

# McMaster's Academic Sustainability Programs Office

## Annual Report 2021-2022

Photo location: Moraine Lake, Alberta, Canada  
Photo credit: Andy Holmes, Unsplash

**BRIGHTER WORLD**

Academic Sustainability  
Programs Office

McMaster  
University 

# Year in Review 2021/2022

**Addressing Sustainability in our society poses complex challenges that require interdisciplinary solutions.**

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Our mission in the Academic Sustainability Programs (ASP) Office is to inspire in all students a desire for continued learning and inquiry through experiential education. We have achieved this mission through our various curricular and co-curricular programs, in which students are provided with unique opportunities for interdisciplinary, student-led, community-based, and experiential learning about the complex issues of sustainability. On behalf of all faculty and staff in our program, I would like to express how proud we are of all the accomplishments our students have made. This year, students explored, researched and addressed topics such as waste, food insecurity, ecological conservation, and health equity.

Now, in its eighth year, the Interdisciplinary Minor in Sustainability is the fifth largest minor by number of graduates.<sup>1</sup> Since our last reporting in the fall of 2021, there have been twelve courses added to the Minor Course List, 54 more graduates with the Minor, and more than 2,700 students engaged through events and class talks led by the Student Minor Committee. The Sustainable Future Program has also seen substantial growth since the first course was offered in the winter of 2013. In response to continued demand, we expanded enrolment capacity, offered more sections of existing courses, and introduced a new course that will be offered for the first time as a SUSTAIN course in the fall of 2022. With this expansion, we anticipate that over 5,000<sup>2</sup> students, representing all Faculties and the Arts & Science Program, will successfully complete a SUSTAIN course in the 2022/23 academic year.

With three more student interns this year, the Sustainability Internship Program has supported 57<sup>3</sup> students to date in their self-directed learning. This year's interns have come from the Faculties of Sciences, Engineering, and Arts & Science, and they have focused on topics related to waste reduction, sustainability education and behaviour change, and environmental conservation.

To support our students' community-based, experiential learning, we continue to develop our relationships with the university and broader communities through our focus on collaboration, reciprocity, continuity, and active engagement. This past year, our students worked on 36 projects with more than 450 collaborators to advance our collective sustainability goals.

Momentum continues following the 2020 launch of the Student Sustainability Ambassador Program (SSAP), which is a co-curricular program and community hub for sustainability-minded students and student clubs. This past year, SSAP student Coordinators facilitated six events, engaged over 150 students, and collaborated with 13 clubs from across campus. The SSAP Facebook group has continued to grow to more than 200 members who use the platform to connect and engage.

Within the following pages, you will read about the growth and evolution of our programs, demonstrating resilience and creativity during the COVID-19 pandemic. The highlights are found in the project summaries written by our students. As you read about the work of our students and their collaborators, I hope you find inspiration in their stories, their teamwork, and their accomplishments in creating positive, sustainable change.



**Dr. Kate Whalen**  
Associate Director  
Academic Sustainability Programs Office

Note: This report is primarily the work of our students. Content not attributed to student authors is the work of Kate Whalen and Abbie Little of the ASP Office; we take responsibility for any errors or omissions. Creative design and production of this report is the work of Helena Teng and Grace Kuang of the ASP Office.

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# Land Acknowledgement

McMaster's Academic Sustainability Programs Office recognizes that it is located on the traditional territories of the Mississauga and Haudenosaunee nations, within the lands protected by the Dish with One Spoon Wampum agreement. It is integral to our work that we practice anti-racism and anti-colonialism, as we cannot achieve sustainability without centering climate justice and actively engaging in reconciliation efforts with Indigenous nations.

## About Us

### McMaster's Academic Sustainability Programs Office

#### Mission

Inspire in all students a desire for continued learning and inquiry through experiential education about sustainability.

#### Objectives

To realize our mission, we strive to provide all McMaster students with the opportunity to take part in interdisciplinary, student-led, community-based, and experiential learning about sustainability.

#### Priority Programs

Key to achieving our objectives and inspiring lifelong learning is developing and fostering strong connections, both within the University and the broader communities, and supporting students to develop the knowledge, skills, and abilities to be successful in their learning.

We aim to do this through our four main programs:



#### Interdisciplinary Minor in Sustainability

An opportunity for undergraduate students to choose from sustainability courses from Faculties across campus and tailor a minor that complements their degree and education.



#### Sustainable Future Program (SUSTAIN)

A suite of undergraduate courses focused on sustainability. Courses are open to all students, independent of their home Faculty, and count towards the Minor.



#### Sustainability Internship Program

An opportunity for undergraduate and graduate students to receive academic credit (undergraduates) or recognition (graduate students) for their self-directed learning.



#### Student Sustainability Ambassador Program (SSAP)

A co-curricular program and community hub for sustainability-minded undergraduate and graduate students and clubs aimed to foster collaboration.

# Our Students in the News

Learn more about these news stories on our [website](#).

## DAILY NEWS

Sustainability Month at McMaster begins with a spark



Students join together at first-ever SSAP Bonfire Social.  
Photo credit: Gabriel Louuzzo.

## DAILY NEWS

McMaster joins Canada's Sustainable Development Solutions Network



## DAILY NEWS

Bees knees student project wins sustainability prize



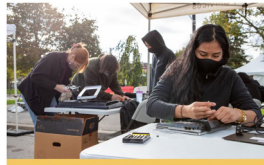
From left: Assistant Vice-President and Chief Facilities Officer, Debbie Martin; Science student, Samara Hasan;



globalnews.ca  
Global News  
CANADA  
**McMaster group to combat food insecurity with launch of community fridge in early 2022**  
By Don Mitchell · Global News  
Posted December 13, 2021 6:41 pm EST

## DAILY NEWS

10 ways Mac students made the world brighter in 2021



McMaster students sort through donated technology as part of the October 2021 Access Tech event, a partnership between third year students, Facility Services, UTS and

## DAILY NEWS

Student-led community fridge to launch on campus needs your support



## DAILY NEWS

Coming to campus? Don't forget to bring your own water bottle



Sustain 3S03 undergraduate students with their Community Project Champions Monica Paikowski, living learning coordinator, Housing & Conference Services and

## DAILY NEWS

Ways to celebrate Earth Day on campus



Friday, April 22 is Earth Day, and McMaster's community is invited to get involved and do something positive for the planet — in person or online.

BY MEGAN BIEKSA, FACILITY

## DAILY NEWS

Sustainability students help McMaster buy better



Sustainability students, Aryan Patel, Joy Xu, and Helena



HAMILTON SPECTATOR  
Subscribe Now  
Computers recycled as part of Earth Day initiative at Mac  
At the last event, students, University Technology

## DAILY NEWS

Meet McMaster's Community Fridge



Sufal Deb, with the McMaster Community Fridge, a student-led project that will open on Earth Day (Friday, April 22nd) for anyone in the community to take what they

## DAILY NEWS

Students write playbook that helps women, trans and gender diverse individuals experiencing homelessness access health care



# Our Team

The Academic Sustainability Programs Office

## Administrative Team



**Dr. Kate Whalen**  
Associate Director



**Abbie Little**  
Community Engagement  
Coordinator



**Grace Kuang**  
Student Communications  
Coordinator



**Helena Teng**  
Student Office  
Coordinator



**Gabriel Lonuzzo**  
Student Communications  
Assistant



**Erik Jurriaans**  
SSAP Coordinator

## Faculty Team



**John Maclachlan**  
SUSTAIN 1S03 + 2GS3  
Instructor



**Peter Topalovic**  
SUSTAIN 2S03 + 3SS3  
Instructor



**Sarah Precious**  
SUSTAIN 2SS3 Instructor



**Dr. Kelsey Leonard**  
SUSTAIN 2IS3 Instructor



**Liana Bontempo**  
SUSTAIN 3S03 Instructor



**Dr. John Boakye-Danquah**  
SUSTAIN 2SD3 Instructor



**Dr. Kate Whalen**  
SUSTAIN 4S06 Instructor

## Interdisciplinary Minor in Sustainability, Co-Chairs



**Dr. Kate Whalen**  
Associate Director  
Academic Sustainability  
Programs Office



**Dr. Brent McKnight**  
Associate Professor  
Degroote School of Business

# Teaching Assistants



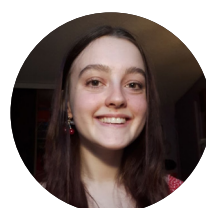
**Alexa Hookey**  
SUSTAIN 1S03



**Anjali Joshi**  
SUSTAIN 1S03



**Desmond Kennedy**  
SUSTAIN 1S03



**Emilia Nietresta**  
SUSTAIN 1S03



**Gabriel Lonuzzo**  
SUSTAIN 1S03



**Joseph Clinton**  
SUSTAIN 1S03



**Kunwar Karim**  
SUSTAIN 1S03 + 2SD3



**Michelle Mariaprabhu**  
SUSTAIN 1S03



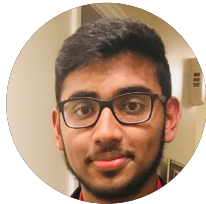
**Mubariz Maqsood**  
SUSTAIN 1S03 + 3S03



**Neetu Liz John**  
SUSTAIN 1S03



**Rebecca Gysbers**  
SUSTAIN 1S03



**Danish Mohammed**  
SUSTAIN 1S03



**Sandra Alexander**  
SUSTAIN 1S03 + 3S03



**Sandy Lin**  
SUSTAIN 1S03



**Sarah Woods**  
SUSTAIN 1S03



**Sarun Balaranjan**  
SUSTAIN 1S03



**Shobica Sritharan**  
SUSTAIN 1S03



**Sneha Wadhvani**  
SUSTAIN 1S03



**Thushitha Gnanamuttu**  
SUSTAIN 1S03



**Aniq Chaudhry**  
SUSTAIN 2S03



**Erin Nunn**  
SUSTAIN 2S03



**Fiona Sharpe**  
SUSTAIN 2S03 + 2SS3



**Mann Badami**  
SUSTAIN 2S03 + 3SS3



**Rachel Badzioch**  
SUSTAIN 2IS3



**Alison Laurie**  
SUSTAIN 2IS3



**Natalia Laxamana**  
SUSTAIN 2SD3



**Kiran Bassi**  
SUSTAIN 2SS3



**Natalie Ciancone**  
SUSTAIN 4S06

# A Focus on the United Nations Sustainable Development Goals

McMaster is consistently recognized by Times Higher Education’s international rankings as a university with a positive impact related to the UN’s Sustainable Development Goals (SDGs). In 2022, the university ranked sixth in the world for Good Health & Wellbeing (SDG 3). Among Canadian universities, McMaster placed first for Good Health & Wellbeing and second for both Reduced Inequalities (SDG 10) and Decent Work and Economic Growth (SDG 8).

***The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future.<sup>1</sup>***

United Nations, Department of Economic and Social Affairs

As part of our commitment to the Goals, we have indicated the SDGs that align with our student-led projects throughout this report. Listed below, are the **17 Goals**.





# Interdisciplinary Minor in Sustainability

An opportunity for undergraduate students to choose from a list of sustainability courses from Faculties across campus and tailor a minor that complements their degree and education.

McMaster created the Interdisciplinary Minor in Sustainability in September 2014 with the goal to develop students' interdisciplinary knowledge and understanding of sustainability.

