	4/1/2019	$22,000.00
Vanapalli, Sai	Towards a unified unsaturated soil mechanics framework for interpretation of frozen and unfrozen soils	4/1/2020	$260,000.00
Viau, André	(UROP) Multi-scale paleoclimates	1/1/2018	$500.00
Vitoroulis, Irene	Peer relationships and psychosocial outcomes among immigrant, refugee, ethno-cultural, racialized and non-racialized adolescents: individual and contextual influences	7/1/2019	$35,000.00
Walker, Brett	Advanced radiocarbon dating and molecular-level tools for evaluating marine carbon cycling in the Canadian Arctic	4/1/2020	$12,500.00
Walker, Brett	Advanced radiocarbon dating and molecular-level tools for evaluating marine carbon cycling in the Canadian Arctic	4/1/2020	$175,000.00
Weber, Jean-Michel	*Survivre au manque d'oxygène: Adaptations métaboliques des champions de la tolérance à l'hypoxie*	6/1/2018	$15,000.00
Weck, Arnaud	High speed manufacturing of laser-textured surfaces for visible-light plasmon-enhanced CO_2 conversion	4/1/2019	$140,000.00
Wesche, Sonia	Learning from and enhancing community capacity for climate change and food security (C4FS) action in the NWT	7/1/2019	$72,500.00
Wesche, Sonia	Northern research leadership camp	5/1/2019	$16,000.00
Wesche, Sonia	Water security for Northern peoples: An interdisciplinary approach to understanding the influence of environmental change on freshwater sustainability	3/1/2019	$96,750.00
Wesche, Sonia	Kluane First Nation Research Summit: Fostering reconciliation, relationships, and two-way knowledge mobilization	11/1/2018	$49,800.00
Woo, Tommy	Computational high throughput screening methods and data driven materials design	4/1/2019	$395,000.00
Young, Nathan	FAIRCoast - Facilitating integrated and responsive coastal governance	1/1/2019	$70,250.00



Projects supported by the uOttawa Clean Innovation Research Fund

Only projects started in 2017 or later have been included in this list.

	PROJECT PI AND TITLE	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	TOTAL
NSERC CREATE	Karin Hinzer - Clean Tech	$150,000	$300,000	$300,000	$300,000	$300,000	$300,000	$1,650,000
	Daniel Figeys - water treatment	$150,000	$300,000	$300,000	$300,000	$300,000	$300,000	$1,650,000
	Roberto Chica - Advanced Protein Engineering (Environment)		$146,500	$297,500	$301,000	$302,000	$301,000	$1,348,000
	Mark Hannington - Marine Geodynamics and Georesources (New energy, Environment)				$150,000	$300,000	$300,000	$750,000
Fulbright Visiting Research Chairs (US$25k/chair/yr)	IE - Institute of the Environment 1				$33,000			$33,000
	IE - Institute of the Environment 2				$33,000			$33,000
	IE - Institute of the Environment 3				$33,000			$33,000
Visiting Researchers Program - VRP	Ioan Nistor - Prevention of Natural Disasters under Climate Change w. Waseda University, Japan				$3,500			$3,500
	F. Gagosz - Eco-friendly catalysis w. Technion, Israel			$4,000				$4,000
UROP – Undergraduate Research Opportunity Program	**Supervised students**							
	Saleh Bichara Senoussi			$1,500				$1,500
	Faris Aljerjawi			$1,500				$1,500
	Jaewon Bae		$1,500					$1,500
	Kim Alain Kazenga		$1,500					$1,500
	Sarah Kobeissi		$1,500					$1,500
	Boris Mazimpaka		$1,500					$1,500
	Isa-Bella Leclair		$1,500					$1,500
MITACS GRAs - Globalink Research Awards	**Supervised students**							
	Stephen Mosher			$6,000				$6,000
	Amanda Lewis			$6,000				$6,000
	Peter Soroye		$6,000					$6,000

