

## SUSTAINABILITY IN RESEARCH

### Committee Membership<sup>1</sup>

Chair: David Ward (Knowledge Broker, Direction Office of Research)

Coordinator: Rebecca Tittler (Lecturer, Department of Biology; Lecturer and Coordinator, Loyola College for Diversity and Sustainability; Research Administration Coordinator, Loyola Sustainability Research Centre)

Membership:

- Ali Nazemi (Assistant Professor, Building, Civil, and Environmental Engineering)
  - Carmela Cucuzzella (Associate Professor, Design and Computation Arts; Concordia University Research Chair in Integrated Design, Ecology, And Sustainability (IDEAS) for the Built Environment)
  - James Grant (Professor, Biology)
  - Katharine Hall (Reference & Subject Librarian, Library)
  - Mark Underwood (CEO, Sustainability Action Fund)
  - Pedro Peres-Neto (Professor, Biology)
  - pk langshaw (Department Chair and Professor, Design and Computation Arts; Fellow, Loyola College for Diversity and Accessibility)
  - Shannon Lloyd (Assistant Professor, Management)
  - Vanessa Macri (General Coordinator, Sustainable Concordia)
- As of January 2019: Tara McGowan-Ross (General Coordinator, Sustainable Concordia)*

### Preamble

According to Concordia’s definition of sustainability, crucial to the concept is “a long-term perspective ...and balance [between] the interconnected nature of our environment, society and economy”. Common conceptions of sustainability involve working at the intersection of social, ecological/environmental, and economic sustainability to affect positive change. With this in mind, impactful research in sustainability must involve collaboration or engagement across these three spheres. Within the University structure, this implies collaboration or engagement across disciplines, which includes across faculties. The targets and strategies below reflect this focus on collaboration across disciplines.

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<sup>1</sup> Note that titles reflect members’ designated roles at the time of their work on the committee.

## Our Vision for 2040

By 2040, Concordia will foster an institutional culture that establishes Concordia as a recognized world leader in (a) sustainability research with meaningful effects on society; and (b) sustainable research practices.

## Current Situation at Concordia

At present, there are many researchers working on sustainability in various departments and faculties at Concordia, although the exact number is unknown due to a lack of applicable metrics. Explore Concordia lists 209 Concordia researchers who self-identify with some form of sustainability<sup>2</sup>, spanning all four faculties (Fig. 1).

### Sustainability Researchers by Faculty

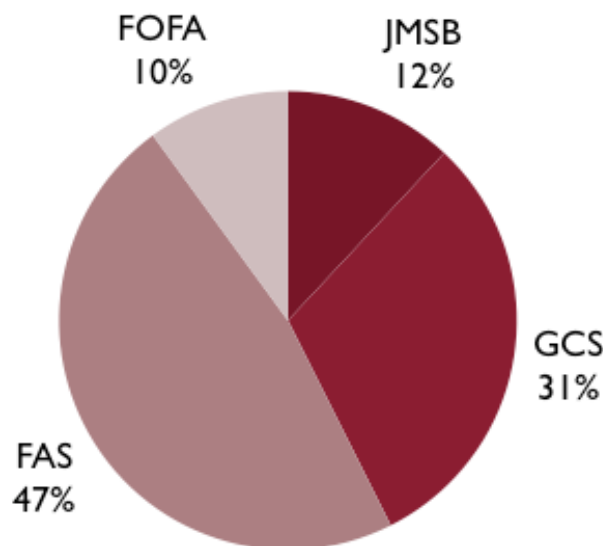


Figure 1. Full-time Concordia faculty members doing sustainability research by faculty.

Full-time researchers in sustainability currently account for more than a quarter of the 90 research chairs at Concordia<sup>3</sup>. These chairs also span across all four faculties.

<sup>2</sup> Based on a search in Explore Concordia by the Office of VP, Research and Graduate Studies in April 2020.

<sup>3</sup> According to the list posted on the Concordia Research Chairs webpage (<https://www.concordia.ca/research/chairs.html>), accessed on September 25, 2020.

Of the full-time sustainability researchers, almost half are associated with one of three sustainability-related research centres at the University (Fig. 2).