## PROGRAM OBJECTIVES




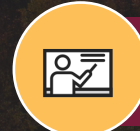
-  Encourage opportunities for student experiential learning about sustainability
-  Provide opportunities to meaningfully engage with communities both within and outside of McMaster
-  Offer a wide selection of courses to enable students to choose the sustainability emphasis that is right for them and to pursue courses that will further their individual learning objectives
-  Foster engagement among students, faculty, and staff across campus, facilitating interdisciplinary learning

Photo location: Gilan Province, Iran

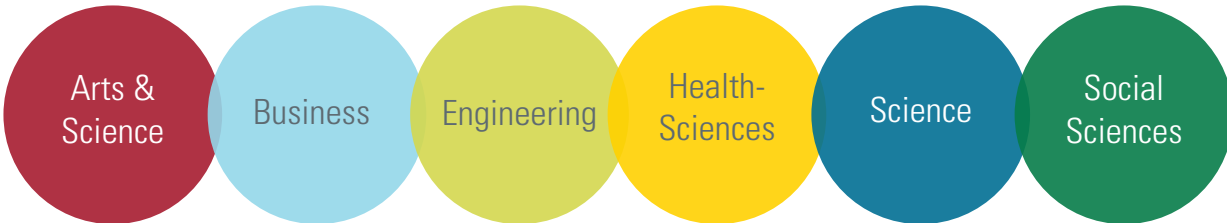
Photo credit: Sephr, Unsplash

# Interdisciplinary Minor in Sustainability

Year in Review

## Interdisciplinarity

Students from each of the following Faculties and the Arts & Science Program have graduated with the Minor this year:



## Collaborators

First and foremost, we recognize the **Arts & Science Program** for providing integral support for the implementation and development of the Minor — specifically, Arts & Science Director, Jean Wilson, and Academic Program Advisors, Shelley Anderson, Rebecca Bishop, and Ginni Dhaliwal. We welcome Beth Marquis as the new Director of the Arts & Science Program. Beth has served as a member of the Minor Committee, and we look forward to working with her in her new leadership role.

The Minor would not be possible without the hard work and dedication of the past and current members of the Interdisciplinary Minor in Sustainability Committee, including the Student Committee; the faculty members who have opened their courses for inclusion and helped communicate the Minor; the staff members, including academic advisors, who have provided advice and guidance throughout; and the dozens of students who have shown their support by taking the Minor and working with us through its development and continued enhancement.



Interdisciplinary Minors at McMaster Promotional Video

We would also like to thank Alpha Abebe, Karen Balcom, Rebecca Misiak, Rodrigo Narro Pérez, Shanti Morell-Hart, and Stacy Creech de Castro for their collaboration in creating a greater presence for interdisciplinary minors at McMaster. It was through the Office of the Vice-Provost, Teaching and Learning that this group came together under a common mission. One of the group's impactful outputs was the creation of a [short video](#) highlighting four interdisciplinary minors: Interdisciplinary Minor in Africa and Black Diaspora Studies, Interdisciplinary Minor in Community Engagement, Interdisciplinary Minor in Latin American and Latinx Studies, and the Interdisciplinary Minor in Sustainability. With the goal to inform and engage new and potential students early on, the video and promotional postcards were shared by each Faculty during the 2022 May@Mac event and on the university's YouTube channel (McMasterUTV). To continue to reach new and potential students, the group plans for Interdisciplinary Minors to have presence for the first time in the McMaster Viewbook, at the Ontario University Fair, and during the McMaster Fall Preview events.

**251**  
students have achieved the Interdisciplinary Minor in Sustainability

**54**  
students graduated with the Interdisciplinary Minor in Sustainability in the spring of 2022

**77**  
courses are available for students to choose from across all Faculties

## 2021/2022 Interdisciplinary Minor in Sustainability Committee

**Kate Whalen** (Co-Chair) - Associate Director, Academic Sustainability Programs Office

**Brent McKnight** (Co-Chair) - Associate Professor, DeGroot School of Business, Faculty of Business

**Shelley Anderson** - Academic Program Advisor, Arts & Science Program

**Luc Bernier** - Assistant Professor, School of Earth, Environment and Society, Faculty of Science

**Aubrey Cannon** - Professor, Anthropology, Faculty of Social Sciences

**Cameron Churchill** - Director, Engineering and Society, Faculty of Engineering

**Carlos Filipe** - Professor and Chair, Chemical Engineering, Faculty of Engineering

**Chad Harvey** - Associate Professor, School of Interdisciplinary Science, Faculty of Science

**Dean Mountain** - Professor, DeGroot School of Business, Faculty of Business

**Judy Major-Girardin** - Professor, School of the Arts, Faculty of Humanities

**Beth Marquis** - Associate Professor, Arts & Science and School of the Arts

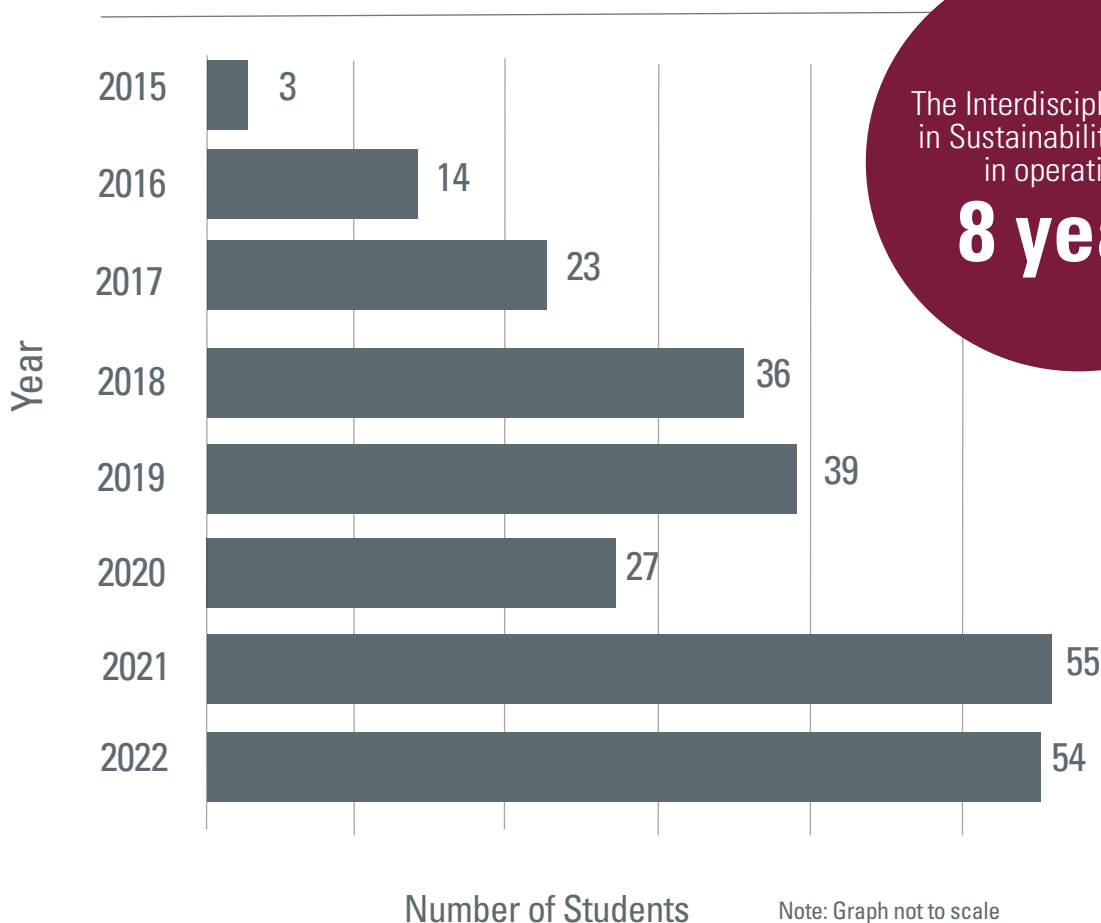
**Shanti Morell-Hart** - Assistant Professor, Anthropology, Faculty of Social Sciences

**Susie O'Brien** - Professor and Chair, Department of English and Cultural Studies, Faculty of Humanities

**Stacey Ritz** - Assistant Dean of Education Services, Faculty of Health Sciences

We thank Cameron Churchill, Carlos Filipe, and Judy Major-Girardin for their valuable contribution to and service on the Minor Committee, and we mourn the passing of our late colleague and Committee member, Dean Mountain. We welcome Jim Cotton and Shelir Ebrahimi from the Faculty of Engineering; Addisu Lashitew from the Faculty of Business; and Derek Woods from the Faculty of Humanities, who have recently joined the Committee.

### Minor in Sustainability Graduates by Year



The Interdisciplinary Minor in Sustainability has been in operation for **8 years**

# Interdisciplinary Minor in Sustainability

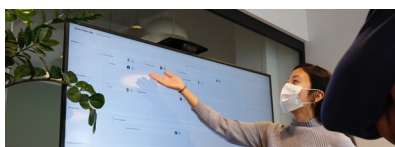
## Student Committee

**Student Authors:** Belinda Tam, Fiona Sharpe, Gabriel Lonuzzo, Grace Kuang, Madison Hough, Mann Badami, Roxann Forget, and Shunmathi Shanmugan

In September 2018, the Interdisciplinary Minor in Sustainability Student Committee was created and has expanded its reach and impact every year since.

The goals of the Student Committee are (1) to generate awareness of the Interdisciplinary Minor in Sustainability, and (2) to create a community amongst students pursuing the Minor.

## Objectives



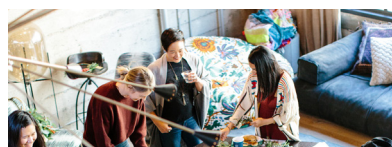
1

Promote the Minor through class talks and events



2

Increase the Minor's online presence through active participation on social media



3

Bring students together through co-hosting fun sustainability events

## Reporting

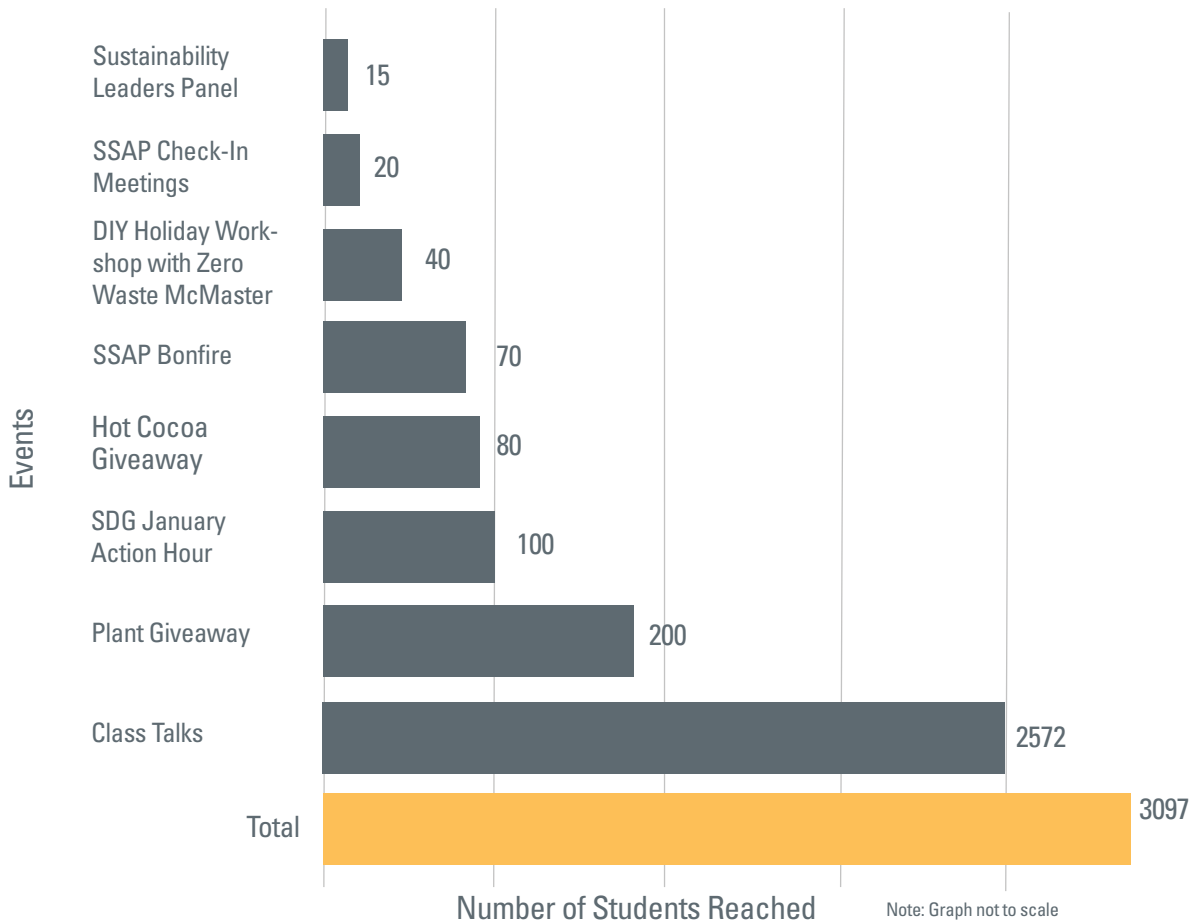
The 2021-2022 Student Committee consisted of eight undergraduate students representing each Faculty and the Arts & Science Program at McMaster. Coordinated by Abbie Little, the student Committee met weekly to put their ideas into action.