	PROJECT PI AND TITLE	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	TOTAL
NSERC USRA - Undergraduate Student Research Awards	**Supervised students**							
	Roslin Chen			$6,750				$6,750
SSHRC Partnership Grant	Stewart Elgie	$44,000	$29,000	$29,000	$10,000	$10,000	$10,000	$132,000
RDP-Research Development Program	Raphael St-Gelais - Energy Conversion	$10,000						$10,000
	Pascale Cornut St-Pierre - le cas des obligations vertes (Climate Change)		$10,000					$10,000
	Stephanie Guilherme - Water treatment (Sustainability)			$20,000				$20,000
Institute of the Environment		$127,000	$233,714	$252,234	$251,070			$864,018
Centre for Environmental Law and Global Sustainability		$10,000	$10,000	$10,000	$10,000			$40,000
University Research Chairs	Pascal Audet - Solid Earth Chairs Geophysics	$25,000	$25,000	$25,000	$25,000			$100,000
	Trevor Hall - Photonic Circuits and Integration	$25,000	$25,000	$25,000	$25,000	$25,000		$125,000
	Jeremy Kerr - Macroecology and Conservation Biology	$25,000	$25,000	$25,000	$25,000	$25,000		$125,000
	Luke Copland - Glaciology	$25,000	$25,000	$25,000	$25,000	$25,000		$125,000
	Chibuike Udenigwe - Food Properties and Nutrient Bioavailability		$25,000	$25,000	$25,000	$25,000		$100,000
	Deryn Fogg - Homogeneous Catalysis (Sustainable Environment)	$25,000	$25,000	$25,000	$25,000			$100,000
	Karin Hinzer - Photonic Devices for Energy (Renewable Energy, Sustainable Environment)			$25,000	$25,000	$25,000		$75,000
	Nicolas Corradi - Microbial Genomics (Sustainable Environment)				$25,000	$25,000		$50,000
Canada 150 Research Chair	Carolyn Fischer - Climate Economics, Innovation and Policy		$100,000	$100,000	$100,000	$100,000		$400,000

	PROJECT PI AND TITLE	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	TOTAL
Canada Research Chairs	Jackie Dawson - Environment, Society and Policy	$45,000	$45,000	$45,000	$45,000			$180,000
	Nicholas Rivers - Climate and Energy Policy	$40,000	$40,000	$40,000	$40,000			$160,000
	Ghassan Jabbour - Engineered Advanced Materials and Devices	$50,000	$50,000	$50,000	$50,000	$50,000		$250,000
	Laurie Chan - Toxicology and Environmental Health	$50,000	$50,000	$50,000	$50,000	$50,000		$250,000
	Anthony Heyes - Environmental Economics	$50,000	$50,000	$50,000	$50,000	$50,000		$250,000
	Kelly Bronson - Science and Society		$30,000	$30,000	$30,000	$30,000		$120,000
	Tom Baker - Catalysis Science for Energy Applications (Sustainable Environment)	$50,000	$50,000	$50,000	$50,000	$50,000		$250,000
	Carole Yauk - Genomics and the Environment				$35,000	$35,000		$70,000
	Brett Walker - Accelerator Mass Spectrometry (Sustainable Environment)		$30,000	$30,000	$30,000	$30,000		$120,000
	Benoit Lessard - Advanced Polymer Materials and Organic Electronics (Sustainable Environment)	$30,000	$30,000	$30,000	$30,000	$30,000		$150,000
	Stephen Newman - Sustainable Catalysis (Sustainable Environment)	$30,000	$30,000	$30,000	$30,000	$30,000		$150,000
University infrastructure spending	Clément Bataille - Development and application of isotope tracers for geolocation and surface hydrology				$134,470			$134,470
	Marina Cvetkovska - Elucidating the basis of photosynthetic adaptations to extreme conditions			$52,536				
	Alyson MacLean - Elucidating the role of effector proteins in promoting arbuscular mycorrhizal symbiosis		$28,288	$60,364				
	Rajendhran Rajakumar - Ecological Evolutionary Developmental Genetics: flies and ants as model and supermodel organisms				$16,286			
TOTAL		**$1,026,000**	**$1,791,002**	**$2,097,384**	**$2,385,326**	**$1,817,000**	**$1,211,000**	**$10,170,238**