## FULL-TIME SUSTAINABILITY RESEARCHERS BY RESEARCH CENTRE ASSOCIATION

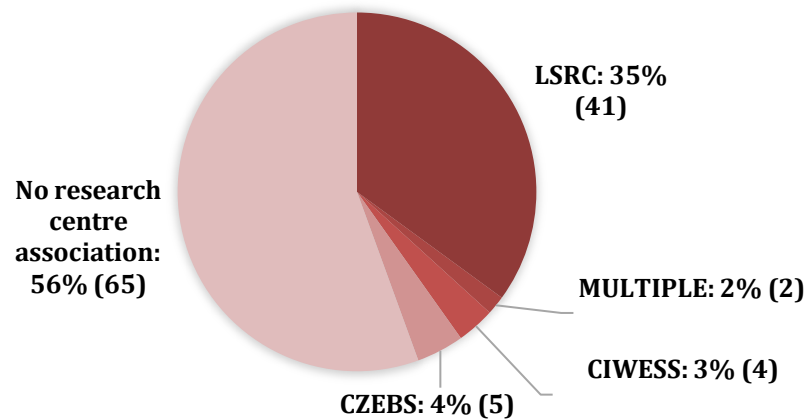


Figure 2. Full-time Concordia faculty members doing sustainability research by research centre association. Researchers were as described in Figure 1. LSRC stands for Loyola Sustainability Research Centre; CIWESS, for Concordia Institute of Water, Energy and Sustainable Systems; and CZEBS, for Centre for Zero Energy Building Studies

The largest number (35%) of full-time sustainability researchers are associated with the Loyola Sustainability Research Centre (LSRC), a network of 42<sup>4</sup> full-time faculty members and over two dozen graduate students, as well as almost 20 part-time lecturers and external associates working in the general field of sustainability. This includes 10 research chairs. The LSRC’s operating budget consists of one permanent part-time coordinator, and they raise funds from other units on a case-by-case basis for specific events. That said, LSRC is by far the largest sustainability research centre at Concordia and the only one with membership from all four faculties, although it is housed in the Faculty of Arts and Science (FAS). It also includes two members of the Concordia Institute of Water, Energy and Sustainable Systems (CIWESS).

Approximately 5% (6) of sustainability researchers are associated with CIWESS, a Senate-approved research centre. All of these researchers currently hold research chairs. This group focuses on developing engineering-based solutions for water, energy, and resource conservation. Members include four professors from the Gina Cody School and two from FAS, as well as four engineering professors from other universities in Canada. With funding from NSERC, CIWESS is currently one of two externally-funded sustainability research centres at Concordia.

<sup>4</sup> Note that only 41 of the 42 full-time members of the LSRC self-identify using sustainability keywords in Explore Concordia

Approximately 4% (5) of sustainability researchers are associated with the other externally-funded, Senate-approved centre, the Centre for Zero Energy Building Studies (CZEBS). This centre includes a total of 6 full-time and 2 affiliated Gina Cody School faculty members, five of whom self-identify as doing sustainability-related research according to Explore Concordia. Three of these five researchers include research chairs. Almost all of those members listed on Explore Concordia include *sustainable design* as a keyword. CZEBS has funding from NSERC and Hydro Quebec.

There is considerable overlap between researchers working on cities and other urban issues and those working on sustainability. Over 28% (33) of full-time faculty members who self-identify with sustainability-related keywords in Explore Concordia also self-identify using cities- or urban-related keywords<sup>5</sup>. Close to 27% of full-time faculty members in this overlapping category belong to the LSRC, over 15% to CIWESS, and over 9% to CZEBS.

In terms of funding or research-related output, there are currently no readily-available data to use to assess the situation at Concordia.

As noted in the Preamble, collaboration across disciplines is crucial to effective, impactful research in the field of sustainability. Although the LSRC includes members from all four faculties and all four faculties have contributed to its annual Sustainability Across Disciplines Conference, it is only supported by one of the four faculties. Currently, faculty cannot be credited or compensated for co-supervision of graduate students across faculties, although much of the important research at any University is carried out through graduate students. The strategies described below therefore focus on facilitating collaboration across faculties such that Concordia's sustainability research may be more impactful.

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<sup>5</sup> Based on a keyword search for the following keywords in Explore Concordia on January 25, 2020: *cities, smart cities, urban planning, urban infrastructure, urban futures, and urban biodiversity*.