- Due to COVID-19 closures, the Committee focused on sharing content that could be viewed virtually. Committee members shared a two-minute video that discussed what the Minor was and how it could benefit the students' educational careers. The Committee members engaged 39 course instructors who shared the video with over 2,500 students through Avenue2Learn and during class.
- The Committee hosted two in-person events – a plant giveaway event in November and a free hot cocoa giveaway in March.
  - In collaboration with the Biology Greenhouse, 200 plants were propagated by the Committee and given away to event attendees. This event has been a huge success in previous years, with this event being the largest to date. Students were asked to follow @macustain in exchange for a plant, which resulted in 200 more Instagram followers. Committee members engaged in dialogue with the students about the Minor and handed out informational postcards. Some students shared that their program does not have a lot of elective space making it challenging to achieve the Minor. First and second year students shared that they had not previously heard about the Minor, signaling the need for greater communication.
  - In March, the Committee hosted a hot cocoa giveaway where students were invited to bring a thermos and chat with Committee members about the Minor. The Committee also ran a concurrent social media contest to win Apple AirPods/Bose earbuds. The goal of the event was to engage with students who may not be interested in sustainability and wanted a chance to win a big prize. More than 80 students attended the event, which had less dialogue than other events, but increased the @macustain Instagram following by over 300 accounts.
- One goal for next year's Minor Committee is to reach potential, incoming, and new students early on in their first year to let them know about the Minor, offer mentorship, and share resources for additional support.

## Collaborators

This was a year of incredible growth, overcoming challenges, and perseverance, and we are grateful for the individuals who helped through our journey. A special thank you goes to the Coordinator, Abbie Little, for making each meeting a joy to attend, for inspiring us to dream bigger, and for being a great mentor and leader. A thank you goes to Dr. Kate Whalen and Dr. Brent McKnight, Minor Committee Co-Chairs, for their guidance and support as well as the entire Minor Committee, the Office of Sustainability, and the McMaster Students Union. Thank you to the following individuals and groups for their collaboration on events including; the McMaster Biology Greenhouse and volunteers, Zero Waste McMaster, the MSU Food Collective Centre, the McMaster Community Fridge, SDSN Canada, Hospitality Services, and the Student Sustainability Ambassadors Program. Finally, thank you to the instructors who supported our work by playing the video in their classes.

## Student Committee Outreach 2021-2022



## Interdisciplinary Minor in Sustainability Student Committee 2021-2022



**Mann Badami**  
Health Sciences



**Roxann Forget**  
Science



**Madison Hough**  
Business



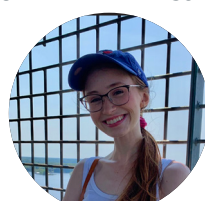
**Grace Kuang**  
Health Sciences



**Gabriel Lonuzzo**  
Engineering



**Shunmathi Shanmugam**  
Arts & Science



**Fiona Sharpe**  
Social Sciences



**Belinda Tam**  
Humanities

# Sustainable Future Program (SUSTAIN)

A suite of undergraduate courses focused on sustainability. Courses are open to all students, independent of their home Faculty, and count towards the Minor.

Developed in 2013, the Sustainable Future Program was created to provide students with opportunities for interdisciplinary, student-led, community-based, and experiential education about sustainability.

## PROGRAM OBJECTIVES



Teach students about sustainability from an interdisciplinary perspective



Provide opportunities for self-directed, interdisciplinary, and experiential learning



Support student learning within the university and local community



Engage undergraduate students to take part in meaningful, experiential research



Foster opportunities for students to place local knowledge and local action within a global context

Photo location: Werfenweng, Austria

Photo credit: Quaritsch, Unsplash

# Sustainable Future Program

## Year in Review

### Reporting

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Since launching the first course in the winter of 2013, which had an enrolment of 97 students, the Sustainable Future Program has grown to include eight courses and support more than 2,000<sup>1</sup> students as of the 2021/2022 academic year. The Program continues to grow each year, and enrolment is anticipated to exceed 5,000<sup>2</sup> students in 2022/2023.

Annual Program growth has taken place through expanding enrolment capacities of select courses, offering additional sections of existing courses, and adding new courses. This past year, we saw our highest enrolment of 540 students in the winter semester of our first-year course, *SUSTAIN 1S03 – Introduction to Sustainability*. Next year, we anticipate nearly 1,000 students enrolled in each of the fall and winter semesters of SUSTAIN 1S03. To support even more students, we have offered our courses multiple times each year and in different semesters. This past year, among all eight SUSTAIN courses, there were 16 sections available throughout five semesters. In 2022/2023 there will be nine SUSTAIN courses and 22 sections available. We are excited to introduce our newest SUSTAIN course, which was offered for the first time this past Intersession semester under the 'INSPIRE' course code. *SUSTAIN/INSPIRE 2GS3 – Global Questions in Sustainability* will be officially offered as a SUSTAIN course starting in the fall of 2022.

To contribute to sustainability on campus and in our communities, students from SUSTAIN 2SS3, 3S03, 3SS3, and 4S06 produced a total of 33 projects. Combined, these students collaborated with over 400 individuals to learn about sustainability through leadership and action. A sample of these projects can be found in the pages to follow.

### Collaborators

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We thank the faculty and staff members, course teaching assistants, and community partners for supporting students enrolled in the SUSTAIN courses, as well as for supporting continuous course and program development. Our sincerest appreciation extends to the hundreds of students who have contributed by taking courses and providing feedback for continuous improvement. We extend a special thanks to the Faculty of Engineering and the Engineering & Society Program for providing administrative support for the Sustainable Future Program. Specific individuals who supported our students' experiential learning projects are highlighted in the pages to follow.

# SUSTAIN 3S03

## IMPLEMENTING SUSTAINABLE CHANGE

SUSTAIN 3S03 engages students in exploring agency, leadership, and strategy effectiveness within the context of sustainability. The course includes interdisciplinary perspectives, experiential learning and community engagement projects.

**Liana Bontempo**  
Course Instructor



*"SUSTAIN 3S03 didn't feel like traditional schoolwork, but was more similar to real life work or collaboration experiences. It was an eye-opening semester."*

Edward Kang, Engineering

Photo location: Munkebu, Norway

Photo credit: Guillaume Briard, Unsplash



# Cultivating a Sustainable Future: Educating Youth and Planting Trees

## Student Authors

**Alison Laurie**, Social Sciences | **Astara Truman**, Business  
**Areeb Iqbal**, Business | **Kleiton Strobl**, Science  
**Massimo Iacobucci**, Business | **Syed Irfan**, Science

## Community Project Champions

**Wayne Terryberry**, Coordinator of Natural Lands & Outdoor Recreation, Nature at McMaster

**Abbie Little**, Community Engagement Coordinator, Academic Sustainability Programs Office



SUSTAIN 3S03 student group at the McMaster Carbon Sink Forest planting event. From left: Syed Irfan, Areeb Iqbal, Alison Laurie, Astara Truman, Kleiton Strobl, Massimo Iacobucci  
Photo credit: Jaden Lall



## Overview

Carbon emissions are rising globally due to human activities, such as the burning of fossil fuels.<sup>1</sup> This has led to increased global temperatures resulting in environmental catastrophes, such as droughts and floods.<sup>2</sup> Overall, average annual temperatures have risen by almost 1.2 °C since 1880 globally<sup>3</sup> and by over 1.5 °C in Ontario specifically.<sup>4</sup>

One way to reduce atmospheric carbon is by creating 'carbon sinks', like forests, which capture more carbon than they produce.<sup>5</sup> In addition to sequestering carbon from the atmosphere, carbon sinks provide ecosystem services, such as wildlife shelter and shade, which also support global sustainability. Within the Hamilton community, our project aims to introduce a carbon sink forest at McMaster and educate youth on the benefits of trees. The overall goal was to cultivate action to combat climate change through education and engagement in planting trees.

## Objectives

1. Develop and facilitate an educational youth workshop
2. Design and post social media content about carbon sink forests
3. Host a community tree planting event

## Reporting

To achieve our first objective, we worked with Trees for Hamilton (TFH) and the McMaster Children and Youth University (MCYU) to develop and facilitate an educational workshop. 20 youth between the ages of 7-13 attended and learned about the importance of trees and how they benefit human health. The workshop included active participation from all attendees followed by engaging activities and a Q&A period led by our group.

To achieve our second objective, we conducted an Instagram takeover on the [@MacSustain](#) account introducing the project, our group, and members from the McMaster Centre for Climate Change (MCCC). We showcased the planting event, instructions on how to plant a tree, and the importance of carbon sink forests. Using polls in the Instagram stories, we tested viewers' knowledge on carbon sink forests. We created a recap post highlighting the success of the planting event (described below), which received 136 likes and reached 878 people as of December 7th 2021.

To achieve our third objective, in collaboration with the MCCC, TFH, and McMaster's Academic Sustainability Programs Office, we organized the first planting event of the new McMaster Carbon Sink Forest (MCSF). We exceeded our goal of 50 attendees by engaging a total of 70 community members, including McMaster staff and students, in the planting of 250 native trees from 11 species. We fulfilled our project goal through planting trees and educating community members on the importance of the climate crisis. The implementation of the MCSF will set an example for future generations.

## Collaborators

We would like to give a special thanks to our Community Project Champions, Abbie Little and Wayne Terryberry, for their continuous support and guidance throughout our project; Dr. Altaf Arain and the MCCC students; Noah Stegman from Nature at McMaster; Dr. Myles Sergeant from TFH; Jasmin Eng, Aaron Hubbell, and Dr. Sandeep Raha from the MCYU; and the SUSTAIN 3S03 instructional team including Sandra Alexander, Liana Bontempo, and Dr. Kate Whalen. Finally, we would like to thank the students, faculty, staff, and community members for attending and supporting our events, as without them all of this would not have been possible.

# Creating a Carolinian Garden Course

## Student Authors

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**Elizaveta Zvereva**, Arts & Science  
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## Community Project Champion

**Liz Koblyk**, Associate Director, Wilson Leadership Scholar Award



Pictured here is Dr. Allyn Walsh  
 Carolinian Gardener, Hamilton, ON  
 Photo credit: Lizbeth Teshler & Liza Zvereva

## Overview

In Southern Ontario, Canada’s Carolinian Zone is a region that covers less than 1% of Canada’s land area, but is essential to many native species.<sup>1,2</sup> Historically, 80% of the zone was covered by forests, but currently only 11% remains.<sup>1</sup> Conserving the zone is a priority because it contains one-third of Canada’s rare and endangered species.<sup>2</sup> Since 95% of the Carolinian Zone is privately owned, residents must help to restore and conserve the land.<sup>3</sup>

Working with our Community Project Champion (CPC) and gardening experts, the Carolinian Garden Course project aimed to develop a free, open-access course for new gardeners to help restore the Carolinian Zone. Through the course, individuals will gain knowledge about the Carolinian Zone, learn about various native plants they can add to their personal gardens, and receive additional resources to further engage conservation efforts.

## Objectives

1. Interview experts on their experiences and difficulties with Carolinian gardening
2. Create free, trustworthy, online course content about Carolinian gardening
3. Select an appropriate platform to publish our course

## Reporting

To satisfy our first objective, we interviewed five Carolinian gardeners. Gardeners shared wisdom and knowledge about their positive and negative experiences with native plants, and insight on how to get started with Carolinian gardening.

To fulfill our second objective, we created nine modules covering a range of topics inspired by the interviews. Each module pertained to a theme, contained knowledge from a local native plant expert, included a plant profile, and referenced online resources. These modules may be refined in the future prior to publication.

To meet our third objective, we thoroughly explored three publishing options (Coursera, World Wildlife Fund, and Carolinian Canada). We connected with the WWF to publish a video playlist. We also summarized our progress and established detailed next steps with our CPC. All content is accessible to our CPC through Teams and Dropbox to ease the transition between collaborators. The next phase of this project involves having another team finalize our content development and publish the course. We gave the lead to the WWF to collaborate with various institutions across Canada to proliferate our initiative in promoting sustainable gardening.

## Collaborators

We would like to give a huge thanks to our CPC, Liz Koblyk, for her incredible support. We would also like to extend our thanks to our interviewees, Sheelah, Allyn, Justin, Fiona, and Allan, for their time completing interviews. We would also like to thank Ryan from the WWF for his contributions to the proliferation of the project after the course is completed. Additionally, we thank Dr. Kate Whalen, from the Academic Sustainability Programs Office, and our instructional team, Liana Bontempo and Sandra Alexander for their guidance and feedback throughout the term. It was a great pleasure to work with all those involved, and we thank them for their time and patience in completing this project with us.

# Tree Equity: Engaging and Educating the Community Through the Hamilton Tree Equity Project



A green tree surrounded by residential houses  
Photo credit: Tomml, Unsplash

## Student Authors

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## Community Project Champions

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**Heather Govender**, Program Manager, Environmental Education, Green Venture



## Overview

Trees are a vital asset to communities by combating climate change, providing shade, and improving air quality.<sup>1</sup> Even though trees provide a myriad of mental and physical health benefits, trees are not equitably distributed in urban cities across North America.<sup>2</sup> Canopy coverage is significantly higher in neighbourhoods with higher incomes, continuing to perpetuate the socio-economic disadvantages faced by these communities as they lack access to the benefits trees provide.<sup>3</sup>

Hamilton's urban forest is not immune to these problems, with canopy coverage that is 8% lower than the average neighbouring cities and has an inequitable distribution of trees.<sup>4</sup> The goal of our project was to collaborate with Green Venture on their mission to create equity-focused plans and policies for Hamilton's urban forest on CityHousing Hamilton properties.<sup>5</sup>

## Objectives

1. Educate the Hamilton community on Tree Equity
2. Support the development and promotion of an online survey for CityHousing Hamilton residents
3. Provide resources for Hamilton residents on common local tree species

## Reporting

To educate the Hamilton community about Tree Equity, we created eight social media posts and shared one each week under the "Tree Tuesday" campaign on Green Venture's Instagram account. We highlighted information on topics including the environmental and health benefits of trees, green infrastructure, and the importance of protecting Hamilton's urban forest. In total, our posts reached 9,037 people with 565 likes, 36 shares, and 6 comments, as of December 6, 2021.

We assisted with the development of a survey, ensuring that it was accessible, concise, easy to understand, and had a high projected survey completion rate to increase participation. The survey was then added to a Google Form and distributed to CityHousing Hamilton residents by Green Venture. We also created a poster with information about the survey and its importance. Green Venture used this to further promote the survey and increase participation by distributing it at CityHousing Hamilton properties.

To provide resources on local tree species, we collaborated with Nature at McMaster to identify the most common tree species in Hamilton and then conducted independent research on how to identify them. We then created ten "Tree Cards", which are physical or digital information cards including an image of a tree species and related facts, such as height and other identifiable features. Green Venture plans to distribute the Tree Cards to CityHousing Hamilton residents and other community members to inform them about the importance of trees and Tree Equity.

## Collaborators

We would like to thank our Community Project Champions, Annabella Aoshana, Heather Govender, and the rest of the staff at Green Venture for their direction, resources provided on Tree Equity, and collaboration on reaching our objectives. Thank you to Liana Bontempo, Dr. Kate Whalen, Abbie Little, and Sandra Alexander of the Academic Sustainability Programs Office for their guidance and support throughout this project. We would also like to extend a special thank you to Wayne Terryberry and Noah Stegman from Nature at McMaster for their assistance and knowledge provided on Hamilton's tree species.

# Green Room Certification (GRC)

## Student Authors

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## Community Project Champions

**Katie Fitzgerald**, Archway Coordinator, Residence Life  
**Monica Palkowski**, Living Learning Coordinator, Residence Life



Green Room Certification Logo  
 Photo credit: Sanjoli, Maria, Luckshana, Sarah

## Overview

A current issue facing our global community involves waste management and disposal. In fact, 2.01 billion tonnes of municipal solid waste is generated by the world annually, and at least 33% of this is not handled in an environmentally safe manner.<sup>1</sup> This issue is addressed by one of the United Nations 17 Sustainable Development Goals that specifically concerns Responsible Consumption and Production.<sup>2</sup> The Green Room Certification Program (GRC) was initiated at McMaster in 2018 with the goal to educate first-year students living in residence on issues of sustainability.<sup>3</sup> The goal of our project was to improve students' current habits and inspire them to be more mindful of their consumption and waste production so that as a collective, we can work towards lowering our impact on the environment.

## Objectives

1. Evaluate students' current habits related to waste management
2. Create a media campaign to inform students about sustainable practices
3. Host a virtual event to provide resources for improving waste-management habits

## Reporting

To achieve our first objective, we surveyed 22 first-year students and found that over 95% encountered barriers to properly disposing their waste, such as a lack of knowledge regarding waste sorting and restrictions on the waste bins provided by residence buildings. Moreover, 90% reported interest in attending an event to learn how to improve their waste management habits.

Our second objective was executed through the McMaster Archway Instagram account where we informed students on mindful purchasing, upcycling previously used items, and proper recycling. We posted weekly infographics for four weeks and averaged 48 likes per post.

To achieve our third objective, we hosted a virtual Zoom event on November 18th. In total, 16 students attended our one-hour event and participated in a Kahoot game, DIY natural Goo Gone recipe tutorial, and science experiment exposing the harms of non-biodegradable packaging. Participants were also provided with several tips to help them improve their waste disposal habits and purchasing practices. To conclude our event, we ran a feedback survey and drew three names to receive a \$25 gift card of their choice. The results from our feedback survey showed that 90.9% of the students who attended our event were likely or very likely to implement the sustainable tips we provided into their lifestyle. Considering students left our event with a deeper understanding of mindful consumption and waste production, we feel that the GRC program was successful.

## Collaborators

We would like to extend a sincere thanks to our Community Project Champions, Katie Fitzgerald and Monica Palkowski, for their ongoing support and guidance throughout our project. Additionally, we would like to thank Dr. Kate Whalen from McMaster's Academic Sustainability Programs Office for her valuable insight; Zero-Waste McMaster for providing additional resources for our event; the Archway Program for allowing us to use their Instagram platform; and Mubariz Maqsood, our SUSTAIN 3S03 teaching assistant, for his pragmatic advice. We want to send our sincerest thanks to the first-year students who participated in our survey and event and for taking meaningful steps to improve their waste habits and reduce their impact on the environment.

# McMaster Community Fridge

## Student Authors

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## Community Project Champions

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**Zeinab Khawaja**, Health Promoter, Student Wellness Centre



Logo for the McMaster Community Fridge  
Photo credit: Kathlyn Cheng



## Overview

A community fridge is a 24/7, accessible food fridge complex that is stocked by the community for the community and exists in various locations within Hamilton. In March of 2019, about 23,000 visits were made to Hamilton Food Share sites<sup>1</sup>, which is about 8,677 households<sup>2</sup>. It was identified that McMaster University students may face food insecurity due to competing finances, difficulty meeting the diverse meal needs of students, and student life factors such as perceptions, education, and skills.<sup>3</sup> Implementing an outdoor community fridge on campus will help address the issue of food insecurity by providing a financially and physically accessible food source for students and members of the community. Our goal was to implement a fully functional, collaborative, and financially sustainable community fridge on McMaster University's campus.

## Objectives

1. Finalize logistics of fridge shelter construction (funding, supplies, location approval)
2. Create a network of volunteers and partners for the fridge's upkeep and supply
3. Develop promotion strategies to engage the McMaster community with the fridge

## Reporting

To achieve our first objective, through the support of multiple partners, we secured lumber and talent to build the community fridge shelter, which will house the fridge, freezer, and pantry. The shelter will be installed outside of the McMaster University Student Center (MUSC) in early 2022. To maintain financial sustainability, we applied for grants and created an iFundMac page to crowdsource monetary donations to keep the fridge stocked in the long term with a current fundraising goal of \$5,000.

For our second objective, we created an online in-take form for individuals interested in volunteering. We defined volunteer criteria and created a volunteer application form, with the first round of volunteers being selected/finalized in January 2022. We have contacted many community partners, including restaurants and local businesses, who are interested in engaging with this project after the fridge is installed. The project will remain sustainable as it is a student-led initiative managed by the Student Wellness Center and MSU Food Collective Center.

For our third objective, we created an [Instagram account](#), [iFundMac page](#) and [Daily News article](#) to promote the fridge to the McMaster community.

## Collaborators

We would like to extend our appreciation to Morghen Jael from the Food Collective Centre and Zeinab Khawaja from the Student Wellness Centre for their abundance of effort, guidance, and support through this journey. Furthermore we appreciate the dedication of Dr. Kate Whalen and Abbie Little from the Academic Sustainability Office for providing their essential support to this project. We would also like to thank Sydney Potts of OPIRG McMaster for assisting us with funding and offering to donate produce from the OPIRG community garden. We would like to thank Megan Bieksa from Facility Services and Mackenzie Mercuri-Rivers from the Student Wellness Center for their support with promotions and communications. Additionally, this project would not have been possible without the help of the Facility Services and Dr. Stephanie Springgay from the School of the Arts, who helped build and paint the fridge shelter. Finally, we would like to thank Chris Roberts from Hospitality Services who also played the vital role of assisting with health and food inspections as sourcing food for this project.