## Five-year Targets and Strategies

### 2020-2025 | ADVANCE INTERDISCIPLINARY RESEARCH OPPORTUNITIES IN SUSTAINABILITY

Develop a framework to support interdisciplinary sustainability research at Concordia

Strategy 1	Map existing sustainability research activities, strengths, and resources within the University
Strategy 2	In consultation with key stakeholders, coordinate the development of a supportive framework to extend and enhance interdisciplinary sustainability networking, collaboration, and research
Strategy 3	Develop an interdisciplinary graduate program in sustainability that allows co-supervision and mentorship from all four Faculties ( <a href="#">Curriculum Strategy 6</a> )

### 2020-2025 | INCREASE INSTITUTIONAL INCENTIVES AND SUPPORT

Increase financial and operational support for faculty and students engaged in sustainability research

Strategy 4	Plan for new strategic faculty hires in sustainability
Strategy 5	Generate internal funding for new sustainability-related student, faculty or postdoctoral research projects across disciplines
Strategy 6	Provide grant application support for interdisciplinary sustainability researchers

### 2020-2025 | ENHANCE RESEARCH IMPACT

Promote and enhance Concordia research to enrich local, Canadian, and International communities

Strategy 7	Recognize community partnerships as eligible for internal Team Start-up and Accelerator funding offered through the Office of the Vice-President, Research and Graduate Studies
Strategy 8	Create a dynamic online system for cataloguing sustainability research and partnerships at Concordia. The system would make it possible to search, categorize, visualize, and obtain metadata about sustainability research at Concordia, while also serving as a conduit between aligned researchers and external communities.
Strategy 9	Connect Concordia sustainability research expertise with pre-university institutions
Strategy 10	Connect research expertise to develop sustainable practices and curriculum within the University ( <a href="#">Curriculum Strategy 4</a> )
Strategy 11	Begin a campus-wide discussion about the recognition of alternative metrics of research impact for hiring and promotion that align with community partnerships
Strategy 12	Support student and faculty researchers in knowledge mobilization of sustainability research, including training on best practices for communicating research findings and

assistance for preparing their research for conferences and events.

Strategy 13 Provide support for conferences and events that increase the visibility of sustainability research at Concordia

## 2020-2025 | ESTABLISH AND PROMOTE SUSTAINABLE RESEARCH PRACTICES

Monitor and reduce the ecological footprint of research, dissemination, and related activities conducted on and off campus

Strategy 14 Create an equipment-sharing platform that provides users with access to shared and/or affordable research and lab equipment internal to Concordia ([Waste strategies 4, 13](#))

Strategy 15 Develop a protocol for encouraging carbon neutral research practices and travel ([Climate Strategies 5, 11, 18](#))

Strategy 16 Encourage projects designed to increase the sustainability of research at Concordia

Strategy 17 Encourage Concordia Sustainable Events certification program for all Concordia research events on campus ([Food Strategy 3](#)) ([Waste Strategy 12](#))

## 2020-2025 | PROGRESS MEASUREMENT PLAN

Measure progress of sustainability in research at Concordia

A Produce annual reports quantifying sustainability research output and funding levels at Concordia

B Map and track success in internal and external funding for sustainability research involving community partners to help quantify impact of Concordia research

C Produce annual reports quantifying representation of Concordia sustainability research in the media

D Map, monitor, and publish public annual reports on the environmental footprint of Concordia research practices

## Appendix A. Table of information

Category of strategies		Strategy	Unit(s) Responsible	Status	Project start year
<b>Coordinate, consolidate, and showcase sustainability research across the University</b>	1	Map existing sustainability research activities, strengths, and resources within the University	Office of the Vice-President, Research and Graduate Studies (OVPRGS)	Ongoing	2020-2021
	2	In consultation with key stakeholders, coordinate the development of a supportive framework to extend and enhance interdisciplinary sustainability networking, collaboration, and research	OVPRGS	Ongoing	2020-2021
	3	Begin development on an interdisciplinary graduate program in sustainability that allows co-supervision and mentorship from all four Faculties	OVPRGS; Office of the Provost	Not started	2023-2024
<b>Increase institutional incentives and support</b>	4	Plan for new strategic faculty hires in sustainability	Office of the Provost; Faculty Deans	Ongoing	2021-2022

# Sustainability Action Plan 2020-2025 | Research



Category of strategies		Strategy	Unit(s) Responsible	Status	Project start year
	5	Generate internal funding for new sustainability-related student, faculty or postdoctoral research projects across disciplines	OVPRGS	Not started	2021-2022
	6	Provide grant application support for interdisciplinary sustainability researchers	OVPRGS	Not started	2022-2023
<b>Enhance research impact</b>	7	Recognize community partnerships as eligible for internal Team Start-up and Accelerator funding offered through the Office of the Vice-President, Research and Graduate Studies	OVPRGS	Not started	2021-2022
	8	Create a dynamic online system for cataloguing sustainability research and partnerships at Concordia. The system would make it possible to search, categorize, visualize, and obtain metadata about sustainability research at Concordia, while also serving as a conduit between aligned researchers and external communities.	OVPRGS	Ongoing	2021-2022
	9	Connect Concordia sustainability research expertise with pre-university institutions	Office of the Provost; Office of Advancement and Alumni Relations	Not started	2020-2021