# Maps, Camera, Action: Supporting McMaster's Native Bees

## Student Authors

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## Community Project Champions

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**Craig MacDonald**, Director of Maintenance Services, Facility Services



The Native Bees Project Installation Team in front of one of the new solitary bee home locations by the Pollinator Garden on campus. From left to right: Edward Kang, Tianna Destro, Sydney Lai, Sarun Balaranjan.  
 Photo credit: Georgja Kirkos

## Overview

Global ecosystems rely on bee pollination to maintain life and yield agriculture.<sup>1</sup> In Canada, solitary bees, are the primary pollinators that fertilize flora to produce food that local species require for survival<sup>2</sup>; this promotes local ecosystem health and biodiversity.<sup>3</sup> According to Canadian researchers, local solitary bee populations are under extinction-level threat due to the overuse of harmful pesticides and competition with non-native bee species.<sup>4</sup> Increased pesticide use has left Ontario's native bee populations with 89% fewer offspring and 85% fewer nests.<sup>5</sup> McMaster University, in accordance with the Okanagan Charter, seeks to address this issue by directly increasing native bee populations and educating the community on their importance. In 2019, McMaster received the "Bee Campus" designation through Bee City Canada, which demonstrates McMaster's ongoing commitment. Our goal was to expand on the progress made by prior teams and support native bees through education and habitat creation.

## Objectives

1. Facilitate the installation of new solitary bee homes at McMaster
2. Develop an interactive map of all the bee homes with photos and descriptions
3. Prepare a livestream camera to improve visibility of bees on campus

## Reporting

To achieve our first objective, we surveyed McMaster to identify new locations and installed 25 new bee homes with Facility Services. McMaster now has a total of 75 bee homes. The homes were constructed with pine board and bamboo tubes, which have been shown to support native bee population growth.<sup>6</sup> We consulted graduate student, Noah Stegman, to draft a list of appropriate native plant species to sustain the bees year-round. These plants are to be purchased and planted in Spring 2022 by Facility Services.

To build our ArcGIS interactive map, we visited all existing bee homes to take pictures and gather location coordinates. Each bee home location on the finished map is indicated with a bee icon that, when clicked, displays a description, pictures, and surrounding plant species. The project's communications team helped us upload the map to the Facility Services website to increase bee visibility on campus.

We successfully laid the groundwork to install a livestream camera at the Whidden Hall bee home location. We determined that this location would be appropriate to provide power and an internet source to channel the livestream. Facility Services purchased a camera and designed its attachment for the home to be installed in Spring 2022 by Facilities Services. This livestream will inspire further education and action to support bee populations that are vital to our environment and health.

## Collaborators

We thank our Community Project Champions, Abbie Little and Craig MacDonald, for their zealous guidance and support during this project. We also thank the following individuals for their support: from Facility Services, Robert Stevens and Dwayne Massey for installing the bee homes, and Elliot Jeyaseelan for his technical support with the camera and website. From Security Services, Jacob Westerhof for his camera installation guidance. From MSU AVTEK, Anthony Scime for livestream consultation. From Esri Canada, Iain Greensmith and Jasmine Sohal for teaching us how to use ArcGIS. From our SUSTAIN 3S03 Native Bee Communications group, Gabriel Lonuzzo, Christian Blazekovic, Gabriela Danilowski, and Molly Spurr for publishing our map online. We also thank Biology graduate student, Noah Stegman, for his bee and plant expertise, and our course instructional team, Dr. Kate Whalen, Liana Bontempo, and Mubariz Maqsood, for their guidance.

# Generating Student Awareness of Sustainability Practices within the MSU

## Student Authors

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**Omar Shahid**, Science | **Zain Siddiqui**, Science

## Community Project Champions

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**Sioban Teel**, VP Education, MSU



Coloured waste bins represent the commitment of the MSU services to ensure their recycling and waste management practices are aligned with best practices.

Photo credit: Megan Bieksa

## Overview

Research studies have shown that most college students are unaware of sustainability practices on campus.<sup>1</sup> This lack of awareness highlights the importance of making these sustainability practices more visible to students on a continuous basis.<sup>2</sup> Student unions can play a role in highlighting sustainable practices of their services.<sup>3</sup> Given this vital need to implement sustainable strategies and communicate them to students, the McMaster Student Union (MSU) decided to work with their key services to understand and bring greater awareness to each service's sustainability practices and goals. The MSU chose five services that had the greatest environmental impact due to their operational nature. The goals of our project were to support the MSU in capturing their sustainability practices and goals and to create greater awareness of the MSU's sustainability practices amongst the student body.

## Objectives

1. Understand how each MSU service addresses sustainability within their business operations
2. Share each service's sustainability goals and recommendations with the MSU
3. Create a transition plan to support continuation of MSU's sustainability journey

## Reporting

We began our project by engaging with five MSU services (The Silhouette, Underground, TwelvEighty, Union Market, and The Grind) through virtual consultation to help us understand their sustainability goals. We identified multiple sustainable goals that involve paper reduction, eco-friendly purchases, and more efficient waste management techniques. The service representatives identified supports needed to achieve their goals, which included funding, resources, expertise for strategic planning, and alignment of priorities among team members. Each service voiced their concerns on pandemic conditions, highlighting challenges due to in-person restrictions, reduced student engagement on virtual platforms, and difficulty in transitioning to online formats.

On November 28th, we presented our findings to the Student Representative Assembly (SRA). We shared insights and recommendations from our interviews, including greater budget flexibility, more transparent expectations, and stronger strategic direction to help serve the long-term interests of each service. Our presentation was well received with multiple SRA members taking interest in each service's efforts, challenges, and sustainability goals.

Finally, our team developed a transition package that outlines industry best practices on topics involving eco-friendly printing material, transitioning to digital platforms, and waste management. Our transition package also encourages new SUSTAIN students to capture the service's learning, actions, challenges, and successes relating to their sustainability goals. Importantly, we encourage that the next phase of this project focus on communicating and highlighting the significant achievements made by each service, with the goal to generate awareness and continued efforts that the MSU and its services are making for a more sustainable McMaster.

## Collaborators

We would like to thank Andrew Mrozowski, Editor-in-Chief of The Silhouette; Paula Scott, Creative Director and Manager of The Underground Media & Design; and Gabriela Rempala, Manager of TwelvEighty, The Union Market, and The Grind, for teaching us about each service and sharing their future sustainability plans. We also send our appreciation to Hargun Kaur, Associate VP, MSU; Sioban Teel, VP Education, MSU; Dr. Kate Whalen and Liana Bontempo of McMaster's Academic Sustainability Program; and the SRA for the support they have provided in our efforts to connect with and relay the sustainability goals of our collaborating MSU services.

# Residence Student Perceptions of Water Bottle Use

## Student Authors

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Sustain 3S03 student team and CPCs displaying reusable bottles  
 Photo credit: Georgia Kirkos

## Overview

Every minute, over one million plastic bottles are purchased worldwide.<sup>1</sup> In 2016, 93% of plastic bottles purchased in the USA ended up in landfills or oceans.<sup>1</sup> To combat this, according to research conducted in 2018, 16 Canadian universities have banned the sale of single-use plastic water bottles.<sup>1</sup> However, research on the impact of these bans is limited.<sup>1</sup> One study showed an increased consumption of sugary beverages and more plastic waste.<sup>2</sup> While results are inconclusive, there seems to be agreement on the need to develop a “culture” of sustainability on campus.<sup>3</sup>

Survey data collected by McMaster in 2019 revealed that 80% of 800 residence student respondents purchase plastic water bottles and 60% keep cases of bottled water in their rooms. Our goal was to determine why residence students gravitate towards plastic bottles, so we can make data-driven recommendations to support reuse.

## Objectives

1. Understand residence students’ perceptions towards single-use plastic bottles
2. Determine barriers preventing students’ usage of refillable water bottles
3. Share results with McMaster for further sustainability research and action

## Reporting

To achieve our first two objectives, we conducted a textual analysis of 234 residence student responses to the open-ended question, “what would you do to reduce or eliminate the usage of single-use plastics in residence?” The most frequent response theme was ‘Reusable Bottles’, which included students suggesting bottle giveaways and commitment to bring their own bottle for refilling. The second most frequent response theme was ‘More Fountains’, which included suggestions to include more water fountains for more convenient access. The third most common response theme was ‘Filters’ suggesting individual water filters and more filtered water refill stations.

We then compared how both quantitative and qualitative survey responses varied amongst residences. We looked at data from each residence building and compared it to information on distance to eateries, building age, presence of Living Learning Communities, and water fountain infrastructure. We found that perceptions were similar between residences. However, students in older buildings seemed to be more concerned about water quality. As well, students with closer proximity to on-campus dining facilities expressed interest in a reusable drink program. Overall, students support the creation of a system that makes refilling convenient and trustworthy.

To achieve the final objective, we presented our findings to the McMaster Sustainability Advisory Committee. Recommended next steps include further research on how student perceptions have changed following the 2020 installation of residence fountains and filters. We also recommend awareness campaigns to continue improving trust in water quality.

## Collaborators

We would like to extend our gratitude to our Community Project Champions Liana Bontempo and Monica Palkowski. We also thank Dr. Kate Whalen from the Academic Sustainability Programs Office, Craig MacDonald from Facility Services, and members of the McMaster Sustainability Advisory Committee for their support with data analysis, infrastructure data, and a platform to share our findings, respectively.

A full report of findings can be found [here](#).



# Sustainable Procurement at McMaster

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## Community Project Champions

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**Tracie Felton**, Manager, Strategic Procurement



Sustain 3S03 student team and CPCs  
Photo credit: Georgia Kirkos

## Overview

The UN Sustainable Development Goal for 'Responsible Production and Consumption' urges us to focus on what we buy and how.<sup>1</sup> McMaster has a history of sustainable procurement. In 2009, the University worked with Grand & Toy to replace cardboard packaging with reusable containers and tote bags resulting in a reduction of 10,000 cardboard boxes annually.<sup>2</sup> In 2012, McMaster worked with sustainability students to develop the University's first Sustainable Procurement Guide.<sup>3</sup> During the 2019-2020 academic year, McMaster spent a quarter of a billion dollars on goods annually.<sup>4</sup> Therefore, it is important to consider the environmental and social impacts of the University's purchases. McMaster's department of Strategic Procurement identified an opportunity to update and enhance its sustainable procurement program, and they sought support from SUSTAIN 3S03 students. The goal of our project was to work with Procurement to develop processes and resources that would encourage sustainable procurement practices at McMaster.

## Objectives

1. Highlight supplier stories related to sustainability initiatives
2. Update and enhance McMaster's Request for Proposal (RFP)<sup>5</sup> template with comprehensive sustainability questions
3. Redevelop McMaster's Sustainable Procurement Guide to evaluate RFP responses

## Reporting

To highlight supplier stories, we met with representatives from some of McMaster's suppliers. We learned about their sustainable practices and identified inspiring stories from each supplier. Success stories were selected based on their connection to McMaster's sustainability goals, ability to have measurable impacts, and ability to inspire action towards sustainable procurement practices.

Through updating McMaster's previous sustainability-related RFP questions, we assessed several examples and best practices. Six questions from the HP Sustainable IT Purchasing Guide<sup>6</sup> were ultimately selected because responses could be measured, compared, and verified. To further align with our focus on social sustainability, we created one additional question asking suppliers if they provided paid time for their employees to volunteer.

To accompany the RFP questions, we redeveloped McMaster's Sustainable Procurement Guide for purchasers to evaluate and compare supplier responses to the RFP questions. The Guide includes 'what to look for' in supplier responses, an evaluation scale, and key definitions. We published our work, including the supplier stories, RFP questions, procurement guide, and more, creating McMaster's first Sustainable Procurement webpage.<sup>7</sup> Upon presenting our work to McMaster's CFO we shared our work with other universities to disseminate information, facilitate dialogue for potential collaboration, and inspire action towards sustainable procurement practices in higher education.

## Collaborators

Thank you to our Community Project Champions, Angelo DiLettera and Tracie Felton, for their support and guidance throughout our project. Thank you to Ed Robinson, Fab Consorti, and Katina Papulkas from Dell; Glenn Urquhart and Sanaa Raizi from Grand & Toy; Darryl Fleguel from Thermo Fisher Scientific; and Jeff Rands and Vanessa Schurter from Avantor Sciences for sharing their inspiring sustainability success stories. Thank you to Frances Edmonds, Head of Sustainable Impact from HP Canada, for her expertise and guidance. Thank you to Roxanne Flitcroft, also from McMaster's department of Strategic Procurement, for bringing our project deliverables to life on McMaster's first Sustainable Procurement webpage. Thank you to Dee Henne, McMaster's CFO, for her encouragement and support on sharing our work beyond McMaster. We would also like to thank Dr. Kate Whalen, McMaster's Associate Director of Academic Sustainability Programs, for mentoring us over the course of this project.





# ACCESS Tech: Communicating the Importance of IT Collection, Reuse, and Donation

## Student Authors

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## Community Project Champions

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From right, Reemal Shabbaz and Hafsa Raza, members of the ACCESS Tech communications team at McMaster University with some of the collected technology for Hamiltonians in need.

Photo credit: Bela Tayal

## Overview

In 2020, 53.6 million tonnes of e-waste were dumped into landfills across the globe.<sup>1</sup> Hamiltonians produce ~2,000 tonnes of e-waste annually<sup>2</sup>, with 60-70% ending up in landfills.<sup>3,4</sup> McMaster has a program for recycling, reusing, and donating e-waste, the latter being ideal for social and environmental sustainability. This initiative was halted by the pandemic when community members needed access to technology for vital reasons like school, employment, healthcare, and social support.<sup>5</sup> The initiative was rebooted and renamed 'ACCESS Tech'. We worked with another student group who coordinated event logistics. Our goal was to educate our audience on how reusing technology supports the community and environment, and inspire them to donate.

## Objectives

1. Educate about e-waste and reuse to inspire action
2. Disseminate information about the collection and reuse event
3. Publicize measurable results to encourage future participation

## Reporting

To initiate our first objective, we met with the events team and our community partner, Empowerment Squared, a local charitable organization that empowers newcomers, racialized, and marginalized communities with the tools and opportunities to thrive.<sup>6</sup> Having a consistent plan with our collaborators ensured that the event was cohesive. We also researched our target audience, consisting of McMaster staff, faculty, and students, which helped us choose outlets that maximize reach.

Through collaboration and consensus building, we developed key messages that inspired our community to donate. We published an article that became one of the most read stories of the week on the McMaster Daily News, and we created posts on social media. We also hung informational posters around campus. The Facility Services website provided us with another platform for FAQs.

We shared the impressive results of 780 kilograms of e-waste diverted within McMaster through social media, a mass email to all staff and faculty, a spotlight in the UTS Connectivity Newsletter, and a report to the McMaster Sustainability Advisory Council. We drafted messaging to be shared once community impacts are assessed. This project will support future collection and donation events as well as continue the important role of communications in building awareness, inspiring action, and serving our community.

## Collaborators

We would like to thank Megan Biekse, Carlos Figueira, Richard Godsmark, Alexander Schaap, Paula Brown-Hackett, Craig MacDonald, Dr. Kate Whalen, Lesley Ure Hardsand, Georgia Kirkos, and all the Facility Services and UTS staff for their support. We would also like to thank Empowerment Squared, for their partnership in the development and implementation of the ACCESS Tech initiative as well as network members Munar Learning Centre, Hamilton Centre for Newcomer Health, Immigrant Working Centre, and the Afro Canadian Caribbean Association. Additionally, we want to extend a warm thanks to the SUSTAIN 3S03 events team who planned two successful events. Thank you to everyone who shared information, donated, volunteered, and participated in this initiative.

# ACCESS Tech: Reimagining McMaster's Process for IT Collection, Reuse, and Donation

## Student Authors

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Brown-Hackett**, University Technology Services (UTS) | **Craig  
MacDonald**, Facility Services | **Carlos Figueira**, Facility Services



Picture taken on October 22nd, 2021, at the device sanitization booth during ACCESS Tech's Collection Event.  
Photo credit: Georgia Kirkos

## Overview

E-waste is the fastest growing global waste stream.<sup>1</sup> The need to upgrade electronic equipment at McMaster University over the years led to an increase in e-waste and kickstarted multiple initiatives since 2009 that focus on improving the process around e-waste.<sup>2</sup> These initiatives were impactful, notably the 2019 'Trash to Treasure' collection and donation initiative, which resulted in 70 refurbished computers donated to children in need.<sup>3</sup> The global pandemic halted the progress of these initiatives during 2020. Therefore, the goal of our project was to continue the momentum from previous years by modifying the 2019 process for collection, reuse, and community donation to fit the current situation of the pandemic.

## Objectives

1. Redevelop a process for IT collection, sanitization, and redistribution
2. Host events to collect and reuse technology
3. Redistribute devices for reuse to McMaster and Hamilton Communities

## Reporting

Taking over the project after pandemic dormancy, our team consistently planned with our Community Project Champions (CPCs) to develop the ACCESS Tech initiative. To build upon the previous groups', we made a working inventory spreadsheet for incoming and outgoing electronics, and a donor intake form to coordinate our collection event. We dedicated extensive time cataloguing items and wiping e-data at McMaster's Campus Services Building in conjunction with logistics planning throughout the semester to prepare for two events.

We worked with another SUSTAIN 3S03 student group focused on communications to inspire participation in the initiative and attendance at our planned events. With the communications team's marketing and our CPCs' guidance, we successfully hosted two, well-attended events. Our first event was held on October 22nd and focused on IT collection and sorting items for refurbishment, reuse, or recycling. Our second event was held on November 24th and provided opportunities for McMaster students to take items for reuse.

Our group collected over 300 devices from the first collection event, including a combined total of 15 laptops and computers in excellent condition. High-quality devices were designated for distribution to our community partner, Empowerment Squared (E2), for refurbishment and donation to community members in need. Items not destined for community donation were made available for reuse at our second event, which saw over 250 students in attendance. Through refurbishment and reuse, over 780 kg of electronics was diverted from recycling. Overall, we believe this term's successes prove the rapid momentum and promising future of ACCESS Tech!

## Collaborators

We would like to thank our Community Project Champions for the amazing mentorship throughout the term. We also want to thank our hard-working volunteers, Michal Nietresta, Rahman Afzali, Simran Saini, along with Rose Senat from E2, Abbira Nadarajah and Mathieu Chenier from the McMaster E2 student chapter, and the Facility Services and UTS staff members who donated their time to make our event an enormous success! A big thanks to the McMaster Engineering Society for collaborating with our team on the redistribution event. We also extend our gratitude to the ACCESS Tech Communications Team (Reemal Shahbaz, Bela Tayal, Hafsa Raza), who we worked closely with over the course of the project. Thank you to E2 for accepting the community donations and distributing them to those in need. Finally, thank you to everyone from the Hamilton community who attended and donated to the ACCESS Tech initiative!



# SUSTAIN 4S06

## LEADERSHIP IN SUSTAINABILITY

SUSTAIN 4S06 is a final-year course where students gain leadership skills and apply them by working in interdisciplinary teams to develop and implement a sustainability-focused project within the community.

**Dr. Kate Whalen**  
Course Instructor



*“Through qualitative research and interdisciplinary collaboration, SUSTAIN 4S06 highlights the breadth of sustainability while teaching students how to be advocates for change.”*

Sandra Alexander, Science

Photo location: New Hampshire, United States

Photo credit: Balazs Buszynak, Unsplash

# 100In1Day Hamilton: The Plan(ning Committee) for the Future



100In1Day logo that highlights the innovations and actions done throughout this festival.  
Photo credit: [100In1Day Canada](#)

## Student Authors

**Sandra Alexander**, Science | **Noah Bacon**, Science  
**Olivia Dong-Hamilton**, Science

## Community Project Champion

**Abbie Little**, Community Engagement Coordinator, Academic Sustainability Programs Office



## Overview

100In1Day is a global festival that motivates communities to engage in 100+ citizen-led interventions to inspire positive change, all in one day.<sup>1</sup> Since joining this initiative in June 2015, Hamiltonians have consistently led 100+ interventions each year to build a more inclusive city.<sup>2</sup> The planning committee, a group of local volunteers, facilitates event planning and promotion to ensure the success of the festival.

Like many groups during the COVID-19 pandemic, the planning committee had to adapt to a virtual format. This led them to face unique challenges that would be valuable to learn from. To understand their perceptions, we interviewed six volunteers about their experiences. Our goal was to understand how 100In1Day Hamilton (100In1DH) can be sustained from the planning committee's perspective.

## Objectives

1. Understand volunteers' attitudes and perceptions of 100In1DH through virtual interviews
2. Identify key themes among the volunteers through qualitative thematic analysis
3. Present findings to the 100In1DH volunteers

## Reporting

To achieve our first objective, we interviewed six members of the planning committee. We asked questions like "why did you first take part in the committee?" and "what would affect your decision to rejoin?" to holistically understand their experiences.

To achieve our second objective, we used thematic analysis to identify key themes. We found that volunteers are mainly motivated by the opportunity to facilitate urban development. The tangible community changes are appealing to those involved and we expect that it will continue to garner interest for 100In1DH into the future. According to all six volunteers, establishing formalized roles within the committee has the potential to improve the experience of planning 100In1DH. Addressing leadership through formalized roles and partnerships was mentioned across the interviews as a key factor to improving the 100In1DH volunteer experience and keeping volunteers involved. We believe that restructuring the committee with this change may help volunteers find their place within the group and provide them with confidence to take on more challenges and grow as a team.

To achieve our third objective, we prepared a presentation with our results. From our analysis, our group suggested the following recommendations: 1) to adopt formalized roles within the committee and 2) to adopt an ambassador program, continuing to aid recruitment of 100In1DH volunteers from external organizations and increase involvement of new demographics. We presented our findings and recommendations to the planning committee, who endorsed our findings and agreed to implement our suggestions for the June 2022 festival.

## Collaborators

We would like to thank Dr. Kate Whalen (Course Instructor and Principal Investigator), Natalie Ciancone (Teaching Assistant), Abbie Little (Community Engagement Coordinator at the Academic Sustainability Office), our interviewees, and the 100In1DH planning committee for their invaluable contributions to this project. Their support and feedback helped guide us to the successful endorsement of our recommendations. We hope this will lead to the progression of a more sustainable 100In1DH for the community.

# Understanding Intervention Leader Perceptions of 100In1Day Hamilton



Screen capture with the 100In1Day Planning Committee during the project presentation and workshop. Photo credit: Kate Whalen

## Student Authors

**Trystan Cull**, Science | **Alicia Jacob**, Science  
**Quinn Macpherson**, Arts & Science | **Madeline Guile**, Business  
 Community Project Champion  
**Abbie Little**, Community Engagement Coordinator, Academic Sustainability Programs Office

## Overview

According to Maslow, social interaction and belongingness is a necessary component of psychological fulfillment.<sup>1</sup> Community engagement initiatives that aim to establish connections between individuals can improve belongingness in growing communities such as Hamilton.<sup>2</sup> 100In1Day is an example of a community engagement initiative that is focused on inspiring change in communities. 100In1Day Hamilton has been operating for the past seven years and aims to support sustainability and create connections by encouraging community members to work together.<sup>3</sup> The initiative relies on the support of leaders within the Hamilton community to run interventions that aim to bring people together. Given the instrumental role of intervention leaders, this study aimed to understand their perceptions to help develop and guide future 100In1Day initiatives.

## Objectives

1. Interview intervention leaders from June 2021 100In1Day Hamilton
2. Identify common themes of 100In1Day leader experiences
3. Share findings and recommendations with the 100In1Day Hamilton Planning Committee

## Reporting

To achieve our first objective, six 100In1Day Hamilton intervention leaders were recruited and interviewed regarding their perceptions and experiences of leading interventions during the June 2021 initiative.