# Sustainability Action Plan 2020-2025 | Research



Category of strategies		Strategy	Unit(s) Responsible	Status	Project start year
	10	Connect research expertise to develop sustainable practices and curriculum within the University	Office of Sustainability; Office of the Provost; Faculties	Ongoing	2020-2021
	11	Begin a campus-wide discussion about the recognition of alternative metrics of research impact for hiring and promotion that align with community partnerships	Departments; Faculties; CUFA; Office of the Provost	Ongoing in a few departments	2022-2023
	12	Support student and faculty researchers in knowledge mobilization of sustainability research	UCS; OVPRGS	Not started	2021-2022
	13	Provide support for conferences and events that increase the visibility of sustainability research at Concordia	OVPRGS	Not started	2020-2021
<b>Establish and promote sustainable research practices</b>	14	Create an equipment-sharing platform that provides users with access to shared and/or affordable research and lab equipment internal to Concordia	Financial Services; IITS; OVPRGS; EH&S	Not started	2022-2023

# Sustainability Action Plan 2020-2025 | Research



Category of strategies		Strategy	Unit(s) Responsible	Status	Project start year
	15	Explore options to develop a protocol for carbon neutral research practices and travel	OVRPGS; Financial Services; Office of Sustainability	Not started	2022-2023
	16	Encourage projects designed to increase the sustainability of research at Concordia	OVRPGS; Loyola College for Diversity and Sustainability	Ongoing	2021-2022
	17	Encourage Concordia Sustainable Events certification program for all Concordia research events on campus	Hospitality; Office of Sustainability; OVRPGS	Not started	2022-2023
Progress measurement plan	A	Produce annual reports quantifying sustainability research output and funding levels at Concordia	OVRPGS	Not started	2020-2021
	B	Map and track success in internal and external funding for sustainability research involving community partners to help quantify impact of Concordia research	OVRPGS	Not started	2021-2022

# Sustainability Action Plan 2020-2025 | Research



Category of strategies		Strategy	Unit(s) Responsible	Status	Project start year
	C	Produce annual reports quantifying representation of Concordia sustainability research in the media	OVPRGS; UCS	Not started	2021-2022
	D	Map, monitor, and publish public annual reports on the environmental footprint of Concordia research practices	Office of Sustainability, with the support of the Office of Research and Accounts Payable	Not started	2021-2022

## Appendix B. Glossary of terms

### **Sustainability research**

Scholarship that enhances our understanding and ability to “meet the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland 1987, p. 16).<sup>6</sup>

### **Sustainable research practices**

Research practices that minimize the environmental footprint of scholarship. Practices include those involved in carrying out research but also in the dissemination of research results.

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<sup>6</sup> Brundtland, G. H. (Ed.) 1987. Our common future. Report of the World Commission on Environment and Development. Oxford: Oxford University Press.

## Appendix C. Linkages with other stream plans

**Food strategy 3:** For each new approved caterers' contract request for proposals, increase the sustainability requirements. Ensure that these requirements that are aligned with the Sustainable Event Certification.

**Waste strategy 4:** Sustainable Asset Management: Implement clear procedures for sustainable asset management from the purchasing phase to the disposal phase, and consider ways to facilitate asset sharing

**Waste strategy 12:** Zero Waste Events: Standardize compost bin availability at all event venues and provide training to event coordinators, caterers, event space administrators, and custodial staff on zero waste event management. Encourage groups to adopt policies to exclude non-recyclable/non-compostable packaging while promoting reusable alternatives like the Dish Project. Encourage use of Sustainable Event certification by key stakeholders. Support the integration of volunteer waste-sorting and leftover donation assistance at event into University operations. Encourage bottle-free beverage infrastructure and policies in event spaces.

**Waste strategy 13:** Zero Waste Labs: Identify opportunities to reduce and divert research and teaching laboratory waste with Environmental Health and Safety, the Teaching, Learning and Research Sustainability (TLRS) sub-committee, and other key stakeholders

**Climate strategy 5:** Include a sustainability clause within the new Travel Policy and develop procedures that encourage University members travelling for business and research to favour sustainable modes of transportation

**Climate strategy 11:** Equip new rooms with web conferencing hardware and software and launch a campaign around the use of web conferencing at Concordia

**Climate strategy 15:** Research and assess local options for offsetting our indirect emissions in the near and long term

**Curriculum strategy 4:** Encourage sustainability researchers to include sustainability research content in their courses

**Curriculum strategy 6:** Develop a new graduate program in sustainability