To achieve our second objective, thematic analysis was used to distinguish the following three key themes:

1. Responsibility: Participants expressed that community engagement and collaboration with community networks lead to feelings of community responsibility and agency, which supports 100In1Day Hamilton’s success and sustainability.
2. Education: Participants discussed that the structure of 100In1Day Hamilton interventions encouraged them to share personal interests and passions and use education as a tool to better the community, bring people together, and encourage people to participate more actively in the Hamilton community.
3. Accessibility: Participants indicated that interventions were often promoted through social media and word of mouth and thus, relied on community networks and volunteers to promote their intervention as well as make the intervention accessible on the day of. These networks play an important role in the ongoing success of the 100In1Day Hamilton initiative.

To achieve our final objective, we presented our research findings to eight members of the 100In1Day Planning Committee and discussed with them ways to enhance future 100In1Day Hamilton initiatives. This included the proposal to increase 100In1Day Hamilton’s social media presence, introduce an ambassador program, and define roles within the committee.

## Collaborators

We must firstly thank the 100In1Day Hamilton intervention leaders who graciously shared their experiences with us. We are grateful for the opportunity to learn about their projects and experience their passion for their communities. We would like to sincerely thank Abbie Little, Community Engagement Coordinator for McMaster’s Academic Sustainability Programs Office. This project would not have been possible without her insightful guidance and feedback. We would also like to thank Dr. Kate Whalen, our course instructor, and the Associate Director of McMaster’s Academic Sustainability Programs Office, for her significant support.

# Student Perceptions of Water Bottle Refilling on Campus

## Student Authors

**Austin Barr**, Science | **Madison Hunter**, Science

**Rick Mitra**, Science | **Simon Minich**, Arts & Science

## Community Project Champions

**Liana Bontempo**, Wellness and Sustainability Manager, Hospitality Services

**Monica Palkowski**, Living Learning Coordinator, Housing & Conference Services



Refillable bottle in backpack

Photo credit: [Bluewater Sweden](#) on [Unsplash](#)



## Overview

“Responsible Consumption and Production” is one of the United Nations’ Sustainable Development Goals.<sup>1</sup> This goal, however, is impeded by the large-scale consumption of single-use plastic water bottles—they are a major polluter and source of waste. A survey conducted during the 2018/19 school year indicated that 80% of McMaster University student residents used single-use water bottles on campus.<sup>2</sup> While previous literature indicated university students’ interest in sustainable alternatives including the use of water bottle refill stations.<sup>3</sup> Introducing campus-wide policies such as banning single-use bottles without student consultation may have unintended consequences (i.e., consumption of sugary drinks and increased plastic waste).<sup>4</sup> This provided impetus for us to interview McMaster students to understand their current perceptions on water bottle refilling and banning of single-use water bottle sales on campus. The goal of this project was to help inform potential solutions to address plastic water bottle waste at McMaster University, guided by student feedback.

## Objectives

1. Gather perceptions of McMaster University students regarding refillable water bottle usage
2. Perform thematic analysis to identify significant trends in the qualitative data
3. Share our results and recommendations with relevant stakeholders

## Reporting

To achieve our first objective, we conducted interviews with four participants. These participants were first-year undergraduate students living in a McMaster residence building with a pre-identified interest in sustainability. During the interviews, we inquired about how they obtain and consume their water on campus, specifically collecting perceptions on reusable and non-reusable water sources.

Regarding our second objective, our research team performed thematic analysis on the interview transcripts. First, we learned that accessibility related to proximity and cost is a major influence in student water consumption. The closer and less-expensive a water source is, the more appealing it is to students. In addition, we discovered that hygiene-related factors impacted students’ water usage. Participants preferred high-quality and filtered water sources, and the COVID-19 pandemic limited their use of public water fountains. Given these themes, we advise decision makers to implement more accessible (i.e., proximate and low-cost) and hygienic (i.e., filtered and contactless) low-waste water sources across campus. These initiatives can take on many forms, including the installation of more contactless refill stations. These findings and recommendations were presented to the McMaster Sustainability Advisory Council (MSAC). McMaster recently formed a Bring Your Own Bottle working group made up of students, faculty, and staff. The group launched a website with FAQs and a place for an interactive map of the more than 200 water refill stations on campus. This website is linked [here](#). We are grateful to know our findings contributed to positive, sustainable change at McMaster University.

## Collaborators

We would like to express our gratitude to all those who gave us the assistance and support to complete this report. Special thanks are due to our Community Project Champions, Liana Bontempo and Monica Palkowski, as well as our professor and supervisor, Dr Kate Whalen. All the support, encouragement and guidance was crucial in the success of this project. We would also like to extend our gratitude to our TA, Natalie Ciancone, who guided us in the right direction at every step of this project. We would also like to thank McMaster University for providing us with this opportunity to conduct such an interesting project. Finally, we want to thank the research participants, without whom none of this would have been possible.

# Student Perceptions of McMaster’s Sustainability Practices and Insights to Improve them



## Student Authors

**Maryam Rehman**, Social Sciences | **Michelle Mariaprabhu**, Science  
**Nicole Chong**, Business | **Ramitha Muralitharan**, Science  
**Robert Rozman**, Science

## Community Project Champions

**Michael Moore**, Manager, Sustainability, Urban Design, and Space Planning, Facility Services | **Giancarlo Da-Re**, Project Development Specialist, Facility Services

Student project team members at McMaster’s rainbow crosswalk. From left: Ramitha Muralitharan, Maryam Rehman, Michelle Mariaprabhu. Absent: Nicole Chong, Robert Rozman. Photo credit: Georgia Kirkos

## Overview

Students possess first-hand experience on campus, and their perspectives are invaluable in informing strategy development. The goal of this project was to gather student perspectives on McMaster’s sustainability efforts from actively-involved students and make recommendations for the implementation of McMaster’s first sustainability strategy.

## Objectives

1. Gain student perspectives of McMaster’s sustainability practices
2. Identify key themes through thematic analysis
3. Present findings and recommendations to decision-makers to enhance sustainability at McMaster

## Reporting

To achieve our research objectives, we recruited and interviewed nine undergraduate students who were knowledgeable about sustainability and had been involved in co-curricular sustainability activities at McMaster. Through thematic analysis, we identified three key themes regarding steps McMaster could take to enhance sustainability.

Theme one involved better promotion of academic and co-curricular opportunities for student engagement, as many students are unaware of these opportunities. For example, students mentioned that they would have completed the sustainability minor but discovered it too late into their academic careers.

Theme two called for the university to involve students in decision-making via more transparency about and engaging students in decisions and campus sustainability. For example, certain senior-level university committees publish meeting minutes and allow student attendance, but this information is not easily available to students.

Theme three involved connecting sustainability commitments and claims to concrete actions. Students mentioned a few key areas where perceived actions were not aligned with commitments: sustainable green spaces, divestment, and waste management.

In March 2022, we presented our findings and recommendations to the McMaster Sustainability Advisory Council (MSAC). We received supportive and encouraging feedback, and our findings are being incorporated into the implementation of McMaster’s inaugural sustainability strategy.

## Collaborators

We would like to express our most profound appreciation for Dr. Kate Whalen, who has provided us with valuable guidance at every project stage. In addition, we are grateful for our project champions who have guided us with their incredible knowledge of McMaster and provided great feedback throughout the project’s course. Grace Kuang, Communications Assistant from McMaster’s Academic Sustainability Programs Office, has also been extremely helpful in connecting us with participants through the Student Sustainability Ambassador Program. We would like to extend our thanks to the McMaster Sustainability Advisory Council (MSAC) for the opportunity to share our findings and recommendations, and for offering additional feedback and insight. Lastly, we would like to thank all the participants for their time and valuable input into this project; we could not have completed this project without their participation and interest.



# Sustainability Internship Program

An opportunity for undergraduate and graduate students to receive academic credit (undergraduates) or recognition (graduate students) for their self-directed learning.

McMaster's Sustainability Internship Program was created in 2009 in collaboration with students and faculty members aiming to support students in the practical application of their theoretical knowledge.

## PROGRAM OBJECTIVES



Support all Faculties in providing opportunities for students to engage in experiential learning



Foster collaboration between students, faculty, staff, and the broader community



Highlight the achievements of students who have successfully completed their Sustainability Internship



*"There has been environmental degradation in the Hamilton Harbour area due to years of uncontrolled industrial pollution. Restoration efforts are being led by local organizations such as the Bay Area Research Council (BARC). There is still a lot of work to be done, and I am optimistic that one day, we can swim in the harbourfront again."*

Elizaveta Zvereva, Sustainability Intern,  
Arts & Science

# Sustainability Internship Program

## Year in Review

### Reporting

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The Sustainability Internship supports the functions of academic departments across campus in their efforts to bolster students' self-directed, experiential learning. Undergraduate students pursuing independent study, capstone, experiential placement, and inquiry courses, to name a few, can obtain additional support from the ASP office. Graduate students engage in supported independent study, produce meaningful work, and receive a letter of reference upon successful completion of their project.

Over the past 12 years, the Sustainability Internship Program has supported more than 57<sup>1</sup> students in their experiential learning at McMaster.

This past year, three students took part in the Sustainability Internship Program:

- **Adrianna Diab** focused her third-year Integrated Science Independent Project on creating a culture of water bottle refilling and reuse, facilitated through a robust communications campaign geared towards students who will be living in a campus residence building.
- **Erin Nunn** leveraged her fourth-year Engineering & Society Inquiry project to survey sustainability student who had pursued personal, sustainability lifestyle challenges to identify barriers to living sustainably as a university student.
- **Elizaveta Zvereva** dedicated her third-year Arts & Science Individual Study project to interview local high school students to capture and share youth perspectives on the Hamilton Harbour with the broad goals to elevate youth voices on environmental issues and foster youth agency.

### Collaborators

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The Sustainability Internship Program is made possible through collaboration with Faculties from across campus, and with support from faculty, staff, community members, and especially the students who devote their time and energy into self-directed, community-based, and experiential learning about sustainability.

The individual student interns designed, developed, and created exceptional work through their self-directed learning. Integral support was provided by their respective academic departments, as well as the students' academic supervisors, community project champions, and project mentors.

Specific project collaborators are recognized as part of the students' project reporting in the pages to follow.



Brighter world banner located on campus along Scholars Rd  
Photo credit: Scholars Road

# Bring Your Own Bottle: Promoting Water Bottle Refilling to McMaster Residence Students

## Student Author

**Adrianna Diab**, Science

## Course

**ISCI 3A12: Independent Project**

## Academic Supervisor

**Dr. Kate Whalen**, Associate Director, McMaster's Academic Sustainability Programs Office



Bring Your Own Bottle Initiative Logo  
Photo credit: McMaster University

## Overview

A 2019 survey of McMaster students living in residence buildings showed that 80% of respondents reported regular consumption of single-use plastic water bottles and 60% store cases of bottles in their rooms.<sup>1</sup> Feedback cited concerns regarding access to desirable drinking water. In response, most common room sinks were retrofitted with filtered water taps, but this change was not explicitly communicated. The consumption of single-use bottles presents an opportunity to reduce campus waste production and improve sustainability. Other universities have implemented bottle bans; however, studies show they are not always effective.<sup>2,3</sup> The goal of this project was to create a culture of water bottle refilling and reuse, facilitated through a robust communications campaign.

## Objectives

1. Involve a diverse group of stakeholders to develop a communications campaign
2. Create accessible and transparent communication tools to engage residence students
3. Develop mechanisms to measure behaviour change towards refilling and reuse

## Reporting

During this project, results were received from the fall 2021 Residence Life survey showing a reduced level of plastic water bottle use from the 2019 survey referenced above, suggesting the effectiveness of installing filtered water taps in residence common rooms. To lead this initiative, a working group formed with the goal to develop and launch a communication campaign geared towards incoming and new residence students. The working group included students, faculty, and staff members from across campus and from various departments including Health & Safety, Facility Services, Hospitality Services, Housing and Conference Services, and many more.

Under the initiative name of Bring Your Own Bottle, the working group created a webpage complete with the benefits of refilling and reuse, frequently asked questions, and an interactive map displaying locations and images of the 200+ water refill stations across campus. To inform people of and bring them to the website, the group also created identifiable posters for display at each refill station, messaging to all incoming residence students, and videos for display on campus information screens.

To continue the communications campaign and measure its impact, the group identified two projects to be undertaken by sustainability students in the fall of 2022. One project will focus on in-person engagement activities within residence buildings and the other project will focus on data collection and analysis to determine if self-reported consumption of single-use bottles and water bottle sales are down and if refilling counts are up.

## Collaborators

I would like to thank my academic supervisor, Dr. Kate Whalen, for making my participation in this project possible and involving me at every step. I would also like to thank Lynn Armstrong and the McMaster Okanagan Committee for providing a 'home' and ongoing support for this initiative.

This project would not have been possible without the dedication of the Bring Your Own Bottle Working Group members, supporters from across campus, and the senior leaders who have sponsored and championed this initiative since inception. A full list of initiative collaborators and their contributions can be found online [here](#).



# Youth Perspectives of Hamilton Harbour



Elizaveta Zvereva speaking to a group of McMaster Student Sustainability Ambassadors during a skating social on the Hamilton Harbour.  
 Photo credit: Jaden Lall

## Student Author

**Elizaveta Zvereva**, Arts & Science

## Course

**ARTSSCI 3X03: Individual Study Course**

## Academic Supervisor

**Dr. Kate Whalen**, Associate Director, McMaster’s Academic Sustainability Programs Office

## Overview

Hamilton Harbour, a cultural and industrial landmark often carries negative connotations in social discourse due to the years of industrial pollution that changed the natural environment.<sup>1</sup> These negative connotations overshadow the hard work undertaken by government agencies, individual and corporate interests, and public interest organizations like the Bay Area Restoration Council (BARC) in the environmental remediation and revitalization of the harbour. Attitudes of various populations have been documented and used in city development; however, youth voices have not been included. Young people experience the environment in a unique way and gaining insight on their perspective of the Harbour can help organizations like BARC strategically implement programming to improve the youth experience of the Harbour.<sup>2</sup>

## Objectives

1. Obtain first-hand accounts of youth perspectives of Hamilton Harbour
2. Complete a reflexive thematic analysis of interview data
3. Share findings to advocate for youth voices in decision-making

## Reporting

To satisfy my first objective, I interviewed six high school students from the Hamilton Wentworth District School Board (HWDSB). Students shared memorable experiences of the Hamilton Harbour as well as their views on stigma, recreation, and identity.

To fulfill my second objective, I leveraged guidance published by Braun and Clarke (2006) to learn about and complete a reflexive thematic analysis of my interview data. I identified three key themes: 1) youth participants value recreation and associate the Harbour with social activities such as sports, festivals, and gatherings, 2) youth identified the value of personal experiences in forming strong attitudes about the Harbour, and 3) youth see the Harbour as a place where they can demonstrate their agency and impact decisions about their environment.

To fulfill my third objective, I presented my findings to various groups to teach them about the Harbour and inspire youth to use their voice and share their thoughts. My final research report and all relevant study documents were shared with BARC to help with their future program development and advocacy.

## Collaborators

I would like to thank my supervisor Dr. Kate Whalen for her infectious enthusiasm and support at every stage of this project. A huge thanks goes to Dr. Gail Krantzberg, Dr. Ken Cruikshank, and Christine Bowen from BARC for their guidance and help directing the focus of this project. I would also like to extend my gratitude to Theresa Sgambato, Kristen Armstrong, and Geeta Malhotra from the HWDSB for their support throughout this initiative. A huge thank you goes to Mark Lambert for his help with student recruitment. My deep appreciation goes to all the youth who gave their time and shared their perspectives with me; it was a pleasure to work with all the individuals involved!

# The Barriers to Living Sustainably as a University Student

## Student Author

**Erin Nunn**, Faculty of Engineering

## Course

**ENGSOCTY 4X03: Inquiry in an Engineering Context III**

## Academic Supervisor

**Dr. Kate Whalen**, Associate Director, McMaster's Academic Sustainability Programs Office



Screenshot from project [video](#)  
Photo credit: Erin Nunn



## Overview

Generation Z makes up the majority of students currently studying at McMaster University. With studies showing that younger generations are more sustainability oriented than those who are older<sup>1</sup>, the approaches to sustainable lifestyles of these individuals can be further analyzed to determine how they can be better supported. The McMaster course *SUSTAIN 2S03 – Evaluating Problems and Sustainable Solutions* features a project that requires students to take on a personal, sustainable lifestyle change. To assess the barriers that students experience when attempting to pursue a more sustainable lifestyle, students enrolled in SUSTAIN 2S03 in the fall of 2021 were asked to participate in a survey following the completion of their lifestyle change. With 34 responses, the results of this survey became the foundation of my Engineering & Society inquiry report with the goal of answering the central question: what are the barriers to living sustainably as a university student?

## Objectives

1. Gain insights from students pursuing sustainable lifestyle challenges in SUSTAIN 2S03
2. Analyze student responses to determine barriers to sustainable living
3. Recommend ways for McMaster to support students trying to live sustainably

## Reporting

Through research and personal experiences, I chose to define living sustainably as 'actively and consciously factoring environmental impacts into decision making processes, including making individual choices that can be maintained for future generations.' This definition was given to SUSTAIN 2S03 students at the start of their survey and framed the survey questions and how I analyzed their responses. Among the 134 students in the class, 34 completed the survey, which provided the data for my analysis.

One survey question asked participants to rank several criteria on a five-point scale from being "not a barrier" to an "extreme barrier" living sustainably. The most extreme barrier was cost, with over 75% of participants indicating that cost was a moderate or extreme barrier. With further analysis I found that all of those who selected cost as an extreme barrier were also living in student housing or on campus residences. This could suggest that increased living expenses impact students' ability to invest in sustainable items.

One way McMaster could better support students to live sustainably is through helping to lower costs related to sustainable living, such as forming partnerships with local food delivery programs. Continuing to provide sustainability-focused education is another way McMaster can support students. It was evident in the survey responses that SUSTAIN 2S03 left a lasting impact on its students and inspired them to make sustainable choices in their own life.

## Collaborators

I would like to share my sincerest thanks to Dr. Kate Whalen for her continued support and guidance throughout this inquiry, teaching me methods of primary research collection, and strategies for asking good questions. Thank you to Peter Topalovic, course instructor of SUSTAIN 2S03, and all survey participants for their support and participation in this research and inquiry.

# Student Sustainability Ambassadors Program (SSAP)

A co-curricular program and community hub for sustainability-minded undergraduate and graduate students and clubs aimed to foster collaboration.

Created in 2020, SSAP is a co-curricular program led by students in collaboration with the Academic Sustainability Programs Office and Hospitality Services to provide a platform to facilitate connections between sustainability-focused students and clubs at McMaster.

## PROGRAM OBJECTIVES



Generate student awareness of and engagement in sustainability



Foster student leadership in sustainability through collaborative and active learning



Support students in their pursuit of sustainable action



*“SSAP makes it easier for students to get involved and provides clubs with a larger community they can work with to further their goals.”*

Gabriel Lonuzzo, SSAP Coordinator

# Student Sustainability Ambassador Program (SSAP)

Year in Review



**Authors:** Abbie Little, Community Engagement Coordinator and SSAP Co-advisor, Academic Sustainability Programs Office, and Liana Bontempo, Wellness and Sustainability Manager and SSAP Co-advisor, Hospitality Services

## Reporting

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After a successful first year, six highly-engaged SSAP members participated in focus group discussions in the summer of 2021 to brainstorm opportunities for innovation to elevate the Program. The group created a new governance structure and communication strategy that enhanced student centered leadership and provided more opportunities for involvement.

To generate student awareness and engagement, the SSAP Coordinators facilitated six events, which engaged 160 students. The largest event was the SSAP Bonfire, which brought together 70 students from all Faculties and the Arts & Science program, and had representation from over a dozen McMaster clubs. During the event, the Coordinators facilitated fun and educational ice breakers and helped to foster collaboration among student attendees.

To foster student leadership, the SSAP Coordinators created a Slack channel for individuals to share news and events and to facilitate connections. Through this, 58 students joined the channel and 13 SSAP-affiliated clubs posted about their events encouraging others to collaborate and join. The SSAP Facebook group has continued to grow and act as a hub for students to connect. The SSAP Coordinators posted in the Facebook group four times a month to share resources, events, and news to other members. As of August 2022, there were over 200 members in the group, an increase of 35% in one year.

To support students in their pursuit of sustainable action, the SSAP Coordinators invited two speakers, Dimitri Lascaris and Matthew Green, to share their experience on politics, advocacy, and the climate crisis. More than 30 students engaged in the panel discussion and interactive activity.

Looking forward, SSAP Coordinators plan to focus their efforts on growing the student membership and facilitating collaborations between student groups and clubs. The team's vision is that SSAP will act as a hub for students to collaborate, share resources, and strengthen connections.



## SSAP Team Members

From left to right: Gabriel Lonuzzo, Breanna Pinto, Abbie Little, Fiona Sharpe, Grace Kuang  
Absent: Evan Ubene, Nicole Rob, Liana Bontempo

## Collaborators

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The launch and growth of SSAP this year has been incredibly rewarding. The successes of the program would not be possible without the amazing engagement of our student members and campus stakeholders. We thank the faculty and staff members for supporting SSAP as well as for supporting continuous program development. Our sincerest appreciation extends to the students who have contributed by joining the community and providing feedback for continuous improvement. Thank you to Breanna Pinto (Science), Evan Ubene (Masters in Engineering), Fiona Sharpe (Social Science), Gabriel Lonuzzo (Engineering), Grace Kuang (Health Sciences), Nicole Rob (Arts & Science), and Felicia Mikrogianakis (Engineering) for participating in the focus groups and acting as the SSAP Coordinators.

## SSAP Governance Structure

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The revised governance structure and communication strategy consists of layers, which provide students the opportunity to participate at the degree of commitment they are able to.

### SSAP Advisors

Abbie Little, the Community Engagement Coordinator at McMaster's Academic Sustainability Programs Office and Liana Bontempo, the Wellness and Sustainability Manager at Hospitality Services, founded the program, mentor the SSAP Coordinators, and report quarterly to the McMaster Sustainability Advisory Committee.

### SSAP Coordinators

Six students who volunteer to take on the additional responsibilities of coordinating SSAP over the course of a two-semester school term.

### SSAP-Affiliated Club

A sustainability-focused club (e.g., MacClimate Advocates, Zero Waste McMaster), with representatives who provide updates to SSAP.

### SSAP Members

Any student who wants to join the SSAP community [Facebook group](#) or the monthly email list.

## SSAP Events

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### SSAP Bonfire



**It's the Most SSAPerful  
Time of the Year**



### SSAP Skating Social at Princess Point







# References

Photo location: Mount Fanjing, Tongren, Guizhou, China

Photo credit: Ren Ran, Unsplash

## Year in Review 2021/2022

- 1 Based on Registrar Office June 2021
2. Based on the number of seats available
3. Includes Sustainability Internship students and GUCEL students

## Sustainable Development Goals